Manual de Operación / Operating Manual

PROTOCOLO DE COMUNICACIONES ZIGOR SOLAR CTR3:

- **DEFINICION MIB'S**
- **MAPAS MODBUS**

ZIGOR SOLAR CTR3 COMMUNICATION PROTOCOLS:

- **MIB'S DEFINITIOS**
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1 PRECAUCIONES

1.1 Precauciones generales

Para su propia seguridad y la del equipo, usted tiene que haber leído y comprendido las instrucciones recogidas en este documento antes de comenzar a trabajar.

Guarden las instrucciones en un lugar accesible a todas las personas que trabajen con el equipo para que éstas puedan consultarlas.

Solamente personal experto y correspondientemente autorizado debe manipular los equipos.

Advertencias de peligro. Al manipular o acceder al interior del equipo, las partes conductoras de corriente pueden estar sometidas a tensión. Tenga en cuenta especialmente puntos de soldadura, circuitos impresos, bornas de conexión, contactos de relé, etc. Antes de abrir el equipo, desconectar la tensión de todos los polos (tanto alterna como continua) y esperar al menos 5 minutos a que se descarguen los condensadores internos.

Prohibición de modificaciones arbitrarias. El equipo no debe modificarse respecto a la construcción técnica de seguridad sin el consentimiento expreso de ZIGOR. Cualquier modificación sin consentimiento de ZIGOR, excluye la responsabilidad por nuestra parte del daño causado por la modificación. En particular están prohibidos todos los trabajos de reparación, soldadura en placas de circuito impreso y el reemplazo de componentes, módulos, placas de circuito impreso sin la autorización expresa de ZIGOR. Si se usan piezas de repuesto sólo deben emplearse las piezas originales de ZIGOR.

ZIGOR declina cualquier responsabilidad de una inadecuada, negligente o incorrecta instalación del equipo.

Uso conforme a la finalidad prevista. El sistema suministrado, sólo debe utilizarse para su finalidad prevista. Cualquier uso no conforme a la finalidad está prohibido. ZIGOR no puede hacerse responsable de daños que resulten del uso no conforme a la finalidad. En tal caso, el usuario deberá asumir la responsabilidad exclusiva del riesgo. El uso conforme a la finalidad, está definido en la documentación. El sistema solamente debe exponerse a las admisibles influencias ambientales. Estas están especificadas en los datos técnicos del equipo.

Por favor siga las siguientes indicaciones genéricas para operar en condiciones de completa seguridad:

- El Sistema debe ser revisado una vez acabada la instalación por un técnico cualificado antes de su puesta en servicio. Si no se observa esta regla, la garantía no tendrá validez.
- Estos equipos no contienen partes utilizables por separado por el usuario.
- No dé potencia al aparato antes de que haya habido un control por parte de un técnico.
- El equipo no contiene elementos reparables o sustituibles por el usuario. En caso de avería o problemas de funcionamiento, contacte con ZIGOR.
- No sitúe el sistema en las cercanías de imanes de potencia, podrían producir un funcionamiento incorrecto.
- No bloquear ni tapar las rejillas de ventilación situadas en el armario.
- Si tiene problemas con los contenidos de este manual debe pedir asistencia a ZIGOR.
- El equipo está diseñado de acuerdo a la normativa española vigente. Compare estas normas con las normas correspondientes del país de instalación y con las normas más restrictivas de la compañía eléctrica con la que se trabaje.
- El funcionamiento del inversor no exige su apertura una vez se ha instalado. Todos los mandos de control para el usuario son accesibles desde el exterior.
- Los trabajos en el interior del armario están reservados a personal cualificado que conozca las medidas de seguridad a aplicar y las características técnicas concretas del equipo.
- La apertura del armario sólo es posible desconectando el interruptor general del inversor que bloquea mecánicamente la puerta. Este interruptor general, desconecta incondicionalmente los contactores de potencia de la entrada fotovoltaica, de la salida alterna y de la entrada alterna auxiliar.
- Aun y todo después de la desconexión del interruptor general las distintas tensiones siguen presentes en las bornas de conexión y el lado exterior de los contactores. Por estos motivos se

debe extremar la precaución y, si existieran, abrir los seccionadores de entrada y salida del inversor, externos al mismo.

- La apertura del interruptor general se debe hacer con el sistema parado (interruptor de activación en OFF) y no inyectando energía a la red, aunque la apertura del mismo es posible en cualquier condición.
- El sistema dispone para su funcionamiento de condensadores que almacenan gran cantidad de energía. Cuando se abre el interruptor general entra en funcionamiento el Descargador de los mismos y se oye un pitido. Cuando los condensadores estén en una tensión segura se deja de oír el pitido, esta operación dura unos 10 segundos.
- Si el sistema lleva un tiempo parado (media hora aproximadamente), al abrir el interruptor general puede no oírse el pitido ya que los condensadores se habrán descargado por sí mismos.
- Aún y con todos los sistemas de seguridad, antes de tocar ningún punto activo debe comprobar que no hay tensión alguna.
- Este sistema está destinado para uso industrial y no para domestico-comercial.
- Si se vierte algo de líquido accidentalmente sobre el Sistema desconéctelo y consultar con el personal de ZIGOR.
- El sistema está preparado para recibir alimentación desde los paneles fotovoltaicos. El campo fotovoltaico puede presentar riesgo de descarga eléctrica o quemaduras por su elevada tensión de funcionamiento.
- Durante labores de montaje, puesta en servicio o mantenimientos, utilizar protección ocular para evitar lesiones debidas a arcos eléctricos accidentales.
- Debe ser protegido de la lluvia y de la excesiva humedad e instalado en un ambiente limpio, sin líquidos inflamables, gases o sustancias oxidantes.
- La información de este manual solo se utilizará para la monitorización de los sistemas SUNZET, cualquier intento de realizar una actuación a distancia utilizando la información de este manual, será entendido como un acto negligente por parte del cliente.

Indicaciones Medio Ambientales. Diferentes subconjuntos del sistema pueden ser productos reciclables. Para preservar el medio ambiente, gestiónelos de acuerdo con la normativa y requisitos medioambientales vigentes en cada país o comunidad. En caso de duda consulte con el fabricante.

El contenido de este manual. El contenido es exacto en el momento en que se procede a su impresión. Pero, con la intención de cumplir con el compromiso de una política de continuos desarrollos y mejoras, el fabricante se reserva el derecho de cambiar las especificaciones del producto, o su funcionamiento, o los contenidos del Manual sin previo aviso.

2 PROTOCOLO COMUNICACIONES SNMP

2.1 Introducción

Los inversores solares trifásicos de la gama ZIGOR SOLAR disponen de un canal de comunicaciones para comunicaciones con el usuario, características:

- Conector RJ45
- TCP/IP
- Comunicación SNMP

El presente manual describe las distintas MIB's que son accesible por parte del usuario mediante SNMP.

Todos los datos son de consulta directa a los distintos inversores de la planta y solo son de consulta.

El protocolo SNMP define varias versiones de protocolo, en nuestro caso concreto se implementa la versión '2c' definida en *RFC-1901, (RFC-1908)*.

También a nivel de protocolo se utilizan los puertos por defecto, *161 UDP* para peticiones SNMP y *162 UDP* para 'traps' (éste último sólo uso interno).

El acceso SNMP se restringe a través de una clave de texto o 'community'.

"user" >>> ofrece acceso de lectura pero no de escritura.

La definición de variables accesibles se describe en las siguientes MIBs (véanse documentos asociados):

ZIGOR-SMI: (Structure of Management Information) define la estructura de información base.

ZIGOR-TC: (Textual Conventions) define las convenciones textuales establecidas.

ZIGOR-ALARM: define la estructura de alarmas activas.

ZIGOR-ALARM-LOG: define la estructura de histórico de alarmas.

ZIGOR-SOLAR CTR3: define la estructura de variables de estado, parámetros y OIDs de alarmas del equipo.

ZIGOR-PARAMETERS: definición de la estructura de parámetros del sistema

De tal definición se pueden clasificar los siguientes grupos de datos:

.1.3.6.1.4.1.4576.4.6.1.1 >>> variables de estado

.1.3.6.1.4.1.4576.4.6.1.2 >>> parámetros

.1.3.6.1.4.1.4576.4.3 >>> parámetros generales

.1.3.6.1.4.1.4576.4.5 >>> alarmas activas

.1.3.6.1.4.1.4576.4.5.1.2 >>> *tabla* de alarmas activas

.1.3.6.1.4.1.4576.4.8 >>> histórico de alarmas

.1.3.6.1.4.1.4576.4.8.1.5 >>> *tabla* del histórico de alarma

Importante:

Es importante hacer notar que muchas de las variables del equipo están destinadas solamente para USO INTERNO y por tanto NO DEBEN NUNCA SER MODIFICADAS.

Además algunas variables pueden estar únicamente disponibles en según qué modelo o variante de equipo.

Ejemplo:

Se desea obtener el valor de la variable 'zigorSysName' definida en ZIGOR-PARAMETER-MIB, conteniendo el nombre del equipo.

El OID correspondiente es '.1.3.6.1.4.1.4576.4.3.1.1', por lo que se habrá de hacer petición 'GetRequest' a una instancia del mismo, esto es '.1.3.6.1.4.1.4576.4.3.1.1.0'.

2.2 MIB DEFINITIONS: SMI

```
ZIGOR-SMI DEFINITIONS ::= BEGIN

IMPORTS
        MODULE-IDENTITY,
        OBJECT-IDENTITY,
        enterprises
                FROM SNMPv2-SMI;

zigor MODULE-IDENTITY
        LAST-UPDATED "201003071130Z"
        ORGANIZATION "Corporacion Zigor, S.A."
        CONTACT-INFO
                "       Corporacion Zigor, S.A.
                        Depto. I+D

                Postal: C/ Portal de Gamarra, 28
                        C.P 01013 Vitoria-Gasteiz , Alava
                        (Spain)

                Tel:    +34 (945) 214 600

                E-mail: zigor@zigor.com"
        DESCRIPTION
                "The Structure of Management Information for the
                Zigor enterprise."
        ::= { enterprises 4576 }        -- assigned by IANA

zigorProducts OBJECT-IDENTITY
        STATUS current
        DESCRIPTION
                "zigorProducts is the root OBJECT IDENTIFIER from
                which sysObjectID values are assigned.  Actual
                values are defined in ZIGOR-PRODUCTS-MIB."
        ::= { zigor 1 }

-- Note that zigor.2 is reserved

zigorMgmt OBJECT-IDENTITY
        STATUS current
        DESCRIPTION
                "zigorMgmt is the main subtree for new mib development."
        ::= { zigor 3 }

zigorExperiment  OBJECT-IDENTITY
        STATUS current
        DESCRIPTION
                "zigorExperiment provides a root object identifier
                from which experimental mibs may be temporarily
                based.  mibs are typicially based here if they
                fall in one of two categories
                1) are IETF work-in-process mibs which have not
                been assigned a permanent object identifier by
                the IANA.
                2) are zigor work-in-process which has not been
                assigned a permanent object identifier by the
```

```
                zigor assigned number authority, typicially because
                the mib is not ready for deployment.

                NOTE WELL:  support for mibs in the zigorExperiment
                subtree will be deleted when a permanent object
                identifier assignment is made."
        ::= { zigor 4 }

zigorModules OBJECT-IDENTITY
        STATUS current
        DESCRIPTION
                "zigorModules provides a root object identifier
                from which MODULE-IDENTITY values may be assigned."
        ::= { zigor 5 }

END
```

2.3 MIB DEFINITIONS: ZIGOR SOLAR

```
ZIGOR-SOLAR_CTR3-MIB DEFINITIONS ::= BEGIN

IMPORTS
        MODULE-IDENTITY,
        OBJECT-TYPE,
        OBJECT-IDENTITY,
        Integer32
                FROM SNMPv2-SMI
        TEXTUAL-CONVENTION,
        TruthValue,
        DisplayString
                FROM SNMPv2-TC
        zigorExperiment
                FROM ZIGOR-SMI
        PositiveInteger
                FROM ZIGOR-TC;

zigorSolarCTR3MIB    MODULE-IDENTITY
        LAST-UPDATED        "201003071130Z"
        ORGANIZATION        "Corporazion Zigor, S.A."
        CONTACT-INFO
                "       Corporacion Zigor, S.A.
                        Depto. I+D

                Postal: C/ Portal de Gamarra, 28
                        C.P 01013 Vitoria-Gasteiz , Alava
                        (Spain)

                Tel:    +34 (945) 214 600

                E-mail: zigor@zigor.com"
        DESCRIPTION
                "SOLAR_CTR3 MIB"
        ::= { zigorExperiment 6 }

EstadoDSP ::= TEXTUAL-CONVENTION
        STATUS      current
        DESCRIPTION
                "Type to represent the status of DSP"
        SYNTAX      INTEGER {
                off(1),
```

```
                waitLoad(2),
                waitAC(3),
                waitOn(4),
                on(5),
                waitOff(6),
                waitOpening(7),
                errorReset1(11),
                errorReset2(12),
                errorReset3(13),
                errorPreCharge(16),
                errorPwFail(18),
                errorVMin(19),
                errorVMax(20),
                errorFreq(21),
                errorIslanding(22),
                errorBusV(23),
                errorTermo(24),
                errorLeak(25),
                errorDriver(26),
                errorIDC(27)
        }

EstadoSistema ::= TEXTUAL-CONVENTION
        STATUS      current
        DESCRIPTION
                "Type to represent the status of the system"
        SYNTAX      INTEGER {
                stop(1),
                wait(2),
                start(3),
                fail(4),
                mppt(5),
                disconnected(6)
        }

CondicionArranque ::= TEXTUAL-CONVENTION
        STATUS current
        DESCRIPTION
                "Type to represent the start condition"
        SYNTAX      INTEGER {
                uPv(1),
                irradiance(2),
                solarTime(3)
        }

ZonaHorariaReactiva ::= TEXTUAL-CONVENTION
        STATUS current
        DESCRIPTION
                "Pre-defined time zones for reactive energy management"
        SYNTAX      INTEGER {
                zone1(1),
                zone2(2),
                zone3(3),
                zone4(4),
                zone5(5),
                zone6(6),
                zone7(7)
        }

EstadoModem ::= TEXTUAL-CONVENTION
```

```
        STATUS      current
        DESCRIPTION
                "Type to represent the status of the modem"
        SYNTAX      INTEGER {
                busy(1),
                withoutSIM(2),
                waitingPin(3),
                waitingPuk(4),
                ready(5),
                error(6),
                ppp(7)
        }
Architecture ::= TEXTUAL-CONVENTION
        STATUS      current
        DESCRIPTION
                "Type to represent the architecture of the system"
        SYNTAX      INTEGER {
                solarCTR3_300(1),
                solarCTR3_150(2),
                solarCTR3_100(3)
        }

zigorSolarCTR3Objects           OBJECT IDENTIFIER ::= { zigorSolarCTR3MIB 1 }

--
-- Status Variables
--
zigorSolarCTR3ObjEstado         OBJECT IDENTIFIER ::= { zigorSolarCTR3Objects 1 }

zigorSolarCTR3ObjVPv OBJECT-TYPE
        SYNTAX              INTEGER (-10000..10000)
        UNITS       "0.1V"
        MAX-ACCESS      read-only
        STATUS              current
        DESCRIPTION
                "Photovoltaic voltage"
        ::= { zigorSolarCTR3ObjEstado 1 }

zigorSolarCTR3ObjVEnt OBJECT-TYPE
        SYNTAX              INTEGER (-10000..10000)
        UNITS       "0.1V"
        MAX-ACCESS      read-only
        STATUS              current
        DESCRIPTION
                "Converter input voltage (not in use)"
        ::= { zigorSolarCTR3ObjEstado 2 }

zigorSolarCTR3ObjIEnt OBJECT-TYPE
        SYNTAX              INTEGER (-10000..10000)
        UNITS       "0.1A"
        MAX-ACCESS      read-only
        STATUS              current
        DESCRIPTION
                "Input current"
        ::= { zigorSolarCTR3ObjEstado 3 }

zigorSolarCTR3ObjFrec OBJECT-TYPE
        SYNTAX              INTEGER (0..10000)
        UNITS       "0.01Hz"
        MAX-ACCESS      read-only
```

```
        STATUS              current
        DESCRIPTION
                "Frequency"
        ::= { zigorSolarCTR3ObjEstado 4 }

zigorSolarCTR3ObjRAis OBJECT-TYPE
        SYNTAX              INTEGER (0..100000000)
        UNITS           "kOhms"
        MAX-ACCESS          read-only
        STATUS              current
        DESCRIPTION
                "Insulation resistance"
        ::= { zigorSolarCTR3ObjEstado 5 }

zigorSolarCTR3ObjVRedR OBJECT-TYPE
        SYNTAX              INTEGER (0..10000)
        UNITS           "0.1V"
        MAX-ACCESS          read-only
        STATUS              current
        DESCRIPTION
                "Phase R voltage"
        ::= { zigorSolarCTR3ObjEstado 6 }

zigorSolarCTR3ObjVRedS OBJECT-TYPE
        SYNTAX              INTEGER (0..10000)
        UNITS           "0.1V"
        MAX-ACCESS          read-only
        STATUS              current
        DESCRIPTION
                "Phase S voltage"
        ::= { zigorSolarCTR3ObjEstado 7 }

zigorSolarCTR3ObjVRedT OBJECT-TYPE
        SYNTAX              INTEGER  (0..10000)
        UNITS           "0.1V "
        MAX-ACCESS          read-only
        STATUS              current
        DESCRIPTION
                "Phase T voltage"
        ::= { zigorSolarCTR3ObjEstado 8 }

zigorSolarCTR3ObjIRedR OBJECT-TYPE
        SYNTAX              INTEGER (0..10000)
        UNITS           "0.1A"
        MAX-ACCESS          read-only
        STATUS              current
        DESCRIPTION
                "Phase R AC current"
        ::= { zigorSolarCTR3ObjEstado 9 }

zigorSolarCTR3ObjIRedS OBJECT-TYPE
        SYNTAX              INTEGER (0..10000)
        UNITS           "0.1A"
        MAX-ACCESS          read-only
        STATUS              current
        DESCRIPTION
                "Phase S AC current"
        ::= { zigorSolarCTR3ObjEstado 10 }

zigorSolarCTR3ObjIRedT OBJECT-TYPE
```

```
        SYNTAX          INTEGER (0..10000)
        UNITS           "0.1A"
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "Phase T AC current"
        ::= { zigorSolarCTR3ObjEstado 11 }

zigorSolarCTR3ObjPotR OBJECT-TYPE
        SYNTAX          INTEGER (-10000..10000)
        UNITS           "0.1kW"
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "Phase R active power"
        ::= { zigorSolarCTR3ObjEstado 12 }

zigorSolarCTR3ObjPotS OBJECT-TYPE
        SYNTAX          INTEGER (-10000..10000)
        UNITS           "0.1kW"
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "Phase S active power"
        ::= { zigorSolarCTR3ObjEstado 13 }

zigorSolarCTR3ObjPotT OBJECT-TYPE
        SYNTAX          INTEGER (-10000..10000)
        UNITS           "0.1kW"
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "Phase T active power"
        ::= { zigorSolarCTR3ObjEstado 14 }

zigorSolarCTR3ObjPApR OBJECT-TYPE
        SYNTAX          INTEGER (0..10000)
        UNITS           "0.1kVA"
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "Phase R aparent power"
        ::= { zigorSolarCTR3ObjEstado 15 }

zigorSolarCTR3ObjPApS OBJECT-TYPE
        SYNTAX          INTEGER (0..10000)
        UNITS           "0.1kVA"
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "Phase S aparent power"
        ::= { zigorSolarCTR3ObjEstado 16 }

zigorSolarCTR3ObjPApT OBJECT-TYPE
        SYNTAX          INTEGER (0..10000)
        UNITS           "0.1kVA"
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "Phase T aparent power"
```

```
        ::= { zigorSolarCTR3ObjEstado 17 }

zigorSolarCTR3ObjPReR OBJECT-TYPE
        SYNTAX          INTEGER (-10000..10000)
        UNITS           "0.1kVAr"
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "Phase R reactive power"
        ::= { zigorSolarCTR3ObjEstado 18 }

zigorSolarCTR3ObjPReS OBJECT-TYPE
        SYNTAX          INTEGER (-10000..10000)
        UNITS           "0.1kVAr"
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "Phase S reactive power"
        ::= { zigorSolarCTR3ObjEstado 19 }

zigorSolarCTR3ObjPReT OBJECT-TYPE
        SYNTAX          INTEGER (-10000..10000)
        UNITS           "0.1kVAr"
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "Phase T reactive power"
        ::= { zigorSolarCTR3ObjEstado 20 }

zigorSolarCTR3ObjfPotR OBJECT-TYPE
        SYNTAX          INTEGER (-1000..1000)
        UNITS           "0.001"
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "Phase R power factor"
        ::= { zigorSolarCTR3ObjEstado 21 }

zigorSolarCTR3ObjfPotS OBJECT-TYPE
        SYNTAX          INTEGER (-1000..1000)
        UNITS           "0.001"
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "Phase S power factor"
        ::= { zigorSolarCTR3ObjEstado 22 }

zigorSolarCTR3ObjfPotT OBJECT-TYPE
        SYNTAX          INTEGER (-1000..1000)
        UNITS           "0.001"
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "Phase T power factor"
        ::= { zigorSolarCTR3ObjEstado 23 }

zigorSolarCTR3ObjPot OBJECT-TYPE
        SYNTAX          INTEGER (-10000..10000)
        UNITS           "0.1kW"
        MAX-ACCESS      read-only
```

```
        STATUS          current
        DESCRIPTION
                "Active power"
        ::= { zigorSolarCTR3ObjEstado 24 }

zigorSolarCTR3ObjPAp OBJECT-TYPE
        SYNTAX          INTEGER (0..10000)
        UNITS       "0.1kVA"
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "Aparent power"
        ::= { zigorSolarCTR3ObjEstado 25 }

zigorSolarCTR3ObjPReac OBJECT-TYPE
        SYNTAX          INTEGER (-10000..10000)
        UNITS       "0.1kVAr"
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "Reactive power"
        ::= { zigorSolarCTR3ObjEstado 26 }

zigorSolarCTR3ObjfPot OBJECT-TYPE
        SYNTAX          INTEGER (-1000..1000)
        UNITS       "0.001"
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "Power factor"
        ::= { zigorSolarCTR3ObjEstado 27 }

zigorSolarCTR3ObjEAcDSPE OBJECT-TYPE
        SYNTAX          INTEGER (-1000000000..1000000000)
        UNITS       "1kWh"
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "Energy counter by DSP"
        ::= { zigorSolarCTR3ObjEstado 28 }

zigorSolarCTR3ObjEAcDSPD OBJECT-TYPE
        SYNTAX          INTEGER (-10000..10000)
        UNITS       "0.1kWh"
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "Energy counter (decimal fraction) by DSP"
        ::= { zigorSolarCTR3ObjEstado 29 }

zigorSolarCTR3ObjEAc OBJECT-TYPE
        SYNTAX          INTEGER (-1000000000..1000000000)
        UNITS       "0.1kWh"
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "Active energy counter"
        ::= { zigorSolarCTR3ObjEstado 30 }

zigorSolarCTR3ObjEReacL OBJECT-TYPE
```

```
        SYNTAX          INTEGER (-1000000000..1000000000)
        UNITS       "0.1kVArh"
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "Inductive reactive energy counter"
        ::= { zigorSolarCTR3ObjEstado 31 }

zigorSolarCTR3ObjTArm OBJECT-TYPE
        SYNTAX          INTEGER (-40..250)
        UNITS       "degrees Celsius"
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "Cabinet temperature"
        ::= { zigorSolarCTR3ObjEstado 32 }

zigorSolarCTR3ObjTRec OBJECT-TYPE
        SYNTAX          INTEGER (-40..250)
        UNITS       "degrees Celsius"
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "Inverter heatsink temperature"
        ::= { zigorSolarCTR3ObjEstado 33 }

zigorSolarCTR3ObjTempRec OBJECT-TYPE
        SYNTAX          INTEGER (-40..250)
        UNITS       "degrees Celsius"
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "Tuning inverter heatsink temperature"
        ::= { zigorSolarCTR3ObjEstado 34 }

zigorSolarCTR3ObjTChop OBJECT-TYPE
        SYNTAX          INTEGER (-40..250)
        UNITS       "degrees Celsius"
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "Chopper heatsink temperature"
        ::= { zigorSolarCTR3ObjEstado 35 }

zigorSolarCTR3ObjTempChop OBJECT-TYPE
        SYNTAX          INTEGER (-40..250)
        UNITS       "degrees Celsius"
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "Tuning Chopper heatsink temperature"
        ::= { zigorSolarCTR3ObjEstado 36 }

zigorSolarCTR3ObjTAmb OBJECT-TYPE
        SYNTAX          INTEGER (-40..250)
        UNITS       "degrees Celsius"
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "Room temperature"
```

```
        ::= { zigorSolarCTR3ObjEstado 37 }

zigorSolarCTR3ObjTTrans OBJECT-TYPE
        SYNTAX          INTEGER (-40..250)
        UNITS           "degrees Celsius"
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "Transformer temperature"
        ::= { zigorSolarCTR3ObjEstado 38 }

zigorSolarCTR3ObjPSalMax OBJECT-TYPE
        SYNTAX          INTEGER (0..10000)
        UNITS           "0.1kW"
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "Maximun AC power"
        ::= { zigorSolarCTR3ObjEstado 39 }

zigorSolarCTR3ObjVEMinMPP OBJECT-TYPE
        SYNTAX          INTEGER (0..10000)
        UNITS           "0.1V"
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "Minimun input voltage for MPPT"
        ::= { zigorSolarCTR3ObjEstado 40 }

zigorSolarCTR3ObjIrrad OBJECT-TYPE
        SYNTAX          INTEGER (0..2000)
        UNITS           "W/m^2"
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "Irradiance"
        ::= { zigorSolarCTR3ObjEstado 41 }

zigorSolarCTR3ObjEnerHoy OBJECT-TYPE
        SYNTAX          INTEGER
        UNITS           "0.1kWh"
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "Not implemented"
        ::= { zigorSolarCTR3ObjEstado 42 }

zigorSolarCTR3ObjIrradHoy OBJECT-TYPE
        SYNTAX          INTEGER
        UNITS           "Wh/m^2"
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "Not implemented"
        ::= { zigorSolarCTR3ObjEstado 43 }

zigorSolarCTR3ObjPSalNom OBJECT-TYPE
        SYNTAX          INTEGER (0..10000)
        UNITS           "0.1kW"
        MAX-ACCESS      read-only
```

```
        STATUS          current
        DESCRIPTION
                "Nominal output power"
        ::= { zigorSolarCTR3ObjEstado 44 }

zigorSolarCTR3ObjEstadoConv OBJECT-TYPE
        SYNTAX          EstadoDSP
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "DSP Status"
        ::= { zigorSolarCTR3ObjEstado 45 }

zigorSolarCTR3ObjEstadoSis OBJECT-TYPE
        SYNTAX          EstadoSistema
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "System Status"
        ::= { zigorSolarCTR3ObjEstado 46 }

zigorSolarCTR3ObjMarcha OBJECT-TYPE
        SYNTAX          TruthValue
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "DSP start command"
        ::= { zigorSolarCTR3ObjEstado 47 }

zigorSolarCTR3ObjParo OBJECT-TYPE
        SYNTAX          TruthValue
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "DSP stop command"
        ::= { zigorSolarCTR3ObjEstado 48 }

zigorSolarCTR3ObjRError OBJECT-TYPE
        SYNTAX          TruthValue
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "DSP error reset"
        ::= { zigorSolarCTR3ObjEstado 49 }

zigorSolarCTR3ObjBCont OBJECT-TYPE
        SYNTAX          TruthValue
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "DSP energy counter reset"
        ::= { zigorSolarCTR3ObjEstado 50 }

zigorSolarCTR3ObjFCosPhi OBJECT-TYPE
        SYNTAX          TruthValue
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "DSP CosPhi flag"
        ::= { zigorSolarCTR3ObjEstado 51 }
```

```
zigorSolarCTR3ObjFPPLL OBJECT-TYPE
        SYNTAX          TruthValue
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "DSP PLL pre-alarm flag (not in use)"
        ::= { zigorSolarCTR3ObjEstado 52 }

zigorSolarCTR3ObjFHab OBJECT-TYPE
        SYNTAX          TruthValue
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "DSP enabled flag"
        ::= { zigorSolarCTR3ObjEstado 53 }

zigorSolarCTR3ObjFLPotSal OBJECT-TYPE
        SYNTAX          TruthValue
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "DSP power limit flag"
        ::= { zigorSolarCTR3ObjEstado 54 }

zigorSolarCTR3ObjFParo OBJECT-TYPE
        SYNTAX          TruthValue
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "DSP stop flag"
        ::= { zigorSolarCTR3ObjEstado 55 }

zigorSolarCTR3ObjFPWMOn OBJECT-TYPE
        SYNTAX          TruthValue
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "DSP PWMOn flag"
        ::= { zigorSolarCTR3ObjEstado 56 }

zigorSolarCTR3ObjFVinst OBJECT-TYPE
        SYNTAX          TruthValue
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "DSP VInst alarm flag"
        ::= { zigorSolarCTR3ObjEstado 57 }

zigorSolarCTR3ObjFVRedMax OBJECT-TYPE
        SYNTAX          TruthValue
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "DSP maximum voltage alarm flag"
        ::= { zigorSolarCTR3ObjEstado 58 }

zigorSolarCTR3ObjFVRedMin OBJECT-TYPE
        SYNTAX          TruthValue
        MAX-ACCESS      read-only
```

```
        STATUS          current
        DESCRIPTION
                "DSP minimum voltage alarm flag"
        ::= { zigorSolarCTR3ObjEstado 59 }

zigorSolarCTR3ObjFPLL OBJECT-TYPE
        SYNTAX          TruthValue
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "DSP PLL alarm flag"
        ::= { zigorSolarCTR3ObjEstado 60 }

zigorSolarCTR3ObjFPrecarga OBJECT-TYPE
        SYNTAX          TruthValue
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "DSP preload error flag"
        ::= { zigorSolarCTR3ObjEstado 61 }

zigorSolarCTR3ObjFBus OBJECT-TYPE
        SYNTAX          TruthValue
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "DSP bus voltage error flag (not in use)"
        ::= { zigorSolarCTR3ObjEstado 62 }

zigorSolarCTR3ObjFTermos OBJECT-TYPE
        SYNTAX          TruthValue
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "DSP thermostat error flag"
        ::= { zigorSolarCTR3ObjEstado 63 }

zigorSolarCTR3ObjFDriver OBJECT-TYPE
        SYNTAX          TruthValue
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "DSP driver error flag"
        ::= { zigorSolarCTR3ObjEstado 64 }

zigorSolarCTR3ObjFPwFail OBJECT-TYPE
        SYNTAX          TruthValue
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "DSP powerfail error flag"
        ::= { zigorSolarCTR3ObjEstado 65 }

zigorSolarCTR3ObjContDC OBJECT-TYPE
        SYNTAX          TruthValue
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "DC contactor status"
        ::= { zigorSolarCTR3ObjEstado 66 }
```

```
zigorSolarCTR3ObjContAC OBJECT-TYPE
        SYNTAX          TruthValue
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "Status of AC contactor"
        ::= { zigorSolarCTR3ObjEstado 67 }

zigorSolarCTR3ObjProtDC OBJECT-TYPE
        SYNTAX          TruthValue
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "DC Powertrap"
        ::= { zigorSolarCTR3ObjEstado 68 }

zigorSolarCTR3ObjProtAC OBJECT-TYPE
        SYNTAX          TruthValue
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "AC Powertrap"
        ::= { zigorSolarCTR3ObjEstado 69 }

zigorSolarCTR3ObjPuerta OBJECT-TYPE
        SYNTAX          TruthValue
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "Open Door"
        ::= { zigorSolarCTR3ObjEstado 70 }

zigorSolarCTR3ObjContMedDC OBJECT-TYPE
        SYNTAX          TruthValue
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "DC measure contactor"
        ::= { zigorSolarCTR3ObjEstado 71 }

zigorSolarCTR3ObjIntGeneral OBJECT-TYPE
        SYNTAX          TruthValue
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "Main switch"
        ::= { zigorSolarCTR3ObjEstado 72 }

zigorSolarCTR3ObjAlarmaExt OBJECT-TYPE
        SYNTAX          TruthValue
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "External alarm"
        ::= { zigorSolarCTR3ObjEstado 73 }

zigorSolarCTR3ObjIntOnOff OBJECT-TYPE
        SYNTAX          TruthValue
        MAX-ACCESS      read-only
```

```
        STATUS          current
        DESCRIPTION
                "start-stop switch"
        ::= { zigorSolarCTR3ObjEstado 74 }

zigorSolarCTR3ObjEDig1 OBJECT-TYPE
        SYNTAX          TruthValue
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "Reserved digital input"
        ::= { zigorSolarCTR3ObjEstado 75 }

zigorSolarCTR3ObjContador0 OBJECT-TYPE
        SYNTAX          INTEGER (0..1000000)
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "Counter 0"
        ::= { zigorSolarCTR3ObjEstado 76 }

zigorSolarCTR3ObjContador1 OBJECT-TYPE
        SYNTAX          INTEGER (0..1000000)
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "Counter 1"
        ::= { zigorSolarCTR3ObjEstado 77 }

zigorSolarCTR3ObjVentCaseta OBJECT-TYPE
        SYNTAX          TruthValue
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "Room fan command"
        ::= { zigorSolarCTR3ObjEstado 78 }

zigorSolarCTR3ObjVentArmario OBJECT-TYPE
        SYNTAX          TruthValue
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "Cabinet fan command"
        ::= { zigorSolarCTR3ObjEstado 79 }

zigorSolarCTR3ObjVentTransfo OBJECT-TYPE
        SYNTAX          TruthValue
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "Transformator fan command"
        ::= { zigorSolarCTR3ObjEstado 80 }

zigorSolarCTR3ObjSDig1 OBJECT-TYPE
        SYNTAX          TruthValue
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "Emergency stop relay"
        ::= { zigorSolarCTR3ObjEstado 81 }
```

```
zigorSolarCTR3ObjSDig2 OBJECT-TYPE
        SYNTAX          TruthValue
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "Reserved command 2"
        ::= { zigorSolarCTR3ObjEstado 82 }

zigorSolarCTR3ObjSDig3 OBJECT-TYPE
        SYNTAX          TruthValue
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "System start relay"
        ::= { zigorSolarCTR3ObjEstado 83 }

zigorSolarCTR3ObjSDig4 OBJECT-TYPE
        SYNTAX          TruthValue
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "System fail relay"
        ::= { zigorSolarCTR3ObjEstado 84 }

zigorSolarCTR3ObjSDig5 OBJECT-TYPE
        SYNTAX          TruthValue
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "Reserved command 5"
        ::= { zigorSolarCTR3ObjEstado 85 }

zigorSolarCTR3ObjCComDSP OBJECT-TYPE
        SYNTAX          TruthValue
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "DSP communication error"
        ::= { zigorSolarCTR3ObjEstado 86 }

zigorSolarCTR3ObjCComCInt OBJECT-TYPE
        SYNTAX          TruthValue
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "Measures communication error"
        ::= { zigorSolarCTR3ObjEstado 87 }

zigorSolarCTR3ObjCComICP OBJECT-TYPE
        SYNTAX          TruthValue
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "Irradiance communication error"
        ::= { zigorSolarCTR3ObjEstado 88 }

zigorSolarCTR3ObjESistema OBJECT-TYPE
        SYNTAX          TruthValue
        MAX-ACCESS      read-only
```

```
        STATUS          current
        DESCRIPTION
                "System error"
        ::= { zigorSolarCTR3ObjEstado 89 }

zigorSolarCTR3ObjAjusteEAc OBJECT-TYPE
        SYNTAX          INTEGER (-99999999..99999999)
        UNITS           "0.1kW"
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "Active energy setting"
        ::= { zigorSolarCTR3ObjEstado 90 }

zigorSolarCTR3ObjAjusteEReacL OBJECT-TYPE
        SYNTAX          INTEGER (-99999999..99999999)
        UNITS           "0.1kVArh"
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "Inductive reactive energy setting"
        ::= { zigorSolarCTR3ObjEstado 91 }

zigorSolarCTR3ObjAjusteEReacC OBJECT-TYPE
        SYNTAX          INTEGER (-99999999..99999999)
        UNITS           "0.1kVArh"
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "Capacitive reactive energy setting"
        ::= { zigorSolarCTR3ObjEstado 92 }

zigorSolarCTR3ObjVAis OBJECT-TYPE
        SYNTAX          INTEGER (-10000..10000)
        UNITS           "0.01V"
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "Insulation voltage"
        ::= { zigorSolarCTR3ObjEstado 93 }

zigorSolarCTR3ObjEReacC OBJECT-TYPE
        SYNTAX          INTEGER (-1000000000..1000000000)
        UNITS           "0.1kVArh"
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "Capacitive reactive energy counter"
        ::= { zigorSolarCTR3ObjEstado 94 }

zigorSolarCTR3ObjCosPhi OBJECT-TYPE
        SYNTAX          INTEGER (-10000..10000)
        UNITS           "0.001"
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "Q/Pnominal Factor"
        ::= { zigorSolarCTR3ObjEstado 95 }

zigorSolarCTR3ObjVRedNomV OBJECT-TYPE
```

```
        SYNTAX          INTEGER (0..10000)
        UNITS           "0.1V"
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "Nominal AC voltage"
        ::= { zigorSolarCTR3ObjEstado 96 }

zigorSolarCTR3ObjVRedMin OBJECT-TYPE
        SYNTAX          INTEGER (0..10000)
        UNITS           "0.1V"
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "Minimum AC voltage on Connection"
        ::= { zigorSolarCTR3ObjEstado 97 }

zigorSolarCTR3ObjVRedMax OBJECT-TYPE
        SYNTAX          INTEGER (0..10000)
        UNITS           "0.1V"
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "Maximun AC voltage on Connection"
        ::= { zigorSolarCTR3ObjEstado 98 }

zigorSolarCTR3ObjFrecNomHz OBJECT-TYPE
        SYNTAX          INTEGER (0..10000)
        UNITS           "0.01 Hz"
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "Nominal frequency"
        ::= { zigorSolarCTR3ObjEstado 99 }

zigorSolarCTR3ObjFrecMin OBJECT-TYPE
        SYNTAX          INTEGER (0..10000)
        UNITS           "0.01Hz"
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "Minimum frequency on Connection"
        ::= { zigorSolarCTR3ObjEstado 100 }

zigorSolarCTR3ObjFrecMax OBJECT-TYPE
        SYNTAX          INTEGER (0..10000)
        UNITS           "0.01Hz"
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "Maximum frequency on Connection"
        ::= { zigorSolarCTR3ObjEstado 101 }

zigorSolarCTR3ObjHoraOrto OBJECT-TYPE
        SYNTAX          INTEGER (0..100000)
        UNITS           "seconds"
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "Sunrise time"
```

```
        ::= { zigorSolarCTR3ObjEstado 102 }

zigorSolarCTR3ObjHoraOcaso OBJECT-TYPE
        SYNTAX          INTEGER (0..100000)
        UNITS           "seconds"
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "Sunset time"
        ::= { zigorSolarCTR3ObjEstado 103 }

zigorSolarCTR3ObjOffsetEAc OBJECT-TYPE
        SYNTAX          INTEGER (-99999999..99999999)
        UNITS           "0.1kW"
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "Active energy offset setting"
        ::= { zigorSolarCTR3ObjEstado 104 }

zigorSolarCTR3ObjDerating OBJECT-TYPE
        SYNTAX          INTEGER (0..1150)
        UNITS           "0.001"
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "Derating"
        ::= { zigorSolarCTR3ObjEstado 105 }

zigorSolarCTR3ObjModemStatus OBJECT-TYPE
        SYNTAX          EstadoModem
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "Status of the modem"
        ::= { zigorSolarCTR3ObjEstado 106 }

zigorSolarCTR3ObjStringsImedTotal OBJECT-TYPE
        SYNTAX    Integer32
        UNITS     "0.001A"
        MAX-ACCESS read-only
        STATUS    current
        DESCRIPTION
                "Mean Current of total Strings."
        ::= { zigorSolarCTR3ObjEstado 107 }

zigorSolarCTR3ObjStringsPresent OBJECT-TYPE
        SYNTAX    Integer32
        MAX-ACCESS read-only
        STATUS    current
        DESCRIPTION
                "Number of Strings present (same as the parameter)."
        ::= { zigorSolarCTR3ObjEstado 108 }

zigorSolarCTR3ObjStringsTable OBJECT-TYPE
        SYNTAX    SEQUENCE OF ZigorSolarCTR3ObjStringsEntry
        MAX-ACCESS not-accessible
        STATUS    current
        DESCRIPTION
          "Table of Strings.  The number of entries
```

```
            is given by the value of zigorSolarCTR3ObjStringsPresent."
        ::= { zigorSolarCTR3ObjEstado 109 }

zigorSolarCTR3ObjStringsEntry OBJECT-TYPE
        SYNTAX     ZigorSolarCTR3ObjStringsEntry
        MAX-ACCESS not-accessible
        STATUS     current
        DESCRIPTION
                "An entry containing information applicable to a
            particular String status."
        INDEX { zigorSolarCTR3ObjStringsId }
        ::= { zigorSolarCTR3ObjStringsTable 1 }

ZigorSolarCTR3ObjStringsEntry ::= SEQUENCE {
        zigorSolarCTR3ObjStringsId          PositiveInteger,
        zigorSolarCTR3ObjStringsAinEComTruthValue,
        zigorSolarCTR3ObjStringsDinEComTruthValue,
        zigorSolarCTR3ObjStringsImed       Integer32,
}

zigorSolarCTR3ObjStringsId OBJECT-TYPE
        SYNTAX              PositiveInteger
        MAX-ACCESS          not-accessible
        STATUS              current
        DESCRIPTION
                "A unique identifier for a String status.  This
                value must remain constant."
        ::= { zigorSolarCTR3ObjStringsEntry 1 }

zigorSolarCTR3ObjStringsAinECom OBJECT-TYPE
        SYNTAX              TruthValue
        MAX-ACCESS          read-only
        STATUS              current
        DESCRIPTION
                "Communication error of String analog inputs (current measures)."
        ::= { zigorSolarCTR3ObjStringsEntry 2 }

zigorSolarCTR3ObjStringsDinECom OBJECT-TYPE
        SYNTAX              TruthValue
        MAX-ACCESS          read-only
        STATUS              current
        DESCRIPTION
                "Communication error of String digital inputs (protections)."
        ::= { zigorSolarCTR3ObjStringsEntry 3 }

zigorSolarCTR3ObjStringsImed OBJECT-TYPE
        SYNTAX              Integer32
        UNITS           "0.001A"
        MAX-ACCESS          read-only
        STATUS              current
        DESCRIPTION
                "Mean Current in String."
        ::= { zigorSolarCTR3ObjStringsEntry 4 }

zigorSolarCTR3ObjStringsDinPresent OBJECT-TYPE
        SYNTAX     Integer32
        MAX-ACCESS read-only
        STATUS     current
        DESCRIPTION
                "Number of Strings digital inputs present (same as the parameter)."
```

```
        ::= { zigorSolarCTR3ObjEstado 110 }

zigorSolarCTR3ObjStringsDinTable OBJECT-TYPE
        SYNTAX    SEQUENCE OF ZigorSolarCTR3ObjStringsDinEntry
        MAX-ACCESS not-accessible
        STATUS    current
        DESCRIPTION
          "Table for digital inputs.  The number of entries
          is given by the value of zigorSolarCTR3ObjStringsDinPresent."
        ::= { zigorSolarCTR3ObjEstado 111 }

zigorSolarCTR3ObjStringsDinEntry OBJECT-TYPE
        SYNTAX    ZigorSolarCTR3ObjStringsDinEntry
        MAX-ACCESS not-accessible
        STATUS    current
        DESCRIPTION
                "An entry containing information applicable to a
          particular digital input."
        INDEX { zigorSolarCTR3ObjStringsDinId }
        ::= { zigorSolarCTR3ObjStringsDinTable 1 }

ZigorSolarCTR3ObjStringsDinEntry ::= SEQUENCE {
        zigorSolarCTR3ObjStringsDinId      PositiveInteger,
        zigorSolarCTR3ObjStringsDinValue TruthValue,
}

zigorSolarCTR3ObjStringsDinId OBJECT-TYPE
        SYNTAX              PositiveInteger
        MAX-ACCESS          not-accessible
        STATUS              current
        DESCRIPTION
                "A unique identifier for a digital input.  This
                value must remain constant."
        ::= { zigorSolarCTR3ObjStringsDinEntry 1 }

zigorSolarCTR3ObjStringsDinValue OBJECT-TYPE
        SYNTAX              TruthValue
        MAX-ACCESS          read-only
        STATUS              current
        DESCRIPTION
                "Digital input value (protection)."
        ::= { zigorSolarCTR3ObjStringsDinEntry 2 }

zigorSolarCTR3ObjStringsAinPresent OBJECT-TYPE
        SYNTAX    Integer32
        MAX-ACCESS read-only
        STATUS    current
        DESCRIPTION
                "Number of Strings analog inputs present (same as the parameter)."
        ::= { zigorSolarCTR3ObjEstado 112}

zigorSolarCTR3ObjStringsAinTable OBJECT-TYPE
        SYNTAX    SEQUENCE OF ZigorSolarCTR3ObjStringsAinEntry
        MAX-ACCESS not-accessible
        STATUS    current
        DESCRIPTION
          "Table for analog inputs.  The number of entries
          is given by the value of zigorSolarCTR3ObjStringsAinPresent."
        ::= { zigorSolarCTR3ObjEstado 113 }
```

```
zigorSolarCTR3ObjStringsAinEntry OBJECT-TYPE
        SYNTAX     ZigorSolarCTR3ObjStringsAinEntry
        MAX-ACCESS not-accessible
        STATUS     current
        DESCRIPTION
                "An entry containing information applicable to a
          particular analog input."
        INDEX { zigorSolarCTR3ObjStringsAinId }
        ::= { zigorSolarCTR3ObjStringsAinTable 1 }

ZigorSolarCTR3ObjStringsAinEntry ::= SEQUENCE {
        zigorSolarCTR3ObjStringsAinId       PositiveInteger,
        zigorSolarCTR3ObjStringsAinValue Integer32,
        zigorSolarCTR3ObjStringsAinAlarm TruthValue,
}

zigorSolarCTR3ObjStringsAinId OBJECT-TYPE
        SYNTAX              PositiveInteger
        MAX-ACCESS          not-accessible
        STATUS              current
        DESCRIPTION
                "A unique identifier for an analog input.  This
                value must remain constant."
        ::= { zigorSolarCTR3ObjStringsAinEntry 1 }

zigorSolarCTR3ObjStringsAinValue OBJECT-TYPE
        SYNTAX              Integer32
        UNITS           "0.001A"
        MAX-ACCESS          read-only
        STATUS              current
        DESCRIPTION
                "Analog input value (current)."
        ::= { zigorSolarCTR3ObjStringsAinEntry 2 }

zigorSolarCTR3ObjStringsAinAlarm OBJECT-TYPE
        SYNTAX              TruthValue
        MAX-ACCESS          read-only
        STATUS              current
        DESCRIPTION
                "Alarm condition for an analog input."
        ::= { zigorSolarCTR3ObjStringsAinEntry 3 }

zigorSolarCTR3ObjIfugaDCFV OBJECT-TYPE
        SYNTAX              INTEGER (-100000..100000)
        UNITS           "0.1 mA"
        MAX-ACCESS          read-only
        STATUS              current
        DESCRIPTION
                "DC photovoltaic leakage current (only in TL model)"
        ::= { zigorSolarCTR3ObjEstado 114 }

zigorSolarCTR3ObjIfugaACFV OBJECT-TYPE
        SYNTAX              INTEGER (0..100000)
        UNITS           "0.1 mA"
        MAX-ACCESS          read-only
        STATUS              current
        DESCRIPTION
                "AC photovoltaic leakage current (only in TL model)"
        ::= { zigorSolarCTR3ObjEstado 115 }
```

```
zigorSolarCTR3ObjIfugaAC OBJECT-TYPE
        SYNTAX          INTEGER (0..100000)
        UNITS           "0.1 mA"
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "AC leakage current (only in TL model)"
        ::= { zigorSolarCTR3ObjEstado 116 }

zigorSolarCTR3ObjFfugaDCFV OBJECT-TYPE
        SYNTAX          TruthValue
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "DC photovoltaic leakage alarm flag (only in TL model)"
        ::= { zigorSolarCTR3ObjEstado 117 }

zigorSolarCTR3ObjFfugaDCFVInst OBJECT-TYPE
        SYNTAX          TruthValue
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "DC inst. photovoltaic leakage alarm flag (only in TL model)"
        ::= { zigorSolarCTR3ObjEstado 118 }

zigorSolarCTR3ObjFfugaFV OBJECT-TYPE
        SYNTAX          TruthValue
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "DC-AC photovoltaic leakage alarm flag (only in TL model)"
        ::= { zigorSolarCTR3ObjEstado 119 }

zigorSolarCTR3ObjFfugaAC OBJECT-TYPE
        SYNTAX          TruthValue
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "AC leakage alarm flag (only in TL model)"
        ::= { zigorSolarCTR3ObjEstado 120 }

zigorSolarCTR3ObjFFuga OBJECT-TYPE
        SYNTAX          TruthValue
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "DSP leakage error flag (only in TL model)"
        ::= { zigorSolarCTR3ObjEstado 121 }

zigorSolarCTR3ObjFAlarmaRed OBJECT-TYPE
        SYNTAX          TruthValue
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "DSP grid alarm flag (not in use)"
        ::= { zigorSolarCTR3ObjEstado 122 }

zigorSolarCTR3ObjErrorComFugas OBJECT-TYPE
        SYNTAX          TruthValue
        MAX-ACCESS      read-only
```

```
        STATUS          current
        DESCRIPTION
                "Leakage communication error with leakage mcu (only in TL model)"
        ::= { zigorSolarCTR3ObjEstado 123 }

zigorSolarCTR3ObjAisDisp OBJECT-TYPE
        SYNTAX          TruthValue
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "Insulation availability (only in TL model)"
        ::= { zigorSolarCTR3ObjEstado 124 }

zigorSolarCTR3ObjRAisAux OBJECT-TYPE
        SYNTAX          INTEGER (0..100000000)
        UNITS           "kOhms"
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "Auxiliar insulation resistance (only in TL model)"
        ::= { zigorSolarCTR3ObjEstado 125 }

zigorSolarCTR3ObjDeratingInterno OBJECT-TYPE
        SYNTAX          INTEGER (0..1150)
        UNITS           "0.001"
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "Internal derating"
        ::= { zigorSolarCTR3ObjEstado 126 }

zigorSolarCTR3ObjFPWMChopOn OBJECT-TYPE
        SYNTAX          TruthValue
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "DSP PWMChopOn flag"
        ::= { zigorSolarCTR3ObjEstado 127 }

zigorSolarCTR3ObjFHabHueco OBJECT-TYPE
        SYNTAX          TruthValue
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "DSP Hole Enable flag"
        ::= { zigorSolarCTR3ObjEstado 128 }

zigorSolarCTR3ObjFHueco OBJECT-TYPE
        SYNTAX          TruthValue
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "DSP Hole flag"
        ::= { zigorSolarCTR3ObjEstado 129 }

zigorSolarCTR3ObjFAlarmaDesc OBJECT-TYPE
        SYNTAX          TruthValue
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
```

```
                "DSP Alarm Discharge flag"
        ::= { zigorSolarCTR3ObjEstado 130 }

zigorSolarCTR3ObjFLimitISal OBJECT-TYPE
        SYNTAX          TruthValue
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "DSP Output Current Limit flag"
        ::= { zigorSolarCTR3ObjEstado 131 }

zigorSolarCTR3ObjFReleDC OBJECT-TYPE
        SYNTAX          TruthValue
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "DSP DC Relay flag"
        ::= { zigorSolarCTR3ObjEstado 132 }

zigorSolarCTR3ObjFReleAC OBJECT-TYPE
        SYNTAX          TruthValue
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "DSP AC Relay flag"
        ::= { zigorSolarCTR3ObjEstado 133 }

zigorSolarCTR3ObjVersionDSPAno OBJECT-TYPE
        SYNTAX          Integer32
        UNITS           ""
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "Internal use only"
        ::= { zigorSolarCTR3ObjEstado 134 }

zigorSolarCTR3ObjVersionDSPMesDia OBJECT-TYPE
        SYNTAX          Integer32
        UNITS           ""
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "Internal use only"
        ::= { zigorSolarCTR3ObjEstado 135 }

zigorSolarCTR3ObjVBus OBJECT-TYPE
        SYNTAX          INTEGER
        UNITS           "0.1 V"
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "Bus Voltage"
        ::= { zigorSolarCTR3ObjEstado 136 }

zigorSolarCTR3ObjFDescarga OBJECT-TYPE
        SYNTAX          TruthValue
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "DSP Discharge flag"
```

```
        ::= { zigorSolarCTR3ObjEstado 137 }

zigorSolarCTR3ObjFFrec OBJECT-TYPE
        SYNTAX          TruthValue
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "DSP Frec flag"
        ::= { zigorSolarCTR3ObjEstado 138 }

zigorSolarCTR3ObjPIn OBJECT-TYPE
        SYNTAX          INTEGER (-10000..10000)
        UNITS       "0.1kW"
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "Input power"
        ::= { zigorSolarCTR3ObjEstado 139 }

zigorSolarCTR3ObjNormaRed OBJECT-TYPE
        SYNTAX          DisplayString
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "Current Grid Code"
        ::= { zigorSolarCTR3ObjEstado 140 }

zigorSolarCTR3ObjVRedMinDis OBJECT-TYPE
        SYNTAX          INTEGER (0..10000)
        UNITS       "0.1V"
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "Minimum AC voltage on Disconnection"
        ::= { zigorSolarCTR3ObjEstado 141 }

zigorSolarCTR3ObjVRedMaxDis OBJECT-TYPE
        SYNTAX          INTEGER (0..10000)
        UNITS       "0.1V"
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "Maximun AC voltage on Disconnection"
        ::= { zigorSolarCTR3ObjEstado 142 }

zigorSolarCTR3ObjFrecMinDis OBJECT-TYPE
        SYNTAX          INTEGER (0..10000)
        UNITS       "0.01Hz"
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "Minimum frequency on Disconnection"
        ::= { zigorSolarCTR3ObjEstado 143 }

zigorSolarCTR3ObjFrecMaxDis OBJECT-TYPE
        SYNTAX          INTEGER (0..10000)
        UNITS       "0.01Hz"
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
```

```
                "Maximum frequency on Disconnection"
        ::= { zigorSolarCTR3ObjEstado 144 }

zigorSolarCTR3ObjFRetardo OBJECT-TYPE
        SYNTAX          TruthValue
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "DSP Delay Flag"
        ::= { zigorSolarCTR3ObjEstado 145 }

zigorSolarCTR3ObjDescargar OBJECT-TYPE
        SYNTAX          TruthValue
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "DSP discharge command"
        ::= { zigorSolarCTR3ObjEstado 146 }

--
-- System Parameters
--
zigorSolarCTR3ObjParams         OBJECT IDENTIFIER ::= { zigorSolarCTR3Objects 2 }

zigorSolarCTR3ParamVRedNom OBJECT-TYPE
        SYNTAX          INTEGER
        UNITS       "0.1 V"
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "Nominal grid voltage"
        ::= { zigorSolarCTR3ObjParams 1 }

zigorSolarCTR3ParamICaidaRed OBJECT-TYPE
        SYNTAX          INTEGER
        UNITS       "0.001"
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "Grid drop index on Connection"
        ::= { zigorSolarCTR3ObjParams 2 }

zigorSolarCTR3ParamISubRed OBJECT-TYPE
        SYNTAX          INTEGER
        UNITS       "0.001"
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "Grid rise index on Connection"
        ::= { zigorSolarCTR3ObjParams 3 }

zigorSolarCTR3ParamFrecNom OBJECT-TYPE
        SYNTAX          INTEGER
        UNITS       "0.01 Hz"
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "Nominal frequency"
        ::= { zigorSolarCTR3ObjParams 4 }
```

```
zigorSolarCTR3ParamCaidaFreq OBJECT-TYPE
        SYNTAX          INTEGER
        UNITS           "0.01 Hz"
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "Maximum frequency drop on Connection"
        ::= { zigorSolarCTR3ObjParams 5 }

zigorSolarCTR3ParamUPv OBJECT-TYPE
        SYNTAX          INTEGER (0..10000)
        UNITS           "0.1V"
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "Photovoltaic voltage to start"
        ::= { zigorSolarCTR3ObjParams 6 }

zigorSolarCTR3ParamTArr OBJECT-TYPE
        SYNTAX          INTEGER (0..6000)
        UNITS           "s"
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "Voltage time to start"
        ::= { zigorSolarCTR3ObjParams 7 }

zigorSolarCTR3ParamPAC OBJECT-TYPE
        SYNTAX          INTEGER (0..1000)
        UNITS           "0.1kW"
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "AC power limit to stop"
        ::= { zigorSolarCTR3ObjParams 8 }

zigorSolarCTR3ParamTParada OBJECT-TYPE
        SYNTAX          INTEGER (0..100000)
        UNITS           "s"
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "Time limit to stop"
        ::= { zigorSolarCTR3ObjParams 9 }

zigorSolarCTR3ParamTEspera OBJECT-TYPE
        SYNTAX          INTEGER (0..6000)
        UNITS           "s"
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "Delay time after stop"
        ::= { zigorSolarCTR3ObjParams 10 }

zigorSolarCTR3ParamSubidFreq OBJECT-TYPE
        SYNTAX          INTEGER
        UNITS           "0.01 Hz"
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
```

```
                "Maximum frequency rise on Connection"
        ::= { zigorSolarCTR3ObjParams 11 }

zigorSolarCTR3ParamVPvCorto OBJECT-TYPE
        SYNTAX          INTEGER (-10000..10000)
        UNITS           "0.1V"
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "Shortcircuit photovoltaic voltage"
        ::= { zigorSolarCTR3ObjParams 12 }

zigorSolarCTR3ParamIEntCorto OBJECT-TYPE
        SYNTAX          INTEGER (0..10000)
        UNITS           "0.1A"
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "Shortcircuit input current"
        ::= { zigorSolarCTR3ObjParams 13 }

zigorSolarCTR3ParamTChopMax OBJECT-TYPE
        SYNTAX          INTEGER (-40..250)
        UNITS           "degrees Celsius"
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "Chopper high temperature"
        ::= { zigorSolarCTR3ObjParams 14 }

zigorSolarCTR3ParamTRecMax OBJECT-TYPE
        SYNTAX          INTEGER (-40..250)
        UNITS           "degrees Celsius"
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "Inverter high temperature"
        ::= { zigorSolarCTR3ObjParams 15 }

zigorSolarCTR3ParamTArmAlta OBJECT-TYPE
        SYNTAX          INTEGER (-40..250)
        UNITS           "degrees Celsius"
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "Cabinet high temperature"
        ::= { zigorSolarCTR3ObjParams 16 }

zigorSolarCTR3ParamTTrafoAlta OBJECT-TYPE
        SYNTAX          INTEGER (-40..250)
        UNITS           "degrees Celsius"
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "Transformator high temperature (not available)"
        ::= { zigorSolarCTR3ObjParams 17 }

zigorSolarCTR3ParamVPvMax OBJECT-TYPE
        SYNTAX          INTEGER (-10000..11000)
        UNITS           "0.1V"
```

```
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "High photovoltaic voltage"
        ::= { zigorSolarCTR3ObjParams 18 }

zigorSolarCTR3ParamVPvInv OBJECT-TYPE
        SYNTAX          INTEGER (-10000..10000)
        UNITS       "0.1V"
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "Voltage to detect reverse polarity"
        ::= { zigorSolarCTR3ObjParams 19 }

zigorSolarCTR3ParamIrradMin OBJECT-TYPE
        SYNTAX          INTEGER (0..1000)
        UNITS       "W/m^2"
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "Minimum irradiance to start"
        ::= { zigorSolarCTR3ObjParams 20 }

zigorSolarCTR3ParamCondStart OBJECT-TYPE
        SYNTAX          CondicionArranque
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "Start condition"
        ::= { zigorSolarCTR3ObjParams 21 }

zigorSolarCTR3ParamRAis1 OBJECT-TYPE
        SYNTAX          INTEGER (0..1000000)
        UNITS       "kOhms"
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "Insulation resistance minor level"
        ::= { zigorSolarCTR3ObjParams 22 }

zigorSolarCTR3ParamRAis2 OBJECT-TYPE
        SYNTAX          INTEGER (0..1000000)
        UNITS       "kOhms"
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "Insulation resistance serious level"
        ::= { zigorSolarCTR3ObjParams 23 }

zigorSolarCTR3ParamTactVenCas OBJECT-TYPE
        SYNTAX          INTEGER (-40..250)
        UNITS       "degrees Celsius"
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "Room fan activation temperature"
        ::= { zigorSolarCTR3ObjParams 24 }

zigorSolarCTR3ParamThysVenCas OBJECT-TYPE
```

```
        SYNTAX          INTEGER (-40..250)
        UNITS           "degrees Celsius"
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "Room fan hysteresis temperature"
        ::= { zigorSolarCTR3ObjParams 25 }

zigorSolarCTR3ParamTminVenCas OBJECT-TYPE
        SYNTAX          INTEGER
        UNITS           "min"
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "Room fan minimum activation time"
        ::= { zigorSolarCTR3ObjParams 26 }

zigorSolarCTR3ParamTmaxVenCas OBJECT-TYPE
        SYNTAX          INTEGER
        UNITS           "min"
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "Room fan maximum deactivation time"
        ::= { zigorSolarCTR3ObjParams 27 }

zigorSolarCTR3ParamTactVenArm OBJECT-TYPE
        SYNTAX          INTEGER
        UNITS           "degrees Celsius"
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "Cabinet fan activation temperature"
        ::= { zigorSolarCTR3ObjParams 28 }

zigorSolarCTR3ParamThysVenArm OBJECT-TYPE
        SYNTAX          INTEGER
        UNITS           "degrees Celsius"
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "Cabinet fan hysteresis temperature"
        ::= { zigorSolarCTR3ObjParams 29 }

zigorSolarCTR3ParamTminVenArm OBJECT-TYPE
        SYNTAX          INTEGER
        UNITS           "min"
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "Cabinet fan minimum activation time"
        ::= { zigorSolarCTR3ObjParams 30 }

zigorSolarCTR3ParamTmaxVenArm OBJECT-TYPE
        SYNTAX          INTEGER
        UNITS           "min"
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "Cabinet fan maximum deactivation time"
```

```
        ::= { zigorSolarCTR3ObjParams 31 }

zigorSolarCTR3ParamTactVenTrf OBJECT-TYPE
        SYNTAX          INTEGER
        UNITS           "degrees Celsius"
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "Transformator fan activation temperature"
        ::= { zigorSolarCTR3ObjParams 32 }

zigorSolarCTR3ParamThysVenTrf OBJECT-TYPE
        SYNTAX          INTEGER
        UNITS           "degrees Celsius"
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "Transformator fan hysteresis temperature"
        ::= { zigorSolarCTR3ObjParams 33 }

zigorSolarCTR3ParamTminVenTrf OBJECT-TYPE
        SYNTAX          INTEGER
        UNITS           "min"
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "Transformator fan minimum activation time"
        ::= { zigorSolarCTR3ObjParams 34 }

zigorSolarCTR3ParamTmaxVenTrf OBJECT-TYPE
        SYNTAX          INTEGER
        UNITS           "min"
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "Transformator fan maximum deactivation time"
        ::= { zigorSolarCTR3ObjParams 35 }

zigorSolarCTR3ParamOffIrrad OBJECT-TYPE
        SYNTAX          INTEGER (-2000..2000)
        UNITS           "W/m^2"
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "Irradiance calibration offset"
        ::= { zigorSolarCTR3ObjParams 36 }

zigorSolarCTR3ParamGanIrrad OBJECT-TYPE
        SYNTAX          INTEGER (0..1000000)
        UNITS           "W/m^2/v"
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "Irradiance calibration gain"
        ::= { zigorSolarCTR3ObjParams 37 }

zigorSolarCTR3ParamCorrRadRec OBJECT-TYPE
        SYNTAX          INTEGER (-2000..2000)
        UNITS           "0.001"
        MAX-ACCESS      read-write
```

```
        STATUS          current
        DESCRIPTION
                "Inverter heatsink temperature offset"
        ::= { zigorSolarCTR3ObjParams 38 }

zigorSolarCTR3ParamCorrRadChop OBJECT-TYPE
        SYNTAX          INTEGER (-2000..2000)
        UNITS           "0.001"
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "Chopper heatsink temperature offset"
        ::= { zigorSolarCTR3ObjParams 39 }

zigorSolarCTR3ParamZonaReac OBJECT-TYPE
        SYNTAX          ZonaHorariaReactiva
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "Time zone for reactive energy management (Not Used)"
        ::= { zigorSolarCTR3ObjParams 40 }

zigorSolarCTR3ParamFPotPunta OBJECT-TYPE
        SYNTAX          INTEGER (-1000..1000)
        UNITS           "0.001"
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "'Punta' hours objective power factor"
        ::= { zigorSolarCTR3ObjParams 41 }

zigorSolarCTR3ParamFPotLlano OBJECT-TYPE
        SYNTAX          INTEGER (-1000..1000)
        UNITS           "0.001"
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "'LLano' hours objective power factor"
        ::= { zigorSolarCTR3ObjParams 42 }

zigorSolarCTR3ParamFPotValle OBJECT-TYPE
        SYNTAX          INTEGER (-1000..1000)
        UNITS           "0.001"
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "'Valle' hours objective power factor"
        ::= { zigorSolarCTR3ObjParams 43 }

zigorSolarCTR3ParamCoordLong OBJECT-TYPE
        SYNTAX          INTEGER (-10000000..10000000)
        UNITS           "seconds"
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "Longitude coordinate"
        ::= { zigorSolarCTR3ObjParams 44 }

zigorSolarCTR3ParamCoordLat OBJECT-TYPE
        SYNTAX          INTEGER (-10000000..10000000)
```

```
        UNITS           "seconds"
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "Latitude coordinate"
        ::= { zigorSolarCTR3ObjParams 45 }

zigorSolarCTR3ParamTimeZone OBJECT-TYPE
        SYNTAX          INTEGER
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "Reserved"   -- XXX
        ::= { zigorSolarCTR3ObjParams 46 }

zigorSolarCTR3ParamDeratingKp OBJECT-TYPE
        SYNTAX          INTEGER (0..1000000)
        UNITS           "0.001"
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "Derating Kp"
        ::= { zigorSolarCTR3ObjParams 47 }

zigorSolarCTR3ParamDeratingTi OBJECT-TYPE
        SYNTAX          INTEGER (1..1000)
        UNITS           "seconds"
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "Derating Ti"
        ::= { zigorSolarCTR3ObjParams 48 }

zigorSolarCTR3ParamDeratingMax OBJECT-TYPE
        SYNTAX          INTEGER (0..1150)
        UNITS           "0.001"
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "Derating Maximun Output"
        ::= { zigorSolarCTR3ObjParams 49 }

zigorSolarCTR3ParamDeratingTref OBJECT-TYPE
        SYNTAX          INTEGER (-40..250)
        UNITS           "degrees Celsius"
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "Derating Tref"
        ::= { zigorSolarCTR3ObjParams 50 }

zigorSolarCTR3ParamOffsetRAis OBJECT-TYPE
        SYNTAX          INTEGER (0..10000)
        UNITS           "kOhms"
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "Insulation resistance offset when DC contactor opened"
        ::= { zigorSolarCTR3ObjParams 51 }
```

```
zigorSolarCTR3ParamStringsIout OBJECT-TYPE
        SYNTAX     Integer32
        MAX-ACCESS read-write
        STATUS     current
        DESCRIPTION
                "Strings Mean current offset for an alarm."
        ::= { zigorSolarCTR3ObjParams 52 }

zigorSolarCTR3ParamStringsImin OBJECT-TYPE
        SYNTAX     Integer32
        MAX-ACCESS read-write
        STATUS     current
        DESCRIPTION
                "Strings Minimun mean current for alarm evaluation."
        ::= { zigorSolarCTR3ObjParams 53 }

zigorSolarCTR3ParamStringsTact OBJECT-TYPE
        SYNTAX     Integer32
        MAX-ACCESS read-write
        STATUS     current
        DESCRIPTION
                "Strings Filter time for alarm activation."
        ::= { zigorSolarCTR3ObjParams 54 }

zigorSolarCTR3ParamStringsTdes OBJECT-TYPE
        SYNTAX     Integer32
        MAX-ACCESS read-write
        STATUS     current
        DESCRIPTION
                "Strings Filter time for alarm desactivation."
        ::= { zigorSolarCTR3ObjParams 55 }

zigorSolarCTR3ParamStringsPresent OBJECT-TYPE
        SYNTAX     Integer32
        MAX-ACCESS read-write
        STATUS     current
        DESCRIPTION
                "Number of Strings present."
        ::= { zigorSolarCTR3ObjParams 56 }

zigorSolarCTR3ParamStringsTable OBJECT-TYPE
        SYNTAX     SEQUENCE OF ZigorSolarCTR3ParamStringsEntry
        MAX-ACCESS not-accessible
        STATUS     current
        DESCRIPTION
          "Table of general Strings parameters. The number of entries
          is given by the value of zigorSolarCTR3ParamStringsPresent."
        ::= { zigorSolarCTR3ObjParams 57 }

zigorSolarCTR3ParamStringsEntry OBJECT-TYPE
        SYNTAX     ZigorSolarCTR3ParamStringsEntry
        MAX-ACCESS not-accessible
        STATUS     current
        DESCRIPTION
                "An entry containing information applicable to a
          particular String parameters."
        INDEX { zigorSolarCTR3ParamStringsId }
        ::= { zigorSolarCTR3ParamStringsTable 1 }

ZigorSolarCTR3ParamStringsEntry ::= SEQUENCE {
```

```
        zigorSolarCTR3ParamStringsId      PositiveInteger,
        zigorSolarCTR3ParamStringsGan     Integer32,
        zigorSolarCTR3ParamStringsHab     TruthValue,
}

zigorSolarCTR3ParamStringsId OBJECT-TYPE
        SYNTAX          PositiveInteger
        MAX-ACCESS      not-accessible
        STATUS          current
        DESCRIPTION
                "A unique identifier for a String parameter entry. This
                value must remain constant."
        ::= { zigorSolarCTR3ParamStringsEntry 1 }

zigorSolarCTR3ParamStringsGan OBJECT-TYPE
        SYNTAX          Integer32
        UNITS         "0.001"
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "Strings gain for analog inputs (current)."
        ::= { zigorSolarCTR3ParamStringsEntry 2 }

zigorSolarCTR3ParamStringsHab OBJECT-TYPE
        SYNTAX          TruthValue
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "Strings habilitation."
        ::= { zigorSolarCTR3ParamStringsEntry 3 }

zigorSolarCTR3ParamStringsDinPresent OBJECT-TYPE
        SYNTAX    Integer32
        MAX-ACCESS read-write
        STATUS    current
        DESCRIPTION
                "Number of Strings digital inputs present (protections)."
        ::= { zigorSolarCTR3ObjParams 58 }

zigorSolarCTR3ParamStringsDinTable OBJECT-TYPE
        SYNTAX    SEQUENCE OF ZigorSolarCTR3ParamStringsDinEntry
        MAX-ACCESS not-accessible
        STATUS    current
        DESCRIPTION
          "Table of Strings parameters for digital inputs. The number of entries
          is given by the value of zigorSolarCTR3ParamStringsDinPresent."
        ::= { zigorSolarCTR3ObjParams 59 }

zigorSolarCTR3ParamStringsDinEntry OBJECT-TYPE
        SYNTAX    ZigorSolarCTR3ObjStringsDinEntry
        MAX-ACCESS not-accessible
        STATUS    current
        DESCRIPTION
                "An entry containing information applicable to a
          particular String digital input."
        INDEX { zigorSolarCTR3ParamStringsDinId }
        ::= { zigorSolarCTR3ParamStringsDinTable 1 }

ZigorSolarCTR3ParamStringsDinEntry ::= SEQUENCE {
        zigorSolarCTR3ParamStringsDinId  PositiveInteger,
```

```
        zigorSolarCTR3ParamStringsDinHab        TruthValue,
}

zigorSolarCTR3ParamStringsDinId OBJECT-TYPE
        SYNTAX              PositiveInteger
        MAX-ACCESS          not-accessible
        STATUS              current
        DESCRIPTION
                "A unique identifier for a String digital input. This
                value must remain constant."
        ::= { zigorSolarCTR3ParamStringsDinEntry 1 }

zigorSolarCTR3ParamStringsDinHab OBJECT-TYPE
        SYNTAX              TruthValue
        MAX-ACCESS          read-write
        STATUS              current
        DESCRIPTION
                "String digital input habilitation"
        ::= { zigorSolarCTR3ParamStringsDinEntry 2 }

zigorSolarCTR3ParamStringsAinPresent OBJECT-TYPE
        SYNTAX     Integer32
        MAX-ACCESS read-write
        STATUS     current
        DESCRIPTION
                "Number of Strings analog inputs present (currents)."
        ::= { zigorSolarCTR3ObjParams 60 }

zigorSolarCTR3ParamStringsAinTable OBJECT-TYPE
        SYNTAX     SEQUENCE OF ZigorSolarCTR3ParamStringsAinEntry
        MAX-ACCESS not-accessible
        STATUS     current
        DESCRIPTION
          "Table of Strings parameters for analog inputs.  The number of entries
          is given by the value of zigorSolarCTR3ParamStringsAinPresent."
        ::= { zigorSolarCTR3ObjParams 61 }

zigorSolarCTR3ParamStringsAinEntry OBJECT-TYPE
        SYNTAX     ZigorSolarCTR3ObjStringsAinEntry
        MAX-ACCESS not-accessible
        STATUS     current
        DESCRIPTION
                "An entry containing information applicable to a
          particular String analog input."
        INDEX { zigorSolarCTR3ParamStringsAinId }
        ::= { zigorSolarCTR3ParamStringsAinTable 1 }

ZigorSolarCTR3ParamStringsAinEntry ::= SEQUENCE {
        zigorSolarCTR3ParamStringsAinId  PositiveInteger,
        zigorSolarCTR3ParamStringsAinHab        TruthValue,
}

zigorSolarCTR3ParamStringsAinId OBJECT-TYPE
        SYNTAX              PositiveInteger
        MAX-ACCESS          not-accessible
        STATUS              current
        DESCRIPTION
                "A unique identifier for a String analog input.  This
                value must remain constant."
        ::= { zigorSolarCTR3ParamStringsAinEntry 1 }
```

```
zigorSolarCTR3ParamStringsAinHab OBJECT-TYPE
        SYNTAX          TruthValue
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "String analog input habilitation"
        ::= { zigorSolarCTR3ParamStringsAinEntry 2 }

zigorSolarCTR3ParamIfugaDCFVInc40 OBJECT-TYPE
        SYNTAX          INTEGER (0..7000)
        UNITS           "0.1 mA"
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "Minimum increase photovoltaic DC leakage 40ms (only in TL model)"
        ::= { zigorSolarCTR3ObjParams 62 }

zigorSolarCTR3ParamIfugaDCFVInc300 OBJECT-TYPE
        SYNTAX          INTEGER (0..7000)
        UNITS           "0.1 mA"
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "Minimum increase photovoltaic DC leakage 300ms (only in TL model)"
        ::= { zigorSolarCTR3ObjParams 63 }

zigorSolarCTR3ParamIfugaFVMax OBJECT-TYPE
        SYNTAX          INTEGER (0..12000)
        UNITS           "0.1 mA"
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "High DC/AC photovoltaic leakage current (only in TL model)"
        ::= { zigorSolarCTR3ObjParams 64 }

zigorSolarCTR3ParamIfugaFVInstMax OBJECT-TYPE
        SYNTAX          INTEGER (0..100000)
        UNITS           "0.1 mA"
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "High instant photovoltaic leakage current (only in TL model)"
        ::= { zigorSolarCTR3ObjParams 65 }

zigorSolarCTR3ParamIfugaACMax OBJECT-TYPE
        SYNTAX          INTEGER (0..100000)
        UNITS           "0.1 mA"
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "High AC leakage current (only in TL model)"
        ::= { zigorSolarCTR3ObjParams 66 }

zigorSolarCTR3ParamIfugaACFiltro OBJECT-TYPE
        SYNTAX          INTEGER (0..10000)
        UNITS           "0.001 seconds"
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
```

```
                "Delay for high AC leakage current (only in TL model)"
        ::= { zigorSolarCTR3ObjParams 67 }

zigorSolarCTR3ParamNormaRed OBJECT-TYPE
        SYNTAX          INTEGER (1..100)
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "Power grid regulation"
        ::= { zigorSolarCTR3ObjParams 68 }
------
zigorSolarCTR3ParamAmpIReactPNom OBJECT-TYPE
        SYNTAX          INTEGER (0..150)
        UNITS           "0.1 A"
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "Reactive Current Amplitude for Nominal Power"
        ::= { zigorSolarCTR3ObjParams 69 }
zigorSolarCTR3ParamAmpIReacMin OBJECT-TYPE
        SYNTAX          INTEGER (0..100)
        UNITS           "0.1 A"
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "Minimum Reactive Current Amplitude"
        ::= { zigorSolarCTR3ObjParams 70 }
zigorSolarCTR3ParamVRed60Max OBJECT-TYPE
        SYNTAX          INTEGER (0..200)
        UNITS           "0.1 V"
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "Maximum 60Hz Mains Voltage"
        ::= { zigorSolarCTR3ObjParams 71 }
zigorSolarCTR3ParamTiempoMaxHueco OBJECT-TYPE
        SYNTAX          INTEGER (1..2000)
        UNITS           "ms"
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "Dip Maximum Time"
        ::= { zigorSolarCTR3ObjParams 72 }
zigorSolarCTR3ParamVRedSalidaHueco OBJECT-TYPE
        SYNTAX          INTEGER (0..1000)
        UNITS           "0.001"
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "Dip Out Mains Voltage Factor"
        ::= { zigorSolarCTR3ObjParams 73 }
zigorSolarCTR3ParamIReacHueco OBJECT-TYPE
        SYNTAX          INTEGER (0..1000)
        UNITS           "0.001"
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "Dip Reactive Current Factor"
        ::= { zigorSolarCTR3ObjParams 74 }
zigorSolarCTR3ParamVRedMediaMax OBJECT-TYPE
```

```
        SYNTAX          INTEGER (0..200)
        UNITS           "0.001"
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "Maximum Average Mains Voltage Factor"
        ::= { zigorSolarCTR3ObjParams 75 }
zigorSolarCTR3ParamTiempoMediaVRed OBJECT-TYPE
        SYNTAX          INTEGER (0..600)
        UNITS           "s"
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "Average Mains Voltage Time"
        ::= { zigorSolarCTR3ObjParams 76 }
zigorSolarCTR3ParamTimeoutVueltaRed OBJECT-TYPE
        SYNTAX          INTEGER (0..600)
        UNITS           "s"
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "Mains Back Timeout"
        ::= { zigorSolarCTR3ObjParams 77 }
zigorSolarCTR3ParamVinMinimaMPPT OBJECT-TYPE
        SYNTAX          INTEGER (2000..7000)
        UNITS           "0.1 V"
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "MPPT Minimum Input Voltage"
        ::= { zigorSolarCTR3ObjParams 78 }
zigorSolarCTR3ParamVBusMaxima OBJECT-TYPE
        SYNTAX          INTEGER (8200..9000)
        UNITS           "0.1 V"
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "Maximum Bus Voltage"
        ::= { zigorSolarCTR3ObjParams 79 }
zigorSolarCTR3VParamBusDescarga OBJECT-TYPE
        SYNTAX          INTEGER (600..10000)
        UNITS           "0.1 V"
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "Discharge Bus Voltage"
        ::= { zigorSolarCTR3ObjParams 80 }
zigorSolarCTR3ParamPotSalNom OBJECT-TYPE
        SYNTAX          INTEGER
        UNITS           "0.1 kW"
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "Nominal Power"
        ::= { zigorSolarCTR3ObjParams 81 }
zigorSolarCTR3ParamPotSalMax OBJECT-TYPE
        SYNTAX          INTEGER (0..1700)
        UNITS           "0.1 kW"
        MAX-ACCESS      read-write
        STATUS          current
```

```
        DESCRIPTION
                "Maximum Power"
        ::= { zigorSolarCTR3ObjParams 82 }
zigorSolarCTR3ParamIMax OBJECT-TYPE
        SYNTAX          INTEGER (0..2500)
        UNITS           "0.1 A"
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "Maximum Current"
        ::= { zigorSolarCTR3ObjParams 83 }

zigorSolarCTR3ParamArch OBJECT-TYPE
        SYNTAX          Architecture
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "System Architecture"
        ::= { zigorSolarCTR3ObjParams 84 }

zigorSolarCTR3ParamICaidaRedDis OBJECT-TYPE
        SYNTAX          INTEGER
        UNITS           "0.001"
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "Grid drop index on Disconnection"
        ::= { zigorSolarCTR3ObjParams 90 }

zigorSolarCTR3ParamISubRedDis OBJECT-TYPE
        SYNTAX          INTEGER
        UNITS           "0.001"
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "Grid rise index on Disconnection"
        ::= { zigorSolarCTR3ObjParams 91 }

zigorSolarCTR3ParamCaidaFreqDis OBJECT-TYPE
        SYNTAX          INTEGER
        UNITS           "0.01 Hz"
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "Maximum frequency drop on Disconnection"
        ::= { zigorSolarCTR3ObjParams 92 }

zigorSolarCTR3ParamSubidFreqDis OBJECT-TYPE
        SYNTAX          INTEGER
        UNITS           "0.01 Hz"
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "Maximum frequency rise on Disconnection"
        ::= { zigorSolarCTR3ObjParams 93 }

zigorSolarCTR3ParamCosPhi OBJECT-TYPE
        SYNTAX          INTEGER (-1000..1000)
        UNITS           "0.001"
        MAX-ACCESS      read-write
```

```
        STATUS          current
        DESCRIPTION
                "Cos Phi (0 disable Q control. See parameter QFactor)"
        ::= { zigorSolarCTR3ObjParams 94 }

zigorSolarCTR3ParamQFactor OBJECT-TYPE
        SYNTAX          INTEGER (-1000..1000)
        UNITS           "0.001 kVAr/kW"
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "Q Factor (Q/Pnominal. Enable if parameter CosPhi==0)"
        ::= { zigorSolarCTR3ObjParams 95 }

--
-- Alarms
--
zigorSolarCTR3Alarms            OBJECT IDENTIFIER ::= { zigorSolarCTR3MIB 2 }

zigorAlarmaFalloAis1 OBJECT-IDENTITY
        STATUS          current
        DESCRIPTION
                "Minor Insulation Failure"
        ::= { zigorSolarCTR3Alarms 1 }

zigorAlarmaFalloAis2 OBJECT-IDENTITY
        STATUS          current
        DESCRIPTION
                "Serious Insulation Failure"
        ::= { zigorSolarCTR3Alarms 2 }

zigorAlarmaSupVAC OBJECT-IDENTITY
        STATUS          current
        DESCRIPTION
                "AC Overvoltage"
        ::= { zigorSolarCTR3Alarms 3 }

zigorAlarmaSubVAC OBJECT-IDENTITY
        STATUS          current
        DESCRIPTION
                "AC Undervoltage"
        ::= { zigorSolarCTR3Alarms 4 }


zigorAlarmaErrorPLL OBJECT-IDENTITY
        STATUS          current
        DESCRIPTION
                "Grid Frequency Error"
        ::= { zigorSolarCTR3Alarms 5 }

zigorAlarmaPEmergencia OBJECT-IDENTITY
        STATUS          current
        DESCRIPTION
                "Emergency Stop"
        ::= { zigorSolarCTR3Alarms 6 }

zigorAlarmaCortoDC OBJECT-IDENTITY
        STATUS          current
        DESCRIPTION
                "DC ShortCircuit"
```

```
        ::= { zigorSolarCTR3Alarms 7 }

zigorAlarmaSupTChopper OBJECT-IDENTITY
        STATUS          current
        DESCRIPTION
                "Chopper High Temperature"
        ::= { zigorSolarCTR3Alarms 8 }

zigorAlarmaSupTRec OBJECT-IDENTITY
        STATUS          current
        DESCRIPTION
                "Inverter High Temperature"
        ::= { zigorSolarCTR3Alarms 9 }

zigorAlarmaTermo OBJECT-IDENTITY
        STATUS          current
        DESCRIPTION
                "Thermostat Trigger"
        ::= { zigorSolarCTR3Alarms 10 }

zigorAlarmaSupTArm OBJECT-IDENTITY
        STATUS          current
        DESCRIPTION
                "Cabinet High Temperature"
        ::= { zigorSolarCTR3Alarms 11 }

zigorAlarmaSupTTrafo OBJECT-IDENTITY
        STATUS          current
        DESCRIPTION
                "Transformator High Temperature"
        ::= { zigorSolarCTR3Alarms 12 }

zigorAlarmaFalloFan OBJECT-IDENTITY
        STATUS          current
        DESCRIPTION
                "Fan Failure (not available)"
        ::= { zigorSolarCTR3Alarms 13 }

zigorAlarmaErrorContDC OBJECT-IDENTITY
        STATUS          current
        DESCRIPTION
                "DC Contactor Failure"
        ::= { zigorSolarCTR3Alarms 14 }

zigorAlarmaPuerta OBJECT-IDENTITY
        STATUS          current
        DESCRIPTION
                "Open Door"
        ::= { zigorSolarCTR3Alarms 15 }

zigorAlarmaFalloDrv OBJECT-IDENTITY
        STATUS          current
        DESCRIPTION
                "Driver Failure"
        ::= { zigorSolarCTR3Alarms 16 }

zigorAlarmaErrorComDSP OBJECT-IDENTITY
        STATUS          current
        DESCRIPTION
                "DSP Communication Error"
```

```
        ::= { zigorSolarCTR3Alarms 17 }

zigorAlarmaErrorComCInt OBJECT-IDENTITY
        STATUS          current
        DESCRIPTION
                "Measures Communication Error"
        ::= { zigorSolarCTR3Alarms 18 }

zigorAlarmaSupVDC OBJECT-IDENTITY
        STATUS          current
        DESCRIPTION
                "DC Overvoltage"
        ::= { zigorSolarCTR3Alarms 19 }

zigorAlarmaInvDC OBJECT-IDENTITY
        STATUS          current
        DESCRIPTION
                "Reverse DC Polarity"
        ::= { zigorSolarCTR3Alarms 20 }

zigorAlarmaFalloPre OBJECT-IDENTITY
        STATUS          current
        DESCRIPTION
                "Preload Failure"
        ::= { zigorSolarCTR3Alarms 21 }

zigorAlarmaEnIsla OBJECT-IDENTITY
        STATUS          current
        DESCRIPTION
                "Islanding"
        ::= { zigorSolarCTR3Alarms 22 }

zigorAlarmaErrorVBusInv OBJECT-IDENTITY
        STATUS          current
        DESCRIPTION
                "Inverter Bus Voltage Error"
        ::= { zigorSolarCTR3Alarms 23 }

zigorAlarmaErrorAlimInv OBJECT-IDENTITY
        STATUS          current
        DESCRIPTION
                "Inverter Power Supply Error"
        ::= { zigorSolarCTR3Alarms 24 }

zigorAlarmaErrorContMedDC OBJECT-IDENTITY
        STATUS          current
        DESCRIPTION
                "DC Measure Contactor Error"
        ::= { zigorSolarCTR3Alarms 25 }

zigorAlarmaIntGeneralDesc OBJECT-IDENTITY
        STATUS          current
        DESCRIPTION
                "Main Switch Disconnected"
        ::= { zigorSolarCTR3Alarms 26 }

zigorAlarmaProtSobTDCNoOp OBJECT-IDENTITY
        STATUS          current
        DESCRIPTION
                "DC Overvoltage Protection"
```

```
        ::= { zigorSolarCTR3Alarms 27 }

zigorAlarmaProtSobTACNoOp OBJECT-IDENTITY
        STATUS          current
        DESCRIPTION
                "AC Overvoltage Protection"
        ::= { zigorSolarCTR3Alarms 28 }

zigorAlarmaExt OBJECT-IDENTITY
        STATUS          current
        DESCRIPTION
                "External Alarm"
        ::= { zigorSolarCTR3Alarms 29 }

zigorAlarmaErrorCComICP OBJECT-IDENTITY
        STATUS          current
        DESCRIPTION
                "Irradiance Communication Error"
        ::= { zigorSolarCTR3Alarms 30 }

zigorAlarmaErrorPersisInv OBJECT-IDENTITY
        STATUS          current
        DESCRIPTION
                "Inverter Persistent Error"
        ::= { zigorSolarCTR3Alarms 31 }

zigorAlarmaErrorDescBusInv OBJECT-IDENTITY
        STATUS          current
        DESCRIPTION
                "Inverter Bus Discharge Error"
        ::= { zigorSolarCTR3Alarms 32 }

zigorAlarmaStringsAinECom OBJECT-IDENTITY
        STATUS          current
        DESCRIPTION
                "Strings Current Measures Comm. Error"
        ::= { zigorSolarCTR3Alarms 33 }

zigorAlarmaStringsDinECom OBJECT-IDENTITY
        STATUS          current
        DESCRIPTION
                "Strings Protections Comm. Error"
        ::= { zigorSolarCTR3Alarms 34 }

zigorAlarmaStringsInt OBJECT-IDENTITY
        STATUS          current
        DESCRIPTION
                "Strings Overload Circuit Breaker"
        ::= { zigorSolarCTR3Alarms 35 }

zigorAlarmaStringsSupVDC OBJECT-IDENTITY
        STATUS          current
        DESCRIPTION
                "Strings Overvoltage Protection"
        ::= { zigorSolarCTR3Alarms 36 }

zigorAlarmaStringsIout1 OBJECT-IDENTITY
        STATUS          current
        DESCRIPTION
                "String 1 Current under limit"
```

```
        ::= { zigorSolarCTR3Alarms 37 }

zigorAlarmaStringsIout2 OBJECT-IDENTITY
        STATUS          current
        DESCRIPTION
                "String 2 Current under limit"
        ::= { zigorSolarCTR3Alarms 38 }

zigorAlarmaStringsIout3 OBJECT-IDENTITY
        STATUS          current
        DESCRIPTION
                "String 3 Current under limit"
        ::= { zigorSolarCTR3Alarms 39 }

zigorAlarmaStringsIout4 OBJECT-IDENTITY
        STATUS          current
        DESCRIPTION
                "String 4 Current under limit"
        ::= { zigorSolarCTR3Alarms 40 }

zigorAlarmaStringsIout5 OBJECT-IDENTITY
        STATUS          current
        DESCRIPTION
                "String 5 Current under limit"
        ::= { zigorSolarCTR3Alarms 41 }

zigorAlarmaStringsIout6 OBJECT-IDENTITY
        STATUS          current
        DESCRIPTION
                "String 6 Current under limit"
        ::= { zigorSolarCTR3Alarms 42 }

zigorAlarmaStringsIout7 OBJECT-IDENTITY
        STATUS          current
        DESCRIPTION
                "String 7 Current under limit"
        ::= { zigorSolarCTR3Alarms 43 }

zigorAlarmaStringsIout8 OBJECT-IDENTITY
        STATUS          current
        DESCRIPTION
                "String 8 Current under limit"
        ::= { zigorSolarCTR3Alarms 44 }

zigorAlarmaFugaDCFV OBJECT-IDENTITY
        STATUS          current
        DESCRIPTION
                "High DC photovoltaic leakage current (not available)"
        ::= { zigorSolarCTR3Alarms 45 }

zigorAlarmaFugaDCFVInst OBJECT-IDENTITY
        STATUS          current
        DESCRIPTION
                "High instant photovoltaic leakage current (not available)"
        ::= { zigorSolarCTR3Alarms 46 }

zigorAlarmaFugaFV OBJECT-IDENTITY
        STATUS          current
        DESCRIPTION
                "High DC-AC photovoltaic leakage current (not available)"
```

```
        ::= { zigorSolarCTR3Alarms 47 }

zigorAlarmaFugaAC OBJECT-IDENTITY
        STATUS          current
        DESCRIPTION
                "High AC leakage current (not available)"
        ::= { zigorSolarCTR3Alarms 48 }

zigorAlarmaErrorComFugas OBJECT-IDENTITY
        STATUS          current
        DESCRIPTION
                "Communication Error with Leaks mcu (not available)"
        ::= { zigorSolarCTR3Alarms 49 }

zigorAlarmaErrorPersisInvFugas OBJECT-IDENTITY
        STATUS          current
        DESCRIPTION
                "Persistent Leak Error"
        ::= { zigorSolarCTR3Alarms 50 }

zigorAlarmaPLL OBJECT-IDENTITY
        STATUS          current
        DESCRIPTION
                "PLL Alarm"
        ::= { zigorSolarCTR3Alarms 51 }

zigorAlarmaFuga OBJECT-IDENTITY
        STATUS          current
        DESCRIPTION
                "High leakage current"
        ::= { zigorSolarCTR3Alarms 52 }

zigorAlarmaErrorBrake OBJECT-IDENTITY
        STATUS          current
        DESCRIPTION
                "High leakage current"
        ::= { zigorSolarCTR3Alarms 53 }

END
```

2.4 MIB DEFINITIONS: TC

```
ZIGOR-TC DEFINITIONS ::= BEGIN

IMPORTS
        MODULE-IDENTITY
                FROM SNMPv2-SMI
        TEXTUAL-CONVENTION
                FROM SNMPv2-TC
        zigorModules
                FROM ZIGOR-SMI;

zigorTextualConventions MODULE-IDENTITY
        LAST-UPDATED    "201003071130Z"
        ORGANIZATION    "Corporacion Zigor, S.A."
        CONTACT-INFO
                "       Corporacion Zigor, S.A.
                        Depto. I+D

                Postal: C/ Portal de Gamarra, 28
                        C.P 01013 Vitoria-Gasteiz , Alava
```

```
                    (Spain)

                Tel:    +34 (945) 214 600

                E-mail: zigor@zigor.com"
        DESCRIPTION
                "This module defines textual conventions used
                throughout zigor enterprise mibs."
        ::= { zigorModules 1 }

NonNegativeInteger ::= TEXTUAL-CONVENTION
        DISPLAY-HINT   "d"
        STATUS              current
        DESCRIPTION
                "This data type is a non-negative value."
      SYNTAX      INTEGER (0..2147483647)

PositiveInteger ::= TEXTUAL-CONVENTION
        DISPLAY-HINT "d"
        STATUS      current
        DESCRIPTION
                "This data type is a non-zero and non-negative value."
        SYNTAX      INTEGER (1..2147483647)

OnOff ::= TEXTUAL-CONVENTION
        STATUS              current
        DESCRIPTION
                "On/Off data type."
        SYNTAX              INTEGER { on(1), off(2) }

Percent         ::= TEXTUAL-CONVENTION
        STATUS              current
        DESCRIPTION
                "Percent value."
        SYNTAX              INTEGER (0..100)

ElementList ::= TEXTUAL-CONVENTION
        STATUS              current
        DESCRIPTION
                "An octet string containing a list of element values.
                Values are preferably in human-readable form.

                An object of this type contains a list of element values
                which are used to select a set of entries in a table.

                An element value is an arbitrary string of octets, but
                may not contain a delimiter character.  Delimiter
                characters are defined to be one of the following:

                        - An ASCII space character (0x20).

                        - An ASCII TAB character (0x09).

                        - An ASCII carriage return (CR) character (0x0D).

                        - An ASCII line feed (LF) character (0x0B).

                Delimiter characters are used to separate element values
                in an element list.  Only a single delimiter character may
                occur between two element values.  An element value may not
```

```
            have a zero length.  These constraints imply certain
            restrictions on the contents of this object:

                    - There cannot be a leading or trailing delimiter
                      character.

                    - There cannot be multiple adjacent delimiter
                      characters.

            Some examples of valid element lists are:

                    - An empty string

                    - '1 3 5'

                    - '8'

            Note that although a element value may not have a length of
            zero, an empty string is still valid.  This indicates
            an empty list (i.e. there are no element values in the list).

            The use of the element list to select table entries is
            application and MIB specific.  Typically, an application
            will provide one or more element values, and any entry
            which contains some combination of these element values
            will be selected."
        SYNTAX              OCTET STRING (SIZE(0..255))

ZDateAndTime ::= TEXTUAL-CONVENTION
        DISPLAY-HINT        "4a-2a-2a,2a:2a:2a.1a,1a2a:2a"
        STATUS              current
        DESCRIPTION
            "A date-time specification.

            field  octets  contents              range
            -----  ------  --------            -----
              1      1-4   year                '0000'..'9999'
              2      5-6   month                 '01'..'12'
              3      7-8   day                 '01'..'31'
              4      9-10  hour                 '00'..'23'
              5     11-12  minutes                '00'..'59'
              6     13-14  seconds                '00'..'60'
                       (use 60 for leap-second)
              7      15    deci-seconds          '0'..'9'
              8      16    direction from UTC      '+' / '-'
              9     17-18  hours from UTC*        '00'..'13'
             10     19-20  minutes from UTC        '00'..'59'

            * Notes:
            - daylight saving time in New Zealand is +13

            For example, Tuesday May 26, 1992 at 1:30:15 PM EDT would be
            displayed as:

                         1992-05-26,13:30:15.0,-04:00
            Note that if only local time is known, then timezone
            information (fields 8-10) is not present."
        SYNTAX                  OCTET STRING (SIZE (15 | 20))

IntegerString ::= TEXTUAL-CONVENTION
```

```
        DISPLAY-HINT        "a"
        STATUS              current
        DESCRIPTION
                "This data type is an ASCII representation of a signed or unsigned integer."
        SYNTAX              OCTET STRING (SIZE (8))

FloatString ::= TEXTUAL-CONVENTION
        DISPLAY-HINT        "a"
        STATUS              current
        DESCRIPTION
                "This data type is an ASCII representation of a real number, format %8.2f."
        SYNTAX              OCTET STRING (SIZE (8))

ArchSequenceString ::= TEXTUAL-CONVENTION
        DISPLAY-HINT        "a,a"
        STATUS              current
        DESCRIPTION
                "This data type is an ASCII representation of a sequence that establishes
                the distribution of elements in racks. The sequence follows the
                pattern: rack#,element#,rack#,element#, ... ."
        SYNTAX              OCTET STRING (SIZE (0..63))

AnalogVariableString ::= TEXTUAL-CONVENTION
        DISPLAY-HINT        "8a" "a"
        STATUS              current
        DESCRIPTION
                "This data type is an ASCII representation of an analog variable
                real time value. It is formatted as two ASCII strings separated by
                a space (%8s %s)."
        SYNTAX              OCTET STRING (SIZE (0..63))

Flag16String ::= TEXTUAL-CONVENTION
        DISPLAY-HINT        "a"
        STATUS              current
        DESCRIPTION
                "This data type is an ASCII representation of a 16 bit flag sequence."
        SYNTAX              OCTET STRING (SIZE (16))

Flag32String ::= TEXTUAL-CONVENTION
        DISPLAY-HINT        "a"
        STATUS              current
        DESCRIPTION
                "This data type is an ASCII representation of a 32 bit flag sequence."
        SYNTAX              OCTET STRING (SIZE (32))

Flag64String ::= TEXTUAL-CONVENTION
        DISPLAY-HINT        "a"
        STATUS              current
        DESCRIPTION
                "This data type is an ASCII representation of a 64 bit flag sequence."
        SYNTAX              OCTET STRING (SIZE (64))

DateString ::= TEXTUAL-CONVENTION
        DISPLAY-HINT        "a"
        STATUS              current
        DESCRIPTION
                "This data type is an ASCII representation of a date and time,format
                "dd-mm-yyyy hh:mm:ss:xx w" being dd: date, mm: month, yyyy:year, w: day
                of the week (1-7),hh: hour; mm: minute, ss: second, xx: hundredths of second."
        SYNTAX              OCTET STRING (SIZE (24))
```

```
EventTableItem ::= TEXTUAL-CONVENTION
        DISPLAY-HINT        "8a" "1a" "1a" "64a" "1a" "16a"
        STATUS              current
        DESCRIPTION
                "This data type is an ASCII representation of a event in the Z001's event table. It's
constructed as a sequence of previously defined textual conventions using a blank character as field
separator, specifically:

                Field           Type            Offset
                ----------------------------------------
                EventID                 IntegerString   1

                EventClass      1 ASCII char    10

                EventParameter          Flag64String    12

                EventFlags      Flag16String    77"
        SYNTAX              OCTET STRING (SIZE (92))

HistoryTableItem ::= TEXTUAL-CONVENTION
        DISPLAY-HINT        "8a" "1a" "24a" "1a" "8a" "1a" "64a"
        STATUS              current
        DESCRIPTION
                "This data type is an ASCII representation of a register in the Z001's history event table.
It's constructed as a sequence of previously defined textual conventions using a blank character as field
separator, specifically:

                Field           Type            Offset
                ----------------------------------------
                EventCode       IntegerString   1       (EventCode is an integer that goes sequentialy
around 0..65535 for every new event in the table)

                EventDate       DateString      10      (hundredhts of second and day of the week not used)

                EventID                 IntegerString   35

                EventParameter          Flag64String    44"
        SYNTAX              OCTET STRING (SIZE (128))

END
```

2.5 MIB DEFINITIONS: ALARM LOG

```
ZIGOR-ALARM-LOG-MIB DEFINITIONS ::= BEGIN

IMPORTS
        MODULE-IDENTITY,
        OBJECT-TYPE,
        NOTIFICATION-TYPE,
        Integer32
                FROM SNMPv2-SMI
        TEXTUAL-CONVENTION,
        AutonomousType
                FROM SNMPv2-TC
        PositiveInteger,
        ElementList,
        ZDateAndTime
                FROM ZIGOR-TC
        AlarmCondition
                FROM ZIGOR-ALARM-MIB
```

```
        zigorMgmt,
        zigorExperiment
                FROM ZIGOR-SMI;

zigorAlarmLogMIB    MODULE-IDENTITY
        LAST-UPDATED      "201003071130Z"
        ORGANIZATION      "Corporazion Zigor, S.A."
        CONTACT-INFO
                "       Corporacion Zigor, S.A.
                        Depto. I+D

                Postal: C/ Portal de Gamarra, 28
                        C.P 01013 Vitoria-Gasteiz , Alava
                        (Spain)

                Tel:    +34 (945) 214 600

                E-mail: zigor@zigor.com"
        DESCRIPTION
                "Alarm Log MIB"
        ::= { zigorExperiment 8 }

zigorAlarmLog OBJECT IDENTIFIER ::= { zigorAlarmLogMIB 1 }

zigorAlarmLogTotalEntries OBJECT-TYPE
        SYNTAX    Integer32
        MAX-ACCESS read-only
        STATUS    current
        DESCRIPTION
                "The total number of alarm entries currently in the log."
        ::= { zigorAlarmLog 1 }

zigorAlarmLogMaxEntries OBJECT-TYPE
        SYNTAX    Integer32
        MAX-ACCESS read-only
        STATUS    current
        DESCRIPTION
                "This object represents the maximum number of
                alarm entries in the zigorAlarmLogTable. When the
                object zigorAlarmLogTotalEntries equals this object,
                the next alarm appearing causes the oldest entry
                to be deleted.
                If the value of this object is increased, then oldest
                entry removal ceases until the maximum is reached
                again. If management reduces the value of this
                object, then, starting with the oldest, alarm
                entries are removed until the new number of
                entries is reached."
        ::= { zigorAlarmLog 2 }

zigorAlarmLogQueueWraps OBJECT-TYPE
        SYNTAX    Integer32
        MAX-ACCESS read-only
        STATUS    current
        DESCRIPTION
                "This object represents the number of times the queue has wrapped.
                Since circular queues are used for storing the entries, when all allocated
                entries are used, the oldest entries are reused, thus
                creating a wrap condition.  A value of zero indicates the
                queue has not wrapped, except in the case that the counter
```

```
                itself has wrapped."
        ::= { zigorAlarmLog 3 }

zigorAlarmLogIndex OBJECT-TYPE
        SYNTAX     PositiveInteger
        MAX-ACCESS read-only
        STATUS     current
        DESCRIPTION
                "The current index in the circular buffer where alarms are
                being logged."
        ::= { zigorAlarmLog 4 }

zigorAlarmLogTable OBJECT-TYPE
        SYNTAX     SEQUENCE OF ZigorAlarmLogEntry
        MAX-ACCESS not-accessible
        STATUS     current
        DESCRIPTION
          "Alarm log table. The number of rows in the table at
             any given time is reflected by the value of zigorAlarmLogPresent."
        ::= { zigorAlarmLog 5 }

zigorAlarmLogEntry OBJECT-TYPE
        SYNTAX     ZigorAlarmLogEntry
        MAX-ACCESS not-accessible
        STATUS     current
        DESCRIPTION
                "An entry containing information applicable to a
           particular alarm log."
        INDEX { zigorAlarmLogId }
        ::= { zigorAlarmLogTable 1 }

ZigorAlarmLogEntry ::= SEQUENCE {
        zigorAlarmLogId                 PositiveInteger,
        zigorAlarmLogDescr          AutonomousType,
        zigorAlarmLogTime           ZDateAndTime,
        zigorAlarmLogElementList    ElementList,
        zigorAlarmLogCondition          AlarmCondition
}

zigorAlarmLogId OBJECT-TYPE
        SYNTAX              PositiveInteger
        MAX-ACCESS          not-accessible
        STATUS              current
        DESCRIPTION
                "A unique identifier for an alarm condition.  This
                value must remain constant."
        ::= { zigorAlarmLogEntry 1 }

zigorAlarmLogDescr OBJECT-TYPE
        SYNTAX              AutonomousType
        MAX-ACCESS          read-only
        STATUS              current
        DESCRIPTION
                "A reference to an alarm description object.  The
                object referenced should not be accessible, but rather
                be used to provide a unique description of the alarm
                condition."
        ::= { zigorAlarmLogEntry 2 }

zigorAlarmLogTime OBJECT-TYPE
```

```
        SYNTAX          ZDateAndTime
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "Date and time when the alarm condition was detected."
        ::= { zigorAlarmLogEntry 3 }

zigorAlarmLogElementList OBJECT-TYPE
        SYNTAX          ElementList
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "Items where the alarm is active."
        ::= { zigorAlarmLogEntry 4 }

zigorAlarmLogCondition OBJECT-TYPE
        SYNTAX          AlarmCondition
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "Indicates alarm condition."
        ::= { zigorAlarmLogEntry 5 }

--
-- Traps
--
zigorAlarmLogTraps OBJECT IDENTIFIER ::= { zigorAlarmLogMIB 2 }

zigorTrapAlarmLogEntryAdded NOTIFICATION-TYPE
      OBJECTS { zigorAlarmLogId, zigorAlarmLogDescr, zigorAlarmLogElementList,
zigorAlarmLogCondition }
        STATUS  current
        DESCRIPTION
              "This trap is sent each time an alarm is inserted into
                the alarm log table."
        ::= { zigorAlarmLogTraps 1 }

END
```

2.6 MIB DEFINITIONS: ALARM

```
ZIGOR-ALARM-MIB DEFINITIONS ::= BEGIN

IMPORTS
        MODULE-IDENTITY,
        OBJECT-TYPE,
        OBJECT-IDENTITY,
        Integer32
                FROM SNMPv2-SMI
        TEXTUAL-CONVENTION,
        AutonomousType,
        TruthValue
                FROM SNMPv2-TC
        PositiveInteger,
        ElementList,
        ZDateAndTime
                FROM ZIGOR-TC
        zigorMgmt,
        zigorExperiment
                FROM ZIGOR-SMI;
```

```
zigorAlarmMIB    MODULE-IDENTITY
        LAST-UPDATED       "201003071130Z"
        ORGANIZATION       "Corporazion Zigor, S.A."
        CONTACT-INFO
                "       Corporacion Zigor, S.A.
                        Depto. I+D

                Postal: C/ Portal de Gamarra, 28
                        C.P 01013 Vitoria-Gasteiz , Alava
                        (Spain)

                Tel:    +34 (945) 214 600

                E-mail: zigor@zigor.com"
        DESCRIPTION
                "MIB de alarmas"
        ::= { zigorExperiment 5 }

AlarmCondition ::= TEXTUAL-CONVENTION
        STATUS          current
        DESCRIPTION
                "Tipo para representar condicion de alarma."
        SYNTAX          INTEGER {
                active(1),
                inactive(2),
                reconized(3),
                blocked(4)
        }

AlarmSeverity ::= TEXTUAL-CONVENTION
        STATUS          current
        DESCRIPTION
                "Tipe to represent level of an alarm."
        SYNTAX          INTEGER {
                minor(1),
                persistent(2),
                serious(3),
                severe(4)
        }

zigorAlarm OBJECT IDENTIFIER ::= { zigorAlarmMIB 1 }

zigorAlarmsPresent OBJECT-TYPE
        SYNTAX     Integer32
        MAX-ACCESS read-only

        STATUS     current
        DESCRIPTION
                "The present number of active alarm conditions."
        ::= { zigorAlarm 1 }

zigorAlarmTable OBJECT-TYPE
        SYNTAX     SEQUENCE OF ZigorAlarmEntry
        MAX-ACCESS not-accessible
        STATUS     current
        DESCRIPTION
          "A list of alarm table entries.  The table contains
          zero, one, or many rows at any moment, depending upon
          the number of alarm conditions in effect.  The table
          is initially empty at agent startup.  The agent
```

```
            creates a row in the table each time a condition is
            detected and deletes that row when that condition no
            longer pertains.  The agent creates the first row with
            zigorAlarmId equal to 1, and increments the value of
            zigorAlarmId each time a new row is created, wrapping to
            the first free value greater than or equal to 1 when
            the maximum value of zigorAlarmId would otherwise be
            exceeded.  Consequently, after multiple operations,
            the table may become sparse, e.g., containing entries
            for rows 95, 100, 101, and 203 and the entries should
            not be assumed to be in chronological order because
            zigorAlarmId might have wrapped.

            Alarms are named by an AutonomousType (OBJECT
            IDENTIFIER), zigorAlarmDescr, to allow a single table to
            reflect well known alarms plus alarms defined by a
            particular implementation, i.e., as documented in the
            private enterprise MIB definition for the device.  No
            two rows will have the same value of zigorAlarmDescr
            since alarms define conditions.  In order to meet this
            requirement, care should be taken in the definition of
            alarm conditions to insure that a system cannot enter
            the same condition multiple times simultaneously.

            The number of rows in the table at any given time is
            reflected by the value of zigorAlarmsPresent."
        ::= { zigorAlarm 2 }

zigorAlarmEntry OBJECT-TYPE
        SYNTAX     ZigorAlarmEntry
        MAX-ACCESS not-accessible
        STATUS     current
        DESCRIPTION
                "An entry containing information applicable to a
            particular alarm."
        INDEX { zigorAlarmId }
        ::= { zigorAlarmTable 1 }

ZigorAlarmEntry ::= SEQUENCE {
        zigorAlarmId            PositiveInteger,
        zigorAlarmDescr                 AutonomousType,
        zigorAlarmTime                  ZDateAndTime,
        zigorAlarmElementList           ElementList,
        zigorAlarmCondition     AlarmCondition
}

zigorAlarmId OBJECT-TYPE
        SYNTAX                  PositiveInteger
        MAX-ACCESS              not-accessible
        STATUS                  current
        DESCRIPTION
                "A unique identifier for an alarm condition.  This
                value must remain constant."
        ::= { zigorAlarmEntry 1 }

zigorAlarmDescr OBJECT-TYPE
        SYNTAX                  AutonomousType
        MAX-ACCESS              read-only
        STATUS                  current
        DESCRIPTION
```

```
                "A reference to an alarm description object.  The
                object referenced should not be accessible, but rather
                be used to provide a unique description of the alarm
                condition."
        ::= { zigorAlarmEntry 2 }

zigorAlarmTime OBJECT-TYPE
        SYNTAX          ZDateAndTime
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "Date and time when the alarm condition was _last_
                detected."
        ::= { zigorAlarmEntry 3 }

zigorAlarmElementList OBJECT-TYPE
        SYNTAX          ElementList
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "Items where the alarm is active."
        ::= { zigorAlarmEntry 4 }

zigorAlarmCondition OBJECT-TYPE
        SYNTAX          AlarmCondition
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "Indicates alarm condition."
        ::= { zigorAlarmEntry 5 }

--
-- Alarms Configuration
--
zigorAlarmConfig OBJECT IDENTIFIER ::= { zigorAlarmMIB 2 }

zigorAlarmsCfgPresent OBJECT-TYPE
        SYNTAX    Integer32
        MAX-ACCESS read-only

        STATUS    current
        DESCRIPTION
                "The present number of alarm configuration rows."
        ::= { zigorAlarmConfig 1 }

zigorAlarmCfgTable OBJECT-TYPE
        SYNTAX    SEQUENCE OF ZigorAlarmCfgEntry
        MAX-ACCESS not-accessible
        STATUS    current
        DESCRIPTION
          "Alarms configuration table"
        ::= { zigorAlarmConfig 2 }

zigorAlarmCfgEntry OBJECT-TYPE
        SYNTAX    ZigorAlarmCfgEntry
        MAX-ACCESS not-accessible
        STATUS    current
        DESCRIPTION
                "An entry containing information applicable to a
          particular alarm."
```

```
        INDEX { zigorAlarmCfgId }
        ::= { zigorAlarmCfgTable 1 }

ZigorAlarmCfgEntry ::= SEQUENCE {
        zigorAlarmCfgId                 PositiveInteger,
        zigorAlarmCfgDescr          AutonomousType,
        zigorAlarmCfgSeverity           AlarmSeverity,
        zigorAlarmCfgNotification   TruthValue
}

zigorAlarmCfgId OBJECT-TYPE
        SYNTAX          PositiveInteger
        MAX-ACCESS      not-accessible
        STATUS          current
        DESCRIPTION
                "A unique identifier for an alarm config.  This
                value must remain constant."
        ::= { zigorAlarmCfgEntry 1 }

zigorAlarmCfgDescr OBJECT-TYPE
        SYNTAX          AutonomousType
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "A reference to an alarm description object.  The
                object referenced should not be accessible, but rather
                be used to provide a unique description of the alarm
                condition."
        ::= { zigorAlarmCfgEntry 2 }

zigorAlarmCfgSeverity OBJECT-TYPE
        SYNTAX          AlarmSeverity
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "The severity of this alarm"
        ::= { zigorAlarmCfgEntry 3 }

zigorAlarmCfgNotification OBJECT-TYPE
        SYNTAX          TruthValue
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "Type of notification for an alarm."
        ::= { zigorAlarmCfgEntry 4 }

--
-- Generic alarms
--
zigorSysAlarms OBJECT IDENTIFIER ::= { zigorAlarmMIB 3 }

zigorAlarmaStart OBJECT-IDENTITY
        STATUS          current
        DESCRIPTION
                "System start"
        ::= { zigorSysAlarms 1 }

zigorAlarmaPasswdChange OBJECT-IDENTITY
        STATUS          current
        DESCRIPTION
```

```
                "Password change. Elements shows de level which password has changed."
        ::= { zigorSysAlarms 2 }


--
-- Traps
--
zigorAlarmTraps OBJECT IDENTIFIER ::= { zigorAlarmMIB 4 }

zigorTrapAlarmEntryAdded NOTIFICATION-TYPE
      OBJECTS { zigorAlarmId, zigorAlarmDescr, zigorAlarmElementList, zigorAlarmCondition }
        STATUS  current
        DESCRIPTION
              "This trap is sent each time an alarm is inserted into
                the alarm table."
        ::= { zigorAlarmTraps 1 }

END
```

2.7 MIB DEFINITIONS: PARAMETERS

```
ZIGOR-PARAMETER-MIB DEFINITIONS ::= BEGIN

IMPORTS
        MODULE-IDENTITY,
        OBJECT-TYPE,
        Integer32
                FROM SNMPv2-SMI
        DisplayString,
        TEXTUAL-CONVENTION
                FROM SNMPv2-TC
        NonNegativeInteger,
        ZDateAndTime
                FROM ZIGOR-TC
        zigorMgmt,
        zigorExperiment
                FROM ZIGOR-SMI;

zigorParameterMIB MODULE-IDENTITY
        LAST-UPDATED      "201003071130Z"
        ORGANIZATION      "Corporacion Zigor, S.A."
        CONTACT-INFO
                "       Corporacion Zigor, S.A.
                        Depto. I+D

                Postal: C/ Portal de Gamarra, 28
                        C.P 01013 Vitoria-Gasteiz , Alava
                        (Spain)

                Tel:    +34 (945) 214 600

                E-mail: zigor@zigor.com"
        DESCRIPTION
                "Zigor Parameter MIB"
        ::= { zigorExperiment 3 }

ParamState ::= TEXTUAL-CONVENTION
        STATUS      current
        DESCRIPTION
                "Type to represent the state of the parameters.
```

```
                The returned values are:

                  temp (1)    Parameters currently in edition.
                              The system is not synchronized with
                              parameters shown.
                              5 minutes after last modification,
                              the system returns to the last active state.

                  active (2)  The parameters shown are
                              active (have not been edited)
                              The system is synchronized with
                              parameters shown.

                  factory (3) The parameters correspond to
                              factory configuration.
                              The system is synchronized with
                              parameters shown.

                Setting this variable the result is:

                  temp (1)    Saves the current edition as active
                              parameters and the system is synchronized.
                                 If successful, this variable
                              becomes active (2).

                  active (2)  Reload the active configuration,
                              cancelling any temporary state.

                  factory (3) Factory configuration is loaded.
                              This configuration is also temporary
                              should then establish temp (1)
                              if you want to save the settings
                              factory and synchronize the system."

        SYNTAX        INTEGER {
                temp(1),    -- current edition (temporary)
                active(2),  -- cancel current edition (reload "active")
                factory(3)  -- load factory parameters
        }

NotificationLang ::= TEXTUAL-CONVENTION
        STATUS        current
        DESCRIPTION
                "Type to represent the language for notifications."
        SYNTAX        INTEGER {
                english(1),
                spanish(2),
                french(3),
                italian(4),
                german(5)
        }

TimeZone ::= TEXTUAL-CONVENTION
        STATUS        current
        DESCRIPTION
                "Type to represent the TimeZone based on 'tz' database (http://www.twinsun.com/tz/tz-
link.htm) '2011a' updated."
        SYNTAX        INTEGER {
                AfricaAbidjan(1),
```

AfricaAccra(2),
AfricaAddisAbaba(3),
AfricaAlgiers(4),
AfricaAsmara(5),
AfricaAsmera(6),
AfricaBamako(7),
AfricaBangui(8),
AfricaBanjul(9),
AfricaBissau(10),
AfricaBlantyre(11),
AfricaBrazzaville(12),
AfricaBujumbura(13),
AfricaCairo(14),
AfricaCasablanca(15),
AfricaCeuta(16),
AfricaConakry(17),
AfricaDakar(18),
AfricaDaresSalaam(19),
AfricaDjibouti(20),
AfricaDouala(21),
AfricaElAaiun(22),
AfricaFreetown(23),
AfricaGaborone(24),
AfricaHarare(25),
AfricaJohannesburg(26),
AfricaKampala(27),
AfricaKhartoum(28),
AfricaKigali(29),
AfricaKinshasa(30),
AfricaLagos(31),
AfricaLibreville(32),
AfricaLome(33),
AfricaLuanda(34),
AfricaLubumbashi(35),
AfricaLusaka(36),
AfricaMalabo(37),
AfricaMaputo(38),
AfricaMaseru(39),
AfricaMbabane(40),
AfricaMogadishu(41),
AfricaMonrovia(42),
AfricaNairobi(43),
AfricaNdjamena(44),
AfricaNiamey(45),
AfricaNouakchott(46),
AfricaOuagadougou(47),
AfricaPortoNovo(48),
AfricaSaoTome(49),
AfricaTimbuktu(50),
AfricaTripoli(51),
AfricaTunis(52),
AfricaWindhoek(53),
AmericaAdak(54),
AmericaAnchorage(55),
AmericaAnguilla(56),
AmericaAntigua(57),
AmericaAraguaina(58),
AmericaArgentina(59),
AmericaAruba(60),
AmericaAsuncion(61),

AmericaAtikokan(62),
AmericaAtka(63),
AmericaBahia(64),
AmericaBahiaBanderas(65),
AmericaBarbados(66),
AmericaBelem(67),
AmericaBelize(68),
AmericaBlancSablon(69),
AmericaBoaVista(70),
AmericaBogota(71),
AmericaBoise(72),
AmericaBuenosAires(73),
AmericaCambridgeBay(74),
AmericaCampoGrande(75),
AmericaCancun(76),
AmericaCaracas(77),
AmericaCatamarca(78),
AmericaCayenne(79),
AmericaCayman(80),
AmericaChicago(81),
AmericaChihuahua(82),
AmericaCoralHarbour(83),
AmericaCordoba(84),
AmericaCostaRica(85),
AmericaCuiaba(86),
AmericaCuracao(87),
AmericaDanmarkshavn(88),
AmericaDawson(89),
AmericaDawsonCreek(90),
AmericaDenver(91),
AmericaDetroit(92),
AmericaDominica(93),
AmericaEdmonton(94),
AmericaEirunepe(95),
AmericaElSalvador(96),
AmericaEnsenada(97),
AmericaFortWayne(98),
AmericaFortaleza(99),
AmericaGlaceBay(100),
AmericaGodthab(101),
AmericaGooseBay(102),
AmericaGrandTurk(103),
AmericaGrenada(104),
AmericaGuadeloupe(105),
AmericaGuatemala(106),
AmericaGuayaquil(107),
AmericaGuyana(108),
AmericaHalifax(109),
AmericaHavana(110),
AmericaHermosillo(111),
AmericaIndiana(112),
AmericaIndianapolis(113),
AmericaInuvik(114),
AmericaIqaluit(115),
AmericaJamaica(116),
AmericaJujuy(117),
AmericaJuneau(118),
AmericaKentucky(119),
AmericaKnoxIN(120),
AmericaLaPaz(121),

AmericaLima(122),
AmericaLosAngeles(123),
AmericaLouisville(124),
AmericaMaceio(125),
AmericaManagua(126),
AmericaManaus(127),
AmericaMarigot(128),
AmericaMartinique(129),
AmericaMatamoros(130),
AmericaMazatlan(131),
AmericaMendoza(132),
AmericaMenominee(133),
AmericaMerida(134),
AmericaMexicoCity(135),
AmericaMiquelon(136),
AmericaMoncton(137),
AmericaMonterrey(138),
AmericaMontevideo(139),
AmericaMontreal(140),
AmericaMontserrat(141),
AmericaNassau(142),
AmericaNewYork(143),
AmericaNipigon(144),
AmericaNome(145),
AmericaNoronha(146),
AmericaNorthDakota(147),
AmericaOjinaga(148),
AmericaPanama(149),
AmericaPangnirtung(150),
AmericaParamaribo(151),
AmericaPhoenix(152),
AmericaPortauPrince(153),
AmericaPortofSpain(154),
AmericaPortoAcre(155),
AmericaPortoVelho(156),
AmericaPuertoRico(157),
AmericaRainyRiver(158),
AmericaRankinInlet(159),
AmericaRecife(160),
AmericaRegina(161),
AmericaResolute(162),
AmericaRioBranco(163),
AmericaRosario(164),
AmericaSantaIsabel(165),
AmericaSantarem(166),
AmericaSantiago(167),
AmericaSantoDomingo(168),
AmericaSaoPaulo(169),
AmericaScoresbysund(170),
AmericaShiprock(171),
AmericaStBarthelemy(172),
AmericaStJohns(173),
AmericaStKitts(174),
AmericaStLucia(175),
AmericaStThomas(176),
AmericaStVincent(177),
AmericaSwiftCurrent(178),
AmericaTegucigalpa(179),
AmericaThule(180),
AmericaThunderBay(181),

AmericaTijuana(182),
AmericaToronto(183),
AmericaTortola(184),
AmericaVancouver(185),
AmericaVirgin(186),
AmericaWhitehorse(187),
AmericaWinnipeg(188),
AmericaYakutat(189),
AmericaYellowknife(190),
AntarcticaCasey(191),
AntarcticaDavis(192),
AntarcticaDumontDUrville(193),
AntarcticaMacquarie(194),
AntarcticaMawson(195),
AntarcticaMcMurdo(196),
AntarcticaPalmer(197),
AntarcticaRothera(198),
AntarcticaSouthPole(199),
AntarcticaSyowa(200),
AntarcticaVostok(201),
ArcticLongyearbyen(202),
AsiaAden(203),
AsiaAlmaty(204),
AsiaAmman(205),
AsiaAnadyr(206),
AsiaAqtau(207),
AsiaAqtobe(208),
AsiaAshgabat(209),
AsiaAshkhabad(210),
AsiaBaghdad(211),
AsiaBahrain(212),
AsiaBaku(213),
AsiaBangkok(214),
AsiaBeirut(215),
AsiaBishkek(216),
AsiaBrunei(217),
AsiaCalcutta(218),
AsiaChoibalsan(219),
AsiaChongqing(220),
AsiaChungking(221),
AsiaColombo(222),
AsiaDacca(223),
AsiaDamascus(224),
AsiaDhaka(225),
AsiaDili(226),
AsiaDubai(227),
AsiaDushanbe(228),
AsiaGaza(229),
AsiaHarbin(230),
AsiaHoChiMinh(231),
AsiaHongKong(232),
AsiaHovd(233),
AsiaIrkutsk(234),
AsiaIstanbul(235),
AsiaJakarta(236),
AsiaJayapura(237),
AsiaJerusalem(238),
AsiaKabul(239),
AsiaKamchatka(240),
AsiaKarachi(241),

AsiaKashgar(242),
AsiaKathmandu(243),
AsiaKatmandu(244),
AsiaKolkata(245),
AsiaKrasnoyarsk(246),
AsiaKualaLumpur(247),
AsiaKuching(248),
AsiaKuwait(249),
AsiaMacao(250),
AsiaMacau(251),
AsiaMagadan(252),
AsiaMakassar(253),
AsiaManila(254),
AsiaMuscat(255),
AsiaNicosia(256),
AsiaNovokuznetsk(257),
AsiaNovosibirsk(258),
AsiaOmsk(259),
AsiaOral(260),
AsiaPhnomPenh(261),
AsiaPontianak(262),
AsiaPyongyang(263),
AsiaQatar(264),
AsiaQyzylorda(265),
AsiaRangoon(266),
AsiaRiyadh(267),
AsiaRiyadh87(268),
AsiaRiyadh88(269),
AsiaRiyadh89(270),
AsiaSaigon(271),
AsiaSakhalin(272),
AsiaSamarkand(273),
AsiaSeoul(274),
AsiaShanghai(275),
AsiaSingapore(276),
AsiaTaipei(277),
AsiaTashkent(278),
AsiaTbilisi(279),
AsiaTehran(280),
AsiaTelAviv(281),
AsiaThimbu(282),
AsiaThimphu(283),
AsiaTokyo(284),
AsiaUjungPandang(285),
AsiaUlaanbaatar(286),
AsiaUlanBator(287),
AsiaUrumqi(288),
AsiaVientiane(289),
AsiaVladivostok(290),
AsiaYakutsk(291),
AsiaYekaterinburg(292),
AsiaYerevan(293),
AtlanticAzores(294),
AtlanticBermuda(295),
AtlanticCanary(296),
AtlanticCapeVerde(297),
AtlanticFaeroe(298),
AtlanticFaroe(299),
AtlanticJanMayen(300),
AtlanticMadeira(301),

AtlanticReykjavik(302),
AtlanticSouthGeorgia(303),
AtlanticStHelena(304),
AtlanticStanley(305),
AustraliaACT(306),
AustraliaAdelaide(307),
AustraliaBrisbane(308),
AustraliaBrokenHill(309),
AustraliaCanberra(310),
AustraliaCurrie(311),
AustraliaDarwin(312),
AustraliaEucla(313),
AustraliaHobart(314),
AustraliaLHI(315),
AustraliaLindeman(316),
AustraliaLordHowe(317),
AustraliaMelbourne(318),
AustraliaNSW(319),
AustraliaNorth(320),
AustraliaPerth(321),
AustraliaQueensland(322),
AustraliaSouth(323),
AustraliaSydney(324),
AustraliaTasmania(325),
AustraliaVictoria(326),
AustraliaWest(327),
AustraliaYancowinna(328),
EuropeAmsterdam(329),
EuropeAndorra(330),
EuropeAthens(331),
EuropeBelfast(332),
EuropeBelgrade(333),
EuropeBerlin(334),
EuropeBratislava(335),
EuropeBrussels(336),
EuropeBucharest(337),
EuropeBudapest(338),
EuropeChisinau(339),
EuropeCopenhagen(340),
EuropeDublin(341),
EuropeGibraltar(342),
EuropeGuernsey(343),
EuropeHelsinki(344),
EuropeIsleofMan(345),
EuropeIstanbul(346),
EuropeJersey(347),
EuropeKaliningrad(348),
EuropeKiev(349),
EuropeLisbon(350),
EuropeLjubljana(351),
EuropeLondon(352),
EuropeLuxembourg(353),
EuropeMadrid(354),
EuropeMalta(355),
EuropeMariehamn(356),
EuropeMinsk(357),
EuropeMonaco(358),
EuropeMoscow(359),
EuropeNicosia(360),
EuropeOslo(361),

EuropeParis(362),
EuropePodgorica(363),
EuropePrague(364),
EuropeRiga(365),
EuropeRome(366),
EuropeSamara(367),
EuropeSanMarino(368),
EuropeSarajevo(369),
EuropeSimferopol(370),
EuropeSkopje(371),
EuropeSofia(372),
EuropeStockholm(373),
EuropeTallinn(374),
EuropeTirane(375),
EuropeTiraspol(376),
EuropeUzhgorod(377),
EuropeVaduz(378),
EuropeVatican(379),
EuropeVienna(380),
EuropeVilnius(381),
EuropeVolgograd(382),
EuropeWarsaw(383),
EuropeZagreb(384),
EuropeZaporozhye(385),
EuropeZurich(386),
IndianAntananarivo(387),
IndianChagos(388),
IndianChristmas(389),
IndianCocos(390),
IndianComoro(391),
IndianKerguelen(392),
IndianMahe(393),
IndianMaldives(394),
IndianMauritius(395),
IndianMayotte(396),
IndianReunion(397),
PacificApia(398),
PacificAuckland(399),
PacificChatham(400),
PacificChuuk(401),
PacificEaster(402),
PacificEfate(403),
PacificEnderbury(404),
PacificFakaofo(405),
PacificFiji(406),
PacificFunafuti(407),
PacificGalapagos(408),
PacificGambier(409),
PacificGuadalcanal(410),
PacificGuam(411),
PacificHonolulu(412),
PacificJohnston(413),
PacificKiritimati(414),
PacificKosrae(415),
PacificKwajalein(416),
PacificMajuro(417),
PacificMarquesas(418),
PacificMidway(419),
PacificNauru(420),
PacificNiue(421),

```
                PacificNorfolk(422),
                PacificNoumea(423),
                PacificPagoPago(424),
                PacificPalau(425),
                PacificPitcairn(426),
                PacificPohnpei(427),
                PacificPonape(428),
                PacificPortMoresby(429),
                PacificRarotonga(430),
                PacificSaipan(431),
                PacificSamoa(432),
                PacificTahiti(433),
                PacificTarawa(434),
                PacificTongatapu(435),
                PacificTruk(436),
                PacificWake(437),
                PacificWallis(438),
                PacificYap(439),
                localtime(440)
        }

MBBaudrate ::= TEXTUAL-CONVENTION
        STATUS      current
        DESCRIPTION
                "Type to represent the Modbus RTU Baudrate"
        SYNTAX      INTEGER {
                s9600(1),
                s19200(2),
                s38400(3),
                s57600(4),
                s115200(5)
        }
MBParity ::= TEXTUAL-CONVENTION
        STATUS      current
        DESCRIPTION
                "Type to represent the Modbus RTU Parity"
        SYNTAX      INTEGER {
                none(1),
                even(2),
                odd(3)
        }
MBMode ::= TEXTUAL-CONVENTION
        STATUS      current
        DESCRIPTION
                "Type to represent the Modbus Mode"
        SYNTAX      INTEGER {
                rtu(1),
                tcp(2)
        }

zigorParamSystem  OBJECT IDENTIFIER ::= { zigorParameterMIB 1 }
zigorParamNet     OBJECT IDENTIFIER ::= { zigorParameterMIB 2 }
zigorParamDialUp  OBJECT IDENTIFIER ::= { zigorParameterMIB 3 }
zigorParamControl OBJECT IDENTIFIER ::= { zigorParameterMIB 4 }
zigorParamModbus  OBJECT IDENTIFIER ::= { zigorParameterMIB 5 }

zigorSysName OBJECT-TYPE
        SYNTAX          DisplayString
        MAX-ACCESS      read-write
        STATUS          current
```

```
        DESCRIPTION
                "Name for this managed node.
                If the name is unknown, the value is the zero-length
                string."
        ::= { zigorParamSystem 1 }

zigorSysDescr OBJECT-TYPE
        SYNTAX          DisplayString
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "A textual description of the entity."
        ::= { zigorParamSystem 2 }

zigorSysLocation OBJECT-TYPE
        SYNTAX          DisplayString
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "The physical location of this node (e.g., `telephone
                closet, 3rd floor').  If the location is unknown, the value
                is the zero-length string."
        ::= { zigorParamSystem 3 }

zigorSysContact OBJECT-TYPE
        SYNTAX          DisplayString
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "The textual identification of the contact person for this
                managed node, together with information on how to contact
                this person.  If no contact information is known, the value
                is the zero-length string."
        ::= { zigorParamSystem 4 }

zigorSysPasswordTable OBJECT-TYPE
        SYNTAX          SEQUENCE OF ZigorSysPasswordEntry
        MAX-ACCESS      not-accessible
        STATUS          current
        DESCRIPTION
                "Table of passwords."
        ::= { zigorParamSystem 5 }

zigorSysPasswordEntry OBJECT-TYPE
        SYNTAX          ZigorSysPasswordEntry
        MAX-ACCESS      not-accessible
        STATUS          current
        DESCRIPTION
                "Row (conceptual) in table of passwords."
        ::= { zigorSysPasswordTable 1 }

ZigorSysPasswordEntry ::= SEQUENCE {
        zigorSysPasswordIndex       NonNegativeInteger,
        zigorSysPasswordPass        DisplayString,
        zigorSysPasswordDescr       DisplayString
}

zigorSysPasswordIndex OBJECT-TYPE
        SYNTAX          NonNegativeInteger
        MAX-ACCESS      not-accessible
```

```
        STATUS          current
        DESCRIPTION
                "The auxiliary variable used for identifying instances of
                the columnar objects in the zigorSysPasswordTable."
        ::= { zigorSysPasswordEntry 1 }

zigorSysPasswordPass OBJECT-TYPE
        SYNTAX          DisplayString
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "Password."
        ::= { zigorSysPasswordEntry 2 }

zigorSysPasswordDescr OBJECT-TYPE
        SYNTAX          DisplayString
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "Password description (role, access, etc.)."
        ::= { zigorSysPasswordEntry 3 }

zigorSysCode OBJECT-TYPE
        SYNTAX          DisplayString
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "The identification code of the manufacturer."
        ::= { zigorParamSystem 6 }

zigorSysVersion OBJECT-TYPE
        SYNTAX          DisplayString
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "Firmware Version."
        ::= { zigorParamSystem 7 }

zigorSysDate OBJECT-TYPE
        SYNTAX          ZDateAndTime
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "Date and time."
        ::= { zigorParamSystem 8 }

zigorSysTimeZone OBJECT-TYPE
        SYNTAX          TimeZone
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "Time Zone."
        ::= { zigorParamSystem 9 }

zigorSysNotificationLang OBJECT-TYPE
        SYNTAX          NotificationLang
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "Language for notifications. (Only in firmware >=1.1.2)"
```

```
        ::= { zigorParamSystem 10 }

-- DialUp
zigorDialUpPin OBJECT-TYPE
        SYNTAX          DisplayString
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "SIM PIN Number"
        ::= { zigorParamDialUp 1 }

zigorDialUpSmsNum1 OBJECT-TYPE
        SYNTAX          DisplayString
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "Mobile number to send SMS (1)."
        ::= { zigorParamDialUp 2 }

zigorDialUpSmsNum2 OBJECT-TYPE
        SYNTAX          DisplayString
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "Mobile number to send SMS (2)."
        ::= { zigorParamDialUp 3 }

zigorDialUpSmsNum3 OBJECT-TYPE
        SYNTAX          DisplayString
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "Mobile number to send SMS (3)."
        ::= { zigorParamDialUp 4 }

zigorDialUpSmsNum4 OBJECT-TYPE
        SYNTAX          DisplayString
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "Mobile number to send SMS (4). Only in firmware >=1.1.2"
        ::= { zigorParamDialUp 5 }

-- Net
zigorNetIP OBJECT-TYPE
        --SYNTAX          INTEGER32
        --DISPLAY-HINT    "3a.3a.3a.3a"
        SYNTAX          DisplayString
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "IP Adrress"
        ::= { zigorParamNet 1 }

zigorNetMask OBJECT-TYPE
        --SYNTAX          INTEGER32
        --DISPLAY-HINT    "3a.3a.3a.3a"
        SYNTAX          DisplayString (SIZE(0..255))
        MAX-ACCESS      read-write
        STATUS          current
```

```
        DESCRIPTION
                "Network Mask"
        ::= { zigorParamNet 2 }

zigorNetGateway OBJECT-TYPE
        --SYNTAX              INTEGER32
        --DISPLAY-HINT        "3a.3a.3a.3a"
        SYNTAX                DisplayString (SIZE(0..255))
        MAX-ACCESS            read-write
        STATUS                current
        DESCRIPTION
                "Default Gateway"
        ::= { zigorParamNet 3 }

zigorNetPortVnc OBJECT-TYPE
        SYNTAX                INTEGER (0..65535)
        MAX-ACCESS            read-write
        STATUS                current
        DESCRIPTION
                "TCP Port for VNC communication by Web Access."
        ::= { zigorParamNet 4 }

zigorNetPortHttp OBJECT-TYPE
        SYNTAX                INTEGER (0..65535)
        MAX-ACCESS            read-write
        STATUS                current
        DESCRIPTION
                "TCP Port for Web Access."
        ::= { zigorParamNet 5 }

zigorNetDNS OBJECT-TYPE
        SYNTAX                DisplayString (SIZE(0..255))
        MAX-ACCESS            read-write
        STATUS                current
        DESCRIPTION
                "Domain Name Server (Only in firmware >=1.1.2)"
        ::= { zigorParamNet 6 }

zigorNetEmail1 OBJECT-TYPE
        SYNTAX                DisplayString
        MAX-ACCESS            read-write
        STATUS                current
        DESCRIPTION
                "Email Address 1 (Only in firmware >=1.1.2)"
        ::= { zigorParamNet 7 }

zigorNetEmail2 OBJECT-TYPE
        SYNTAX                DisplayString
        MAX-ACCESS            read-write
        STATUS                current
        DESCRIPTION
                "Email Address 2 (Only in firmware >=1.1.2)"
        ::= { zigorParamNet 8 }

zigorNetEmail3 OBJECT-TYPE
        SYNTAX                DisplayString
        MAX-ACCESS            read-write
        STATUS                current
        DESCRIPTION
                "Email Address 3 (Only in firmware >=1.1.2)"
```

```
        ::= { zigorParamNet 9 }

zigorNetEmail4 OBJECT-TYPE
        SYNTAX          DisplayString
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "Email Address 4 (Only in firmware >=1.1.2)"
        ::= { zigorParamNet 10 }

zigorNetSmtp OBJECT-TYPE
        SYNTAX          DisplayString
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "SMTP email server (Only in firmware >=1.1.2)"
        ::= { zigorParamNet 11 }

zigorNetSmtpUser OBJECT-TYPE
        SYNTAX          DisplayString
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "SMTP account user (Only in firmware >=1.1.2)"
        ::= { zigorParamNet 12 }

zigorNetSmtpPass OBJECT-TYPE
        SYNTAX          DisplayString
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "SMTP account password (Only in firmware >=1.1.2)"
        ::= { zigorParamNet 13 }

zigorNetSmtpEmail OBJECT-TYPE
        SYNTAX          DisplayString
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "SMTP account email (Only in firmware >=1.1.2)"
        ::= { zigorParamNet 14 }

zigorNetSmtpAuth OBJECT-TYPE
        SYNTAX          DisplayString
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "SMTP account authentication (NO/SSL/TLS). Only in firmware >=1.1.2"
        ::= { zigorParamNet 15 }

zigorNetSmtpTest OBJECT-TYPE
        SYNTAX          DisplayString
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "SMTP email for test. (Only in firmware >=1.1.2)"
        ::= { zigorParamNet 16 }

-- Control
zigorCtrlParamState OBJECT-TYPE
```

```
        SYNTAX          ParamState
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                ""
        ::= { zigorParamControl 1 }

-- MODBUS
zigorModbusAddress OBJECT-TYPE
        SYNTAX          INTEGER (0..247)
        UNITS           ""
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "MODBUS RTU Address"
        ::= { zigorParamModbus 1 }

zigorModbusBaudrate OBJECT-TYPE
        SYNTAX          MBBaudrate
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "MODBUS RTU Baudrate"
        ::= { zigorParamModbus 2 }

zigorModbusParity OBJECT-TYPE
        SYNTAX          MBParity
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "MODBUS RTU Parity"
        ::= { zigorParamModbus 3 }

zigorModbusMode OBJECT-TYPE
        SYNTAX          MBMode
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "MODBUS Mode"
        ::= { zigorParamModbus 4 }

zigorModbusTCPPort OBJECT-TYPE
        SYNTAX          INTEGER (1..65535)
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "MODBUS TCP Port"
        ::= { zigorParamModbus 5 }

zigorModbusTCPTimeout OBJECT-TYPE
        SYNTAX          INTEGER (1..65535)
        UNITS           "seconds"
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "MODBUS TCP Inactivity Timeout for Connection Reset"
        ::= { zigorParamModbus 6 }

END
```

3 PROTOCOLO DE COMUNICACIONES MODBUS

Comunicaciones con el usuario, características:

- Conector DB9 → Comunicación RTU
- Conector RJ45 → Comunicación TCP/IP

La presente sección de este manual describe la comunicación, de manera que el usuario interactúe con las variables y parámetros de los inversores solares.

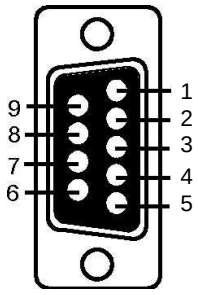
3.1 COMUNICACIÓN MODBUS RTU

Para realizar la comunicación ModBus RTU con los inversores ZIGOR SOLAR CTR3, es necesario conectarse al CON11 de la tarjeta de comunicaciones del inversor (véase manual del inversor).

Tenga en cuenta que el ModBus RTU es un protocolo serie abierto, y la información del inversor es facilitada por medio de la comunicación RS-485. Por lo que será necesario utilizar una comunicación de RS-485 a RS-485.

Configuración de la comunicación RS-485 usando el puerto CON11:

Numero de PIN	Polaridad
3	CHANNEL A(+)
8	CHANNEL B(-)
5	GROUND



Parámetros de configuración de ModBus RTU:

Dirección = 1

Velocidad = 38400

Bit de paridad = Par

Parámetros: 8 bits de datos & 1 bit de parada

3.2 COMUNICACION MODBUS TCP/IP

Para realizar la comunicación ModBus TCP/IP con los inversores ZIGOR SOLAR CTR3, es necesario conectarse al RJ45 de la tarjeta de comunicaciones del inversor (véase manual del inversor), exactamente igual que con la comunicación SNMP.

Parámetros de configuración de ModBus TCP:

Puerto por defecto TCP = 502

Tiempo de inactividad para reinicio de conexión por defecto TCP = 600s

3.3 MAPA MODBUS

A continuación se describen las variables accesibles en el sistema por medio de la comunicación dependiendo del tipo de variable y su accesibilidad:

- Registros de Entrada (Variables de estado)
- Entradas Discretas (Variables de estado de tipo booleano)
- Registro de Explotación (Parámetros, alarmas activas e histórico)

3.3.1 REGISTROS DE ENTRADA

Código de función = 0x04

ADDRESS	DESCRIPTION	TYPE	UNITS	SCALE	NOTES
0	Model	ASCIIx20			
10	Architecture	ENUM	1=ZIGOR_SOLAR_CTR3-300, 2=ZIGOR_SOLAR_CTR3-150, 3=ZIGOR_SOLAR_CTR3-100		
11	Code	ASCIIx6			
14	Firmware	ASCIIx36			
32	Sunrise Time	UINT32	seconds	1	
34	Sunset Time	UINT32	seconds	1	
36	Active Power	INT16	kW	0.1	
37	Phase R Active Power	INT16	kW	0.1	
38	Phase S Active Power	INT16	kW	0.1	
39	Phase T Active Power	INT16	kW	0.1	
40	Internal Derating	UINT16		0.001	
41	Aparent Power	INT16	kVA	0.1	
42	Phase R Aparent Power	INT16	kVA	0.1	
43	Phase S Aparent Power	INT16	kVA	0.1	
44	Phase T Aparent Power	INT16	kVA	0.1	
45	Reactive Power	INT16	kVAr	0.1	
46	Power Factor	INT16		0.001	
47	Active Energy	UINT32	kWh	0.1	
49	Phase R Voltage	UINT16	V	0.1	
50	Phase S Voltage	UINT16	V	0.1	
51	Phase T Voltage	UINT16	V	0.1	
52	Phase R AC Current	INT16	A	0.1	
53	Phase S AC Current	INT16	A	0.1	
54	Phase T AC Current	INT16	A	0.1	
55	Nominal AC Voltage	UINT16	V	0.1	
56	Minimum AC Voltage for Connection	UINT16	V	0.1	
57	Maximum AC Voltage for Connection	UINT16	V	0.1	
58	Minimum AC Voltage for Disconnection	UINT16	V	0.1	
59	Maximum AC Voltage for Disconnection	UINT16	V	0.1	
60	Frequency	UINT16	Hz	0.01	
61	Nominal Frequency	UINT16	Hz	0.01	
62	Minimun Frequency for Connection	UINT16	Hz	0.01	
63	Maximun Frequency for Connection	UINT16	Hz	0.01	

64	Minimun Frequency for Disconnection	UINT16	Hz	0.01	
65	Maximun Frequency for Disconnection	UINT16	Hz	0.01	
66	Photovoltaic Voltage	INT16	V	0.1	
67	Input Current	INT16	A	0.1	
68	Irradiance	UINT16	W/m^2	1	* Optional
69	Insulation Resistance	INT16	kOhms	1	
70	Cabinet Temperature	INT16	ºC	1	
71	Room Temperature	INT16	ºC	1	
72	Inverter 1 Heatsink Temperature	INT16	ºC	1	ºC
73	Inverter 2 Heatsink Temperature	INT16	ºC	1	ºC
74	System Status	ENUM	1=Stop, 2=Wait, 3=Start, 4=Fail, 5=MPPT, 6=Disconnected		

STRINGS

1000	Mean Current of total Strings	INT16	A	0.001	
1001	Mean Current in String 1	INT16	A	0.001	
1002	Mean Current in String 2	INT16	A	0.001	
1003	Mean Current in String 3	INT16	A	0.001	
1004	Mean Current in String 4	INT16	A	0.001	
1005	Mean Current in String 5	INT16	A	0.001	
1006	Mean Current in String 6	INT16	A	0.001	
1007	Mean Current in String 7	INT16	A	0.001	
1008	Mean Current in String 8	INT16	A	0.001	
1009	Current Value 1 of String 1	INT16	A	0.001	
1010	Current Value 2 of String 1	INT16	A	0.001	
1011	Current Value 3 of String 1	INT16	A	0.001	
1012	Current Value 4 of String 1	INT16	A	0.001	
1013	Current Value 5 of String 1	INT16	A	0.001	
1014	Current Value 6 of String 1	INT16	A	0.001	
1015	Current Value 7 of String 1	INT16	A	0.001	
1016	Current Value 8 of String 1	INT16	A	0.001	
1017	Current Value 1 of String 2	INT16	A	0.001	
1018	Current Value 2 of String 2	INT16	A	0.001	
1019	Current Value 3 of String 2	INT16	A	0.001	
1020	Current Value 4 of String 2	INT16	A	0.001	
1021	Current Value 5 of String 2	INT16	A	0.001	
1022	Current Value 6 of String 2	INT16	A	0.001	
1023	Current Value 7 of String 2	INT16	A	0.001	
1024	Current Value 8 of String 2	INT16	A	0.001	
1025	Current Value 1 of String 3	INT16	A	0.001	
1026	Current Value 2 of String 3	INT16	A	0.001	
1027	Current Value 3 of String 3	INT16	A	0.001	
1028	Current Value 4 of String 3	INT16	A	0.001	
1029	Current Value 5 of String 3	INT16	A	0.001	
1030	Current Value 6 of String 3	INT16	A	0.001	

1031	Current Value 7 of String 3	INT16	A	0.001	
1032	Current Value 8 of String 3	INT16	A	0.001	
1033	Current Value 1 of String 4	INT16	A	0.001	
1034	Current Value 2 of String 4	INT16	A	0.001	
1035	Current Value 3 of String 4	INT16	A	0.001	
1036	Current Value 4 of String 4	INT16	A	0.001	
1037	Current Value 5 of String 4	INT16	A	0.001	
1038	Current Value 6 of String 4	INT16	A	0.001	
1039	Current Value 7 of String 4	INT16	A	0.001	
1040	Current Value 8 of String 4	INT16	A	0.001	
1041	Current Value 1 of String 5	INT16	A	0.001	
1042	Current Value 2 of String 5	INT16	A	0.001	
1043	Current Value 3 of String 5	INT16	A	0.001	
1044	Current Value 4 of String 5	INT16	A	0.001	
1045	Current Value 5 of String 5	INT16	A	0.001	
1046	Current Value 6 of String 5	INT16	A	0.001	
1047	Current Value 7 of String 5	INT16	A	0.001	
1048	Current Value 8 of String 5	INT16	A	0.001	
1049	Current Value 1 of String 6	INT16	A	0.001	
1050	Current Value 2 of String 6	INT16	A	0.001	
1051	Current Value 3 of String 6	INT16	A	0.001	
1052	Current Value 4 of String 6	INT16	A	0.001	
1053	Current Value 5 of String 6	INT16	A	0.001	
1054	Current Value 6 of String 6	INT16	A	0.001	
1055	Current Value 7 of String 6	INT16	A	0.001	
1056	Current Value 8 of String 6	INT16	A	0.001	
1057	Current Value 1 of String 7	INT16	A	0.001	
1058	Current Value 2 of String 7	INT16	A	0.001	
1059	Current Value 3 of String 7	INT16	A	0.001	
1060	Current Value 4 of String 7	INT16	A	0.001	
1061	Current Value 5 of String 7	INT16	A	0.001	
1062	Current Value 6 of String 7	INT16	A	0.001	
1063	Current Value 7 of String 7	INT16	A	0.001	
1064	Current Value 8 of String 7	INT16	A	0.001	
1065	Current Value 1 of String 8	INT16	A	0.001	
1066	Current Value 2 of String 8	INT16	A	0.001	
1067	Current Value 3 of String 8	INT16	A	0.001	
1068	Current Value 4 of String 8	INT16	A	0.001	
1069	Current Value 5 of String 8	INT16	A	0.001	
1070	Current Value 6 of String 8	INT16	A	0.001	
1071	Current Value 7 of String 8	INT16	A	0.001	
1072	Current Value 8 of String 8	INT16	A	0.001	

3.3.2 ENTRADAS DISCRETAS (BOOLEANAS)

Código de función = 0x02

ADDRESS	DESCRIPTION	TYPE	UNITS	NOTES
0	Start-Stop Switch	BOOL	1=OPEN, 0=CLOSE	
1	DC Contactor Status	BOOL	1=OFF, 0=ON	
2	AC Contactor Status	BOOL	1=OFF, 0=ON	
3	DC Measure Contactor	BOOL	1=OPEN, 0=CLOSE	
4	DC Powertrap	BOOL	1=OFF, 0=ON	
5	AC Powertrap	BOOL	1=OFF, 0=ON	
6	Main Switch	BOOL	1=OPEN, 0=CLOSE	
7	Open Door	BOOL	1=OPEN, 0=CLOSE	
8	External Alarm	BOOL	1=ON, 0=OFF	
9	Room Fan Command	BOOL	1=ON, 0=OFF	
10	Cabinet Fan Command	BOOL	1=OFF, 0=ON	
11	System Start Relay	BOOL	1=ON, 0=OFF	
12	System Fail Relay	BOOL	1=OK, 0=FAIL	
13	Emergency Stop Relay	BOOL	1=ON, 0=OFF	

3.3.3 REGISTROS DE EXPLOTACION - PARAMETROS

Código de función = 0x03 (0x06 - 0x10)

ADDRESS	DESCRIPTION	TYPE	R/W	UNITS	SCALE	MIN	MAX
0	System Description	ASCIIx3	RW				
15	Location	ASCIIx2	RW				
25	IP Address	ASCIIx4	R				
27	Net Mask	ASCIIx4	R				
29	Gateway	ASCIIx4	R				
31	DNS	ASCIIx4	R				
33	Modbus Mode	ENUM	R	1=RTU, 2=TCP			
34	Modbus Address	UINT16	R				
35	Modbus Baudrate	ENUM	R	1=9600, 2=19200, 3=38400, 4=57600, 5=115200			
36	Modbus Parity	ENUM	R	1=NONE, 2=EVEN, 3=ODD			
37	Modbus TCP Port	UINT16	R				
38	Modbus TCP Inactivity Timeout	UINT16	RW	s	1	1	
39	Nominal Output Power	UINT16	R	kW	0.1		
40	Power Grid Regulation	ENUM	R	See User Manual			
41	Start Condition	ENUM	R	1=VPv, 2=Irradiance, 3=Solar Time			
42	Photovoltaic Voltage to Start	UINT16	R	V	0.1		
43	Minimum Irradiance to Start	UINT16	R	W/m^2	1		
44	Photovoltaic Voltage High	UINT16	R	V	0.1		
45	Derating Maximun Output	UINT16	R		0.001		
46	External Derating Value	UINT16	RW		0.001	0	1150
47	Phi Cosine (0 cancel)	INT16	RW		0.001	-1000	1000
48	Q Factor (if CosPhi==0)	INT16	RW		0.001	-1000	1000

STRINGS

ADDRESS	DESCRIPTION	TYPE	R/W	MIN	MAX	NOTES
1000	String 1 Enable	UINT16	RW	1	2	1= Enabe, 2 = Disable
1001	String 2 Enable	UINT16	RW	1	2	1= Enabe, 2 = Disable
1002	String 3 Enable	UINT16	RW	1	2	1= Enabe, 2 = Disable
1003	String 4 Enable	UINT16	RW	1	2	1= Enabe, 2 = Disable
1004	String 5 Enable	UINT16	RW	1	2	1= Enabe, 2 = Disable
1005	String 6 Enable	UINT16	RW	1	2	1= Enabe, 2 = Disable
1006	String 7 Enable	UINT16	RW	1	2	1= Enabe, 2 = Disable
1007	String 8 Enable	UINT16	RW	1	2	1= Enabe, 2 = Disable
1008	Current Measure 1 of String 1 Enable	UINT16	RW	1	2	1= Enabe, 2 = Disable
1009	Current Measure 2 of String 1 Enable	UINT16	RW	1	2	1= Enabe, 2 = Disable
1010	Current Measure 3 of String 1 Enable	UINT16	RW	1	2	1= Enabe, 2 = Disable
1011	Current Measure 4 of String 1 Enable	UINT16	RW	1	2	1= Enabe, 2 = Disable
1012	Current Measure 5 of String 1 Enable	UINT16	RW	1	2	1= Enabe, 2 = Disable
1013	Current Measure 6 of String 1 Enable	UINT16	RW	1	2	1= Enabe, 2 = Disable
1014	Current Measure 7 of String 1 Enable	UINT16	RW	1	2	1= Enabe, 2 = Disable
1015	Current Measure 8 of String 1 Enable	UINT16	RW	1	2	1= Enabe, 2 = Disable
1016	Current Measure 1 of String 2 Enable	UINT16	RW	1	2	1= Enabe, 2 = Disable
1017	Current Measure 2 of String 2 Enable	UINT16	RW	1	2	1= Enabe, 2 = Disable
1018	Current Measure 3 of String 2 Enable	UINT16	RW	1	2	1= Enabe, 2 = Disable
1019	Current Measure 4 of String 2 Enable	UINT16	RW	1	2	1= Enabe, 2 = Disable
1020	Current Measure 5 of String 2 Enable	UINT16	RW	1	2	1= Enabe, 2 = Disable
1021	Current Measure 6 of String 2 Enable	UINT16	RW	1	2	1= Enabe, 2 = Disable
1022	Current Measure 7 of String 2 Enable	UINT16	RW	1	2	1= Enabe, 2 = Disable
1023	Current Measure 8 of String 2 Enable	UINT16	RW	1	2	1= Enabe, 2 = Disable
1024	Current Measure 1 of String 3 Enable	UINT16	RW	1	2	1= Enabe, 2 = Disable
1025	Current Measure 2 of String 3 Enable	UINT16	RW	1	2	1= Enabe, 2 = Disable
1026	Current Measure 3 of String 3 Enable	UINT16	RW	1	2	1= Enabe, 2 = Disable
1027	Current Measure 4 of String 3 Enable	UINT16	RW	1	2	1= Enabe, 2 = Disable
1028	Current Measure 5 of String 3 Enable	UINT16	RW	1	2	1= Enabe, 2 = Disable
1029	Current Measure 6 of String 3 Enable	UINT16	RW	1	2	1= Enabe, 2 = Disable
1030	Current Measure 7 of String 3 Enable	UINT16	RW	1	2	1= Enabe, 2 = Disable
1031	Current Measure 8 of String 3 Enable	UINT16	RW	1	2	1= Enabe, 2 = Disable
1032	Current Measure 1 of String 4 Enable	UINT16	RW	1	2	1= Enabe, 2 = Disable
1033	Current Measure 2 of String 4 Enable	UINT16	RW	1	2	1= Enabe, 2 = Disable
1034	Current Measure 3 of String 4 Enable	UINT16	RW	1	2	1= Enabe, 2 = Disable
1035	Current Measure 4 of String 4 Enable	UINT16	RW	1	2	1= Enabe, 2 = Disable
1036	Current Measure 5 of String 4 Enable	UINT16	RW	1	2	1= Enabe, 2 = Disable
1037	Current Measure 6 of String 4 Enable	UINT16	RW	1	2	1= Enabe, 2 = Disable
1038	Current Measure 7 of String 4 Enable	UINT16	RW	1	2	1= Enabe, 2 = Disable
1039	Current Measure 8 of String 4 Enable	UINT16	RW	1	2	1= Enabe, 2 = Disable
1040	Current Measure 1 of String 5 Enable	UINT16	RW	1	2	1= Enabe, 2 = Disable
1041	Current Measure 2 of String 5 Enable	UINT16	RW	1	2	1= Enabe, 2 = Disable

1042	Current Measure 3 of String 5 Enable	UINT16	RW	1	2	1= Enabe, 2 = Disable
1043	Current Measure 4 of String 5 Enable	UINT16	RW	1	2	1= Enabe, 2 = Disable
1044	Current Measure 5 of String 5 Enable	UINT16	RW	1	2	1= Enabe, 2 = Disable
1045	Current Measure 6 of String 5 Enable	UINT16	RW	1	2	1= Enabe, 2 = Disable
1046	Current Measure 7 of String 5 Enable	UINT16	RW	1	2	1= Enabe, 2 = Disable
1047	Current Measure 8 of String 5 Enable	UINT16	RW	1	2	1= Enabe, 2 = Disable
1048	Current Measure 1 of String 6 Enable	UINT16	RW	1	2	1= Enabe, 2 = Disable
1049	Current Measure 2 of String 6 Enable	UINT16	RW	1	2	1= Enabe, 2 = Disable
1050	Current Measure 3 of String 6 Enable	UINT16	RW	1	2	1= Enabe, 2 = Disable
1051	Current Measure 4 of String 6 Enable	UINT16	RW	1	2	1= Enabe, 2 = Disable
1052	Current Measure 5 of String 6 Enable	UINT16	RW	1	2	1= Enabe, 2 = Disable
1053	Current Measure 6 of String 6 Enable	UINT16	RW	1	2	1= Enabe, 2 = Disable
1054	Current Measure 7 of String 6 Enable	UINT16	RW	1	2	1= Enabe, 2 = Disable
1055	Current Measure 8 of String 6 Enable	UINT16	RW	1	2	1= Enabe, 2 = Disable
1056	Current Measure 1 of String 7 Enable	UINT16	RW	1	2	1= Enabe, 2 = Disable
1057	Current Measure 2 of String 7 Enable	UINT16	RW	1	2	1= Enabe, 2 = Disable
1058	Current Measure 3 of String 7 Enable	UINT16	RW	1	2	1= Enabe, 2 = Disable
1059	Current Measure 4 of String 7 Enable	UINT16	RW	1	2	1= Enabe, 2 = Disable
1060	Current Measure 5 of String 7 Enable	UINT16	RW	1	2	1= Enabe, 2 = Disable
1061	Current Measure 6 of String 7 Enable	UINT16	RW	1	2	1= Enabe, 2 = Disable
1062	Current Measure 7 of String 7 Enable	UINT16	RW	1	2	1= Enabe, 2 = Disable
1063	Current Measure 8 of String 7 Enable	UINT16	RW	1	2	1= Enabe, 2 = Disable
1064	Current Measure 1 of String 8 Enable	UINT16	RW	1	2	1= Enabe, 2 = Disable
1065	Current Measure 2 of String 8 Enable	UINT16	RW	1	2	1= Enabe, 2 = Disable
1066	Current Measure 3 of String 8 Enable	UINT16	RW	1	2	1= Enabe, 2 = Disable
1067	Current Measure 4 of String 8 Enable	UINT16	RW	1	2	1= Enabe, 2 = Disable
1068	Current Measure 5 of String 8 Enable	UINT16	RW	1	2	1= Enabe, 2 = Disable
1069	Current Measure 6 of String 8 Enable	UINT16	RW	1	2	1= Enabe, 2 = Disable
1070	Current Measure 7 of String 8 Enable	UINT16	RW	1	2	1= Enabe, 2 = Disable
1071	Current Measure 8 of String 8 Enable	UINT16	RW	1	2	1= Enabe, 2 = Disable

3.3.4 REGISTROS DE EXPLOTACION - ALARMAS ACTIVA

Código de función = 0x03 (0x06 - 0x10)

ADDRESS	DESCRIPTION	TYPE	R/W	UNITS
2000	Alarms Present	UINT16	R	
2001	Alarm Index	UINT16	RW	
2002	Alarm Condition	ENUM	R	1=active, 2=inactive, 3=recognized, 4=blocked
2003	Alarm Code (see alarm code table)	UINT16	R	
2004	Alarm Time (seconds since Jan 1 1970)	UINT32	R	

3.3.5 REGISTROS DE EXPLOTACION - HISTORICO

Código de función = 0x03 (0x06 - 0x10)

ADDRESS	DESCRIPTION	TYPE	R/W	UNITS
3000	Total Entries	UINT16	R	
3001	Alarm Index	UINT16	RW	
3002	Alarm Condition	ENUM	R	1=active, 2=inactive, 3=recognized, 4=blocked
3003	Alarm Code (see alarm code table)	UINT16	R	
3004	Alarm Time (seconds since Jan 1 1970)	UINT32	R	

NOTA: UNIT32: FIRST WORD = Low Nibble, SECOND WORD = High Nibble

3.4 FUNCIONALIDAD DE LAS ALARMAS E HISTORICO

“Alarmas Presentes” y “Entradas Totales” indican el número de registros de alarmas e histórico de alarmas respectivamente.

Una operación de escritura en “índice de alarmas” para seleccionar el registro deseado y para leer en “condición de alarma”, “código de alarma” y “Tiempo alarma”.

Adicionalmente una operación de lectura en “índice de alarma” incrementa su valor en 1.

3.5 CODIGO DE ALARMAS

CODE	DESCRIPTION	DEFAULT SEVERITY	NOTES
00	System Start	MINOR	
01	Password Change	MINOR	
10	Minor Insulation Failure	SERIOUS	
40	Serious Insulation Failure	SERIOUS	
49	AC Overvoltage	SERIOUS	
50	AC Undervoltage	SERIOUS	
52	Grid Frequency Error	SERIOUS	
71	Emergency Stop	SERIOUS	
70	DC Shortcircuit	SEVERE	
11	Chopper High Temperature	MINOR	
12	Inverter High Temperature	MINOR	
41	Thermostat Trigger	SERIOUS	
13	Cabinet Hig Temperature	SERIOUS	
14	Fan Failure	MINOR	
43	DC Contactor Failure	SERIOUS	
72	Open Door	SEVERE	
45	Driver Failure	SERIOUS	
44	Communication Error with DSP unit	SERIOUS	
15	Communication Error with Measures unit	MINOR	
48	DC Overvoltage	SERIOUS	
54	Reverse DC Polarity	SERIOUS	
46	Preload Failure	SERIOUS	
51	Islanding	SERIOUS	
47	Inverter Bus Voltage Error	SERIOUS	
53	Inverter Power Supply Error	SERIOUS	
17	DC Measure Contactor Error	MINOR	

73	Main Switch Disconnected	SEVERE	
18	DC Overvoltage Protection	MINOR	
19	AC Overvoltage Protection	MINOR	
30	External Alarm	PERSISTENT	
16	Communication Error with Irradiance unit	MINOR	
74	Inverter Persistent Error	SEVERE	
75	Inverter Bus Discharge Error	SERIOUS	
80	Strings Current Measures Comm. Error	MINOR	
81	Strings Protections Comm. Error	MINOR	
82	Strings Overload Circuit Breaker	MINOR	
83	Strings Overvoltage Protection	MINOR	
84	String Current 1 under limit	MINOR	
85	String Current 2 under limit	MINOR	
86	String Current 3 under limit	MINOR	
87	String Current 4 under limit	MINOR	
88	String Current 5 under limit	MINOR	
89	String Current 6 under limit	MINOR	
90	String Current 7 under limit	MINOR	
91	String Current 8 under limit	MINOR	
26	Leak Error	SERIOUS	
25	Persistent Leak Error	SEVERE	
55	Synchronism Error	MINOR	
56	Brake Error	SERIOUS	

4 NORMATIVA

Los equipos ZIGOR SOLAR CTR3 de este manual cumplen las directivas indicadas a continuación:

- Directiva de EMC 2004/108/CE y posteriores enmiendas.
  - UNE-EN 61000-6-2 (2006), Compatibilidad electromagnética: Norma de Inmunidad.
  - UNE-EN 61000-6-4 (2007), Compatibilidad electromagnética: Norma Emisión.
- Directiva de Baja Tensión 2006/95/CE y posteriores enmiendas.
  - IEC 62109-1, Seguridad de los convertidores de potencia utilizados en sistema de potencia fotovoltaicos. Parte 1: Requisitos generales.
  - IEC 62109-2, Seguridad de los convertidores de potencia utilizados en sistemas de potencia fotovoltaicos. Parte 2: Requisitos particulares para inversores.

Los equipos ZIGOR SOLAR de este manual cumplen las normativas indicadas a continuación:

- IEC 62116 (2008), *"Test procedure of islanding prevention measures for utility-interconnected photovoltaic inverters"*

- España:
  - RD 1699/2011, Conexión a red de instalaciones de producción de energía eléctrica de pequeña potencia.
  - RD 444/1994, Procedimientos de evaluación de la conformidad y los requisitos de protección relativos a compatibilidad electromagnética de los equipos, sistemas e instalaciones.
  - RD 154/1995, Exigencias de seguridad del material eléctrico destinado a ser utilizado en determinados límites de tensión.
  - RD 661/2007, Regulación de la actividad de producción de energía eléctrica en régimen especial.
  - Procedimiento Operativo 12.3
- Alemania:
  - B DEW GT, Techinical Guideline. Germany: testing, software validation and certification.
- Italia:
  - CEI 0-16: 2012, Regola tecnica di riferimiento per la connessione di utenti attivi e passivi alle reti at ed mt delle imprese distributrici di energia elettrica
- Gran Bretaña:
  - G83/1-1 Issue 2: 2010, recommendation for the connection of generating plant to the distribution system of licensed distribution network operators.

- Francia:
  - Decret: Arrête du 23 avril 2008 relatif aux prescriptions techniques de conception et de fonctionnement pour le raccordement à un réseau public de distribution d´électricité nen base tensión ou en moyenne tensión d´une installation de production d´énergie électrique.

La Asociación Española de Normalización y Certificación (**AENOR**), certifica que los "Sistemas de Gestión de la Calidad" y de "Gestión Ambiental" adoptados por **ZIGOR Corporación, S.A.** para el diseño, el desarrollo, la producción y el servicio postventa para equipos electrónicos de conversión de energía de corriente continua y alterna, así como protecciones electrónicas, sistemas de comunicación, aplicaciones de telegestión y proyectos llave en mano eléctricos y electrónicos, son conformes a las exigencias de las Normas Españolas **UNE-EN ISO 9001:2008** y **UNE-EN ISO 14001:2004** respectivamente.

Índice

1 PRECAUTIONS

1.1 General Precautions

For your own safety and for the sake of the equipment, before starting to operate the unit you must read and understand the instructions contained in this document.

Keep the instructions in a place accessible to everyone who works with the equipment so that they can be consulted.

Only expert and fully authorised personnel shall be allowed to handle the equipment.

Danger warnings. Watch out when working inside the unit as there may be a number of live parts. Please pay special attention to soldered parts, printed circuits, terminals, relay contacts, etc. Before opening the unit, disconnect the voltage from all the poles (both alternating and direct) and wait at least 10 minutes for the internal capacitors to discharge.

Arbitrary modifications prohibition. Modifying any of the safety elements of the unit without the express consent of ZIGOR is forbidden. Any damage caused by any modification made without ZIGOR's consent frees this company from any liability. Specifically, all repairs, soldering of printed circuit plates and the replacement of components without the express authorisation of ZIGOR are forbidden. Only ZIGOR original parts shall be utilised as spare parts

ZIGOR shall not accept any responsibility for any inadequate, negligent or incorrect installation of the equipment.

The system supplied must be used only for the purpose for which it was designed. Any other use is strictly forbidden. ZIGOR will not accept responsibility for any damage that might result from its use for any other purpose. In such cases, user shall assume exclusive responsibility for any risk. The use for which the unit was designed is defined in the documentation. The system shall be exposed only to admissible environmental conditions. These are defined in the technical details provided for the equipment.

Please follow the indications set out below to operate under conditions of complete safety:

- The System must be checked once the installation is completed by a qualified technician before being put into operation. If should these indications not be adhered to, the warranty shall be considered null and void.
- These units do not contain parts usable separately by the user.
- Do not power up the device before a technician has checked it.
- The unit does not contain elements repairable or replaceable by user. In the case of breakdown or operation problems, please contact ZIGOR.
- Do not place the ZIGOR SOLAR CTR3 near power magnets, they might cause a malfunction.
- Do not block or cover the ventilation grills in the housing.
- If you have any problems with the contents of this manual, you should ask ZIGOR for assistance.
- The ZIGOR SOLAR CTR3 is designed in accordance with current Spanish legislation. Compare these regulations with those corresponding to the country in which the unit is to be installed and with the most restrictive regulations of the electricity supplier.
- Once installed, the inverter does not need to be opened. All user controls are accessible from the exterior.
- Work inside the cabinet should be undertaken only by qualified personnel who are familiar with the safety measures to be applied and the specific technical characteristics of the unit.
- The cabinet can be opened only when the inverter's main switch, which locks the door mechanically, is switched off. This general switch disconnects the photovoltaic input power, alternating current output and auxiliary alternating current input contactors.
- debe extremar la precaución y, si existieran, abrir los seccionadores de entrada y salida del inversor, externos al mismo.

- However, even after switching off the general switch, the connecting terminals and the outside of contactors are still live. For these reason, precautions must be taken and the inlet isolating switches and inverter outlet, if any, placed outside the inverter, must be opened.
- The general switch must be opened when the system is shut down (switch in the OFF position) and when no energy is being injected into the network, although it can be opened under any conditions.
- The system is supplied with high energy storing capacitors for its operation. When the general switch is turned on their discharger comes into operation and a beep is heard. When the capacitors reach a safe voltage, the beep will stop. This operation normally will take about ten seconds until 30 seconds.
- If the system has been turned off for some time (about half an hour), when the general switch is turned on the beep may not be heard as the capacitors will have discharged by themselves.
- Even though all the safety systems are in place, before touching any working parts, you must check that they are not live.
- This system has been designed for industrial use and not for domestic-commercial use.
- If any liquid is spilt accidentally on the System, disconnect it and consult ZIGOR personnel.
- The system is ready to receive power from the photovoltaic panels. The photovoltaic field may pose a risk of electric shock or burns due to its high short circuit current.
- During assembly work, start-up or maintenance, wear goggles to avoid any damage to your eyes due to accidental electric arcing.
- The unit must be protected against rain and excess humidity and installed in a clean atmosphere, without inflammable liquids, gases or oxidising substances.

Environmental indications A number of system subassemblies may be recyclable products. In order to protect the environment, manage these in accordance with the current environmental regulations and requirements in force in each country or community. If you are in any doubt please consult the manufacturer.

The contents of this manual. The content of this manual is accurate at the time of printing. However, in order to comply with our policy of continuous improvement and development, we reserve the right to change the specifications or operation of the product or the contents of the operation manual without warning.

2 SNMP COMMUNICATION PROTOCOL

2.1 Introduction

ZIGOR SOLAR three phases solar inverters have a channel to communicate with the user; characteristic:

- RJ45 terminal
- TCP/IP
- SNMP communication

This manual describes the different MIB's are accessible by the user by means of SNMP.

All data are of direct reference to all inverters of the plant and they are only for referring.

SNMP protocol define several protocol versions, in this case is implemented the version: '2c' defined in *RFC-1901, (RFC-1908).*

Also for level of protocol, the defect port are used, 161 UDP for request of SNMP and 162 UDP for 'traps' (only for internal use).

SNMP access is restricted trough a text key or 'community'.

"user" >>> offers access, but only of reading access.

The definition of accessible variables is described in the following MIBs (see the associated files):

ZIGOR-SMI: (Structure of Management Information) defines the structure of base information.

ZIGOR-TC: (Textual Conventions) defines establish textual conventions.

ZIGOR-ALARM: defines the active alarms' structure.

ZIGOR-ALARM-LOG: defines the event log's structure.

ZIGOR-ZIGOR SOLAR: defines the status variables, parameters and IODs of the equipment's alarms.

ZIGOR-PARAMETERS: defines the parameter's structure.

From that definition can classify the next data groups:

.1.3.6.1.4.1.4576.4.6.1.1 >>> status variables

.1.3.6.1.4.1.4576.4.6.1.2 >>> parameters

.1.3.6.1.4.1.4576.4.3 >>> general parameters

.1.3.6.1.4.1.4576.4.5 >>> active alarms

.1.3.6.1.4.1.4576.4.5.1.2 >>> active alarms table

.1.3.6.1.4.1.4576.4.8 >>> event log

.1.3.6.1.4.1.4576.4.8.1.5 >>> event log table

Important:

It is important to mark that many variables of the system are used only for INTERNAL USE, and these MUST NOT NEVER MODIFY.

Also, some variables are only in particular models.

Example:

It is desired to get the value of the variable 'zigorSysName' defined in ZIGOR-PARAMETER-MIB, has the name of the system

The corresponding OID is '.1.3.6.1.4.1.4576.4.3.1.1', the request 'GetRequest' has to be done, an instant of it, this is '.1.3.6.1.4.1.4576.4.3.1.1.0'.

2.2 MIB DEFINITIONS: SMI

```
ZIGOR-SMI DEFINITIONS ::= BEGIN

IMPORTS
        MODULE-IDENTITY,
        OBJECT-IDENTITY,
        enterprises
                FROM SNMPv2-SMI;

zigor MODULE-IDENTITY
        LAST-UPDATED "201003071130Z"
        ORGANIZATION "Corporacion Zigor, S.A."
        CONTACT-INFO
                "       Corporacion Zigor, S.A.
                        Depto. I+D

                Postal: C/ Portal de Gamarra, 28
                        C.P 01013 Vitoria-Gasteiz , Alava
                        (Spain)

                Tel:    +34 (945) 214 600

                E-mail: zigor@zigor.com"
        DESCRIPTION
                "The Structure of Management Information for the
                Zigor enterprise."
        ::= { enterprises 4576 }        -- assigned by IANA

zigorProducts OBJECT-IDENTITY
        STATUS current
        DESCRIPTION
                "zigorProducts is the root OBJECT IDENTIFIER from
                which sysObjectID values are assigned.  Actual
                values are defined in ZIGOR-PRODUCTS-MIB."
        ::= { zigor 1 }

-- Note that zigor.2 is reserved

zigorMgmt OBJECT-IDENTITY
        STATUS current
        DESCRIPTION
                "zigorMgmt is the main subtree for new mib development."
        ::= { zigor 3 }

zigorExperiment  OBJECT-IDENTITY
        STATUS current
        DESCRIPTION
                "zigorExperiment provides a root object identifier
                from which experimental mibs may be temporarily
                based.  mibs are typicially based here if they
                fall in one of two categories
                1) are IETF work-in-process mibs which have not
                been assigned a permanent object identifier by
                the IANA.
                2) are zigor work-in-process which has not been
                assigned a permanent object identifier by the
                zigor assigned number authority, typicially because
                the mib is not ready for deployment.
```

```
                NOTE WELL:  support for mibs in the zigorExperiment
                subtree will be deleted when a permanent object
                identifier assignment is made."
        ::= { zigor 4 }

zigorModules OBJECT-IDENTITY
        STATUS current
        DESCRIPTION
                "zigorModules provides a root object identifier
                from which MODULE-IDENTITY values may be assigned."
        ::= { zigor 5 }

END
```

2.3 MIB DEFINITIONS: ZIGOR SOLAR

```
ZIGOR-SOLAR_CTR3-MIB DEFINITIONS ::= BEGIN

IMPORTS
        MODULE-IDENTITY,
        OBJECT-TYPE,
        OBJECT-IDENTITY,
        Integer32
                FROM SNMPv2-SMI
        TEXTUAL-CONVENTION,
        TruthValue,
        DisplayString
                FROM SNMPv2-TC
        zigorExperiment
                FROM ZIGOR-SMI
        PositiveInteger
                FROM ZIGOR-TC;

zigorSolarCTR3MIB    MODULE-IDENTITY
        LAST-UPDATED        "201003071130Z"
        ORGANIZATION        "Corporazion Zigor, S.A."
        CONTACT-INFO
                "       Corporacion Zigor, S.A.
                        Depto. I+D

                Postal: C/ Portal de Gamarra, 28
                        C.P 01013 Vitoria-Gasteiz , Alava
                        (Spain)

                Tel:    +34 (945) 214 600

                E-mail: zigor@zigor.com"
        DESCRIPTION
                "SOLAR_CTR3 MIB"
        ::= { zigorExperiment 6 }

EstadoDSP ::= TEXTUAL-CONVENTION
        STATUS      current
        DESCRIPTION
                "Type to represent the status of DSP"
        SYNTAX      INTEGER {
                off(1),
                waitLoad(2),
                waitAC(3),
```

```
                waitOn(4),
                on(5),
                waitOff(6),
                waitOpening(7),
                errorReset1(11),
                errorReset2(12),
                errorReset3(13),
                errorPreCharge(16),
                errorPwFail(18),
                errorVMin(19),
                errorVMax(20),
                errorFreq(21),
                errorIslanding(22),
                errorBusV(23),
                errorTermo(24),
                errorLeak(25),
                errorDriver(26),
                errorIDC(27)
        }

EstadoSistema ::= TEXTUAL-CONVENTION
        STATUS      current
        DESCRIPTION
                "Type to represent the status of the system"
        SYNTAX      INTEGER {
                stop(1),
                wait(2),
                start(3),
                fail(4),
                mppt(5),
                disconnected(6)
        }

CondicionArranque ::= TEXTUAL-CONVENTION
        STATUS current
        DESCRIPTION
                "Type to represent the start condition"
        SYNTAX      INTEGER {
                uPv(1),
                irradiance(2),
                solarTime(3)
        }

ZonaHorariaReactiva ::= TEXTUAL-CONVENTION
        STATUS current
        DESCRIPTION
                "Pre-defined time zones for reactive energy management"
        SYNTAX      INTEGER {
                zone1(1),
                zone2(2),
                zone3(3),
                zone4(4),
                zone5(5),
                zone6(6),
                zone7(7)
        }

EstadoModem ::= TEXTUAL-CONVENTION
        STATUS      current
        DESCRIPTION
```

```
                "Type to represent the status of the modem"
        SYNTAX      INTEGER {
                busy(1),
                withoutSIM(2),
                waitingPin(3),
                waitingPuk(4),
                ready(5),
                error(6),
                ppp(7)
        }
Architecture ::= TEXTUAL-CONVENTION
        STATUS      current
        DESCRIPTION
                "Type to represent the architecture of the system"
        SYNTAX      INTEGER {
                solarCTR3_300(1),
                solarCTR3_150(2),
                solarCTR3_100(3)
        }

zigorSolarCTR3Objects           OBJECT IDENTIFIER ::= { zigorSolarCTR3MIB 1 }

--
-- Status Variables
--
zigorSolarCTR3ObjEstado         OBJECT IDENTIFIER ::= { zigorSolarCTR3Objects 1 }

zigorSolarCTR3ObjVPv OBJECT-TYPE
        SYNTAX              INTEGER (-10000..10000)
        UNITS           "0.1V"
        MAX-ACCESS          read-only
        STATUS              current
        DESCRIPTION
                "Photovoltaic voltage"
        ::= { zigorSolarCTR3ObjEstado 1 }

zigorSolarCTR3ObjVEnt OBJECT-TYPE
        SYNTAX              INTEGER (-10000..10000)
        UNITS           "0.1V"
        MAX-ACCESS          read-only
        STATUS              current
        DESCRIPTION
                "Converter input voltage (not in use)"
        ::= { zigorSolarCTR3ObjEstado 2 }

zigorSolarCTR3ObjIEnt OBJECT-TYPE
        SYNTAX              INTEGER (-10000..10000)
        UNITS           "0.1A"
        MAX-ACCESS          read-only
        STATUS              current
        DESCRIPTION
                "Input current"
        ::= { zigorSolarCTR3ObjEstado 3 }

zigorSolarCTR3ObjFrec OBJECT-TYPE
        SYNTAX              INTEGER (0..10000)
        UNITS           "0.01Hz"
        MAX-ACCESS          read-only
        STATUS              current
        DESCRIPTION
```

```
                "Frequency"
        ::= { zigorSolarCTR3ObjEstado 4 }

zigorSolarCTR3ObjRAis OBJECT-TYPE
        SYNTAX          INTEGER (0..100000000)
        UNITS           "kOhms"
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "Insulation resistance"
        ::= { zigorSolarCTR3ObjEstado 5 }

zigorSolarCTR3ObjVRedR OBJECT-TYPE
        SYNTAX          INTEGER (0..10000)
        UNITS           "0.1V"
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "Phase R voltage"
        ::= { zigorSolarCTR3ObjEstado 6 }

zigorSolarCTR3ObjVRedS OBJECT-TYPE
        SYNTAX          INTEGER (0..10000)
        UNITS           "0.1V"
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "Phase S voltage"
        ::= { zigorSolarCTR3ObjEstado 7 }

zigorSolarCTR3ObjVRedT OBJECT-TYPE
        SYNTAX          INTEGER  (0..10000)
        UNITS           "0.1V "
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "Phase T voltage"
        ::= { zigorSolarCTR3ObjEstado 8 }

zigorSolarCTR3ObjIRedR OBJECT-TYPE
        SYNTAX          INTEGER (0..10000)
        UNITS           "0.1A"
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "Phase R AC current"
        ::= { zigorSolarCTR3ObjEstado 9 }

zigorSolarCTR3ObjIRedS OBJECT-TYPE
        SYNTAX          INTEGER (0..10000)
        UNITS           "0.1A"
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "Phase S AC current"
        ::= { zigorSolarCTR3ObjEstado 10 }

zigorSolarCTR3ObjIRedT OBJECT-TYPE
        SYNTAX          INTEGER (0..10000)
        UNITS           "0.1A"
```

```
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "Phase T AC current"
        ::= { zigorSolarCTR3ObjEstado 11 }

zigorSolarCTR3ObjPotR OBJECT-TYPE
        SYNTAX          INTEGER (-10000..10000)
        UNITS       "0.1kW"
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "Phase R active power"
        ::= { zigorSolarCTR3ObjEstado 12 }

zigorSolarCTR3ObjPotS OBJECT-TYPE
        SYNTAX          INTEGER (-10000..10000)
        UNITS       "0.1kW"
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "Phase S active power"
        ::= { zigorSolarCTR3ObjEstado 13 }

zigorSolarCTR3ObjPotT OBJECT-TYPE
        SYNTAX          INTEGER (-10000..10000)
        UNITS       "0.1kW"
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "Phase T active power"
        ::= { zigorSolarCTR3ObjEstado 14 }

zigorSolarCTR3ObjPApR OBJECT-TYPE
        SYNTAX          INTEGER (0..10000)
        UNITS       "0.1kVA"
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "Phase R aparent power"
        ::= { zigorSolarCTR3ObjEstado 15 }

zigorSolarCTR3ObjPApS OBJECT-TYPE
        SYNTAX          INTEGER (0..10000)
        UNITS       "0.1kVA"
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "Phase S aparent power"
        ::= { zigorSolarCTR3ObjEstado 16 }

zigorSolarCTR3ObjPApT OBJECT-TYPE
        SYNTAX          INTEGER (0..10000)
        UNITS       "0.1kVA"
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "Phase T aparent power"
        ::= { zigorSolarCTR3ObjEstado 17 }
```

```
zigorSolarCTR3ObjPReR OBJECT-TYPE
        SYNTAX          INTEGER (-10000..10000)
        UNITS           "0.1kVAr"
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "Phase R reactive power"
        ::= { zigorSolarCTR3ObjEstado 18 }

zigorSolarCTR3ObjPReS OBJECT-TYPE
        SYNTAX          INTEGER (-10000..10000)
        UNITS           "0.1kVAr"
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "Phase S reactive power"
        ::= { zigorSolarCTR3ObjEstado 19 }

zigorSolarCTR3ObjPReT OBJECT-TYPE
        SYNTAX          INTEGER (-10000..10000)
        UNITS           "0.1kVAr"
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "Phase T reactive power"
        ::= { zigorSolarCTR3ObjEstado 20 }

zigorSolarCTR3ObjfPotR OBJECT-TYPE
        SYNTAX          INTEGER (-1000..1000)
        UNITS           "0.001"
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "Phase R power factor"
        ::= { zigorSolarCTR3ObjEstado 21 }

zigorSolarCTR3ObjfPotS OBJECT-TYPE
        SYNTAX          INTEGER (-1000..1000)
        UNITS           "0.001"
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "Phase S power factor"
        ::= { zigorSolarCTR3ObjEstado 22 }

zigorSolarCTR3ObjfPotT OBJECT-TYPE
        SYNTAX          INTEGER (-1000..1000)
        UNITS           "0.001"
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "Phase T power factor"
        ::= { zigorSolarCTR3ObjEstado 23 }

zigorSolarCTR3ObjPot OBJECT-TYPE
        SYNTAX          INTEGER (-10000..10000)
        UNITS           "0.1kW"
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
```

```
                "Active power"
        ::= { zigorSolarCTR3ObjEstado 24 }

zigorSolarCTR3ObjPAp OBJECT-TYPE
        SYNTAX          INTEGER (0..10000)
        UNITS           "0.1kVA"
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "Aparent power"
        ::= { zigorSolarCTR3ObjEstado 25 }

zigorSolarCTR3ObjPReac OBJECT-TYPE
        SYNTAX          INTEGER (-10000..10000)
        UNITS           "0.1kVAr"
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "Reactive power"
        ::= { zigorSolarCTR3ObjEstado 26 }

zigorSolarCTR3ObjfPot OBJECT-TYPE
        SYNTAX          INTEGER (-1000..1000)
        UNITS           "0.001"
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "Power factor"
        ::= { zigorSolarCTR3ObjEstado 27 }

zigorSolarCTR3ObjEAcDSPE OBJECT-TYPE
        SYNTAX          INTEGER (-1000000000..1000000000)
        UNITS           "1kWh"
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "Energy counter by DSP"
        ::= { zigorSolarCTR3ObjEstado 28 }

zigorSolarCTR3ObjEAcDSPD OBJECT-TYPE
        SYNTAX          INTEGER (-10000..10000)
        UNITS           "0.1kWh"
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "Energy counter (decimal fraction) by DSP"
        ::= { zigorSolarCTR3ObjEstado 29 }

zigorSolarCTR3ObjEAc OBJECT-TYPE
        SYNTAX          INTEGER (-1000000000..1000000000)
        UNITS           "0.1kWh"
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "Active energy counter"
        ::= { zigorSolarCTR3ObjEstado 30 }

zigorSolarCTR3ObjEReacL OBJECT-TYPE
        SYNTAX          INTEGER (-1000000000..1000000000)
        UNITS           "0.1kVArh"
```

```
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "Inductive reactive energy counter"
        ::= { zigorSolarCTR3ObjEstado 31 }

zigorSolarCTR3ObjTArm OBJECT-TYPE
        SYNTAX          INTEGER (-40..250)
        UNITS       "degrees Celsius"
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "Cabinet temperature"
        ::= { zigorSolarCTR3ObjEstado 32 }

zigorSolarCTR3ObjTRec OBJECT-TYPE
        SYNTAX          INTEGER (-40..250)
        UNITS       "degrees Celsius"
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "Inverter heatsink temperature"
        ::= { zigorSolarCTR3ObjEstado 33 }

zigorSolarCTR3ObjTempRec OBJECT-TYPE
        SYNTAX          INTEGER (-40..250)
        UNITS       "degrees Celsius"
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "Tuning inverter heatsink temperature"
        ::= { zigorSolarCTR3ObjEstado 34 }

zigorSolarCTR3ObjTChop OBJECT-TYPE
        SYNTAX          INTEGER (-40..250)
        UNITS       "degrees Celsius"
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "Chopper heatsink temperature"
        ::= { zigorSolarCTR3ObjEstado 35 }

zigorSolarCTR3ObjTempChop OBJECT-TYPE
        SYNTAX          INTEGER (-40..250)
        UNITS       "degrees Celsius"
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "Tuning Chopper heatsink temperature"
        ::= { zigorSolarCTR3ObjEstado 36 }

zigorSolarCTR3ObjTAmb OBJECT-TYPE
        SYNTAX          INTEGER (-40..250)
        UNITS       "degrees Celsius"
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "Room temperature"
        ::= { zigorSolarCTR3ObjEstado 37 }
```

```
zigorSolarCTR3ObjTTrans OBJECT-TYPE
        SYNTAX          INTEGER (-40..250)
        UNITS           "degrees Celsius"
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "Transformer temperature"
        ::= { zigorSolarCTR3ObjEstado 38 }

zigorSolarCTR3ObjPSalMax OBJECT-TYPE
        SYNTAX          INTEGER (0..10000)
        UNITS           "0.1kW"
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "Maximun AC power"
        ::= { zigorSolarCTR3ObjEstado 39 }

zigorSolarCTR3ObjVEMinMPP OBJECT-TYPE
        SYNTAX          INTEGER (0..10000)
        UNITS           "0.1V"
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "Minimun input voltage for MPPT"
        ::= { zigorSolarCTR3ObjEstado 40 }

zigorSolarCTR3ObjIrrad OBJECT-TYPE
        SYNTAX          INTEGER (0..2000)
        UNITS           "W/m^2"
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "Irradiance"
        ::= { zigorSolarCTR3ObjEstado 41 }

zigorSolarCTR3ObjEnerHoy OBJECT-TYPE
        SYNTAX          INTEGER
        UNITS           "0.1kWh"
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "Not implemented"
        ::= { zigorSolarCTR3ObjEstado 42 }

zigorSolarCTR3ObjIrradHoy OBJECT-TYPE
        SYNTAX          INTEGER
        UNITS           "Wh/m^2"
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "Not implemented"
        ::= { zigorSolarCTR3ObjEstado 43 }

zigorSolarCTR3ObjPSalNom OBJECT-TYPE
        SYNTAX          INTEGER (0..10000)
        UNITS           "0.1kW"
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
```

```
                "Nominal output power"
        ::= { zigorSolarCTR3ObjEstado 44 }

zigorSolarCTR3ObjEstadoConv OBJECT-TYPE
        SYNTAX          EstadoDSP
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "DSP Status"
        ::= { zigorSolarCTR3ObjEstado 45 }

zigorSolarCTR3ObjEstadoSis OBJECT-TYPE
        SYNTAX          EstadoSistema
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "System Status"
        ::= { zigorSolarCTR3ObjEstado 46 }

zigorSolarCTR3ObjMarcha OBJECT-TYPE
        SYNTAX          TruthValue
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "DSP start command"
        ::= { zigorSolarCTR3ObjEstado 47 }

zigorSolarCTR3ObjParo OBJECT-TYPE
        SYNTAX          TruthValue
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "DSP stop command"
        ::= { zigorSolarCTR3ObjEstado 48 }

zigorSolarCTR3ObjRError OBJECT-TYPE
        SYNTAX          TruthValue
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "DSP error reset"
        ::= { zigorSolarCTR3ObjEstado 49 }

zigorSolarCTR3ObjBCont OBJECT-TYPE
        SYNTAX          TruthValue
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "DSP energy counter reset"
        ::= { zigorSolarCTR3ObjEstado 50 }

zigorSolarCTR3ObjFCosPhi OBJECT-TYPE
        SYNTAX          TruthValue
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "DSP CosPhi flag"
        ::= { zigorSolarCTR3ObjEstado 51 }

zigorSolarCTR3ObjFPPLL OBJECT-TYPE
```

```
        SYNTAX          TruthValue
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "DSP PLL pre-alarm flag (not in use)"
        ::= { zigorSolarCTR3ObjEstado 52 }

zigorSolarCTR3ObjFHab OBJECT-TYPE
        SYNTAX          TruthValue
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "DSP enabled flag"
        ::= { zigorSolarCTR3ObjEstado 53 }

zigorSolarCTR3ObjFLPotSal OBJECT-TYPE
        SYNTAX          TruthValue
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "DSP power limit flag"
        ::= { zigorSolarCTR3ObjEstado 54 }

zigorSolarCTR3ObjFParo OBJECT-TYPE
        SYNTAX          TruthValue
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "DSP stop flag"
        ::= { zigorSolarCTR3ObjEstado 55 }

zigorSolarCTR3ObjFPWMOn OBJECT-TYPE
        SYNTAX          TruthValue
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "DSP PWMOn flag"
        ::= { zigorSolarCTR3ObjEstado 56 }

zigorSolarCTR3ObjFVinst OBJECT-TYPE
        SYNTAX          TruthValue
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "DSP VInst alarm flag"
        ::= { zigorSolarCTR3ObjEstado 57 }

zigorSolarCTR3ObjFVRedMax OBJECT-TYPE
        SYNTAX          TruthValue
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "DSP maximum voltage alarm flag"
        ::= { zigorSolarCTR3ObjEstado 58 }

zigorSolarCTR3ObjFVRedMin OBJECT-TYPE
        SYNTAX          TruthValue
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
```

```
                "DSP minimum voltage alarm flag"
        ::= { zigorSolarCTR3ObjEstado 59 }

zigorSolarCTR3ObjFPLL OBJECT-TYPE
        SYNTAX          TruthValue
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "DSP PLL alarm flag"
        ::= { zigorSolarCTR3ObjEstado 60 }

zigorSolarCTR3ObjFPrecarga OBJECT-TYPE
        SYNTAX          TruthValue
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "DSP preload error flag"
        ::= { zigorSolarCTR3ObjEstado 61 }

zigorSolarCTR3ObjFBus OBJECT-TYPE
        SYNTAX          TruthValue
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "DSP bus voltage error flag (not in use)"
        ::= { zigorSolarCTR3ObjEstado 62 }

zigorSolarCTR3ObjFTermos OBJECT-TYPE
        SYNTAX          TruthValue
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "DSP thermostat error flag"
        ::= { zigorSolarCTR3ObjEstado 63 }

zigorSolarCTR3ObjFDriver OBJECT-TYPE
        SYNTAX          TruthValue
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "DSP driver error flag"
        ::= { zigorSolarCTR3ObjEstado 64 }

zigorSolarCTR3ObjFPwFail OBJECT-TYPE
        SYNTAX          TruthValue
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "DSP powerfail error flag"
        ::= { zigorSolarCTR3ObjEstado 65 }

zigorSolarCTR3ObjContDC OBJECT-TYPE
        SYNTAX          TruthValue
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "DC contactor status"
        ::= { zigorSolarCTR3ObjEstado 66 }

zigorSolarCTR3ObjContAC OBJECT-TYPE
```

```
        SYNTAX          TruthValue
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "Status of AC contactor"
        ::= { zigorSolarCTR3ObjEstado 67 }

zigorSolarCTR3ObjProtDC OBJECT-TYPE
        SYNTAX          TruthValue
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "DC Powertrap"
        ::= { zigorSolarCTR3ObjEstado 68 }

zigorSolarCTR3ObjProtAC OBJECT-TYPE
        SYNTAX          TruthValue
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "AC Powertrap"
        ::= { zigorSolarCTR3ObjEstado 69 }

zigorSolarCTR3ObjPuerta OBJECT-TYPE
        SYNTAX          TruthValue
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "Open Door"
        ::= { zigorSolarCTR3ObjEstado 70 }

zigorSolarCTR3ObjContMedDC OBJECT-TYPE
        SYNTAX          TruthValue
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "DC measure contactor"
        ::= { zigorSolarCTR3ObjEstado 71 }

zigorSolarCTR3ObjIntGeneral OBJECT-TYPE
        SYNTAX          TruthValue
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "Main switch"
        ::= { zigorSolarCTR3ObjEstado 72 }

zigorSolarCTR3ObjAlarmaExt OBJECT-TYPE
        SYNTAX          TruthValue
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "External alarm"
        ::= { zigorSolarCTR3ObjEstado 73 }

zigorSolarCTR3ObjIntOnOff OBJECT-TYPE
        SYNTAX          TruthValue
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
```

```
                "start-stop switch"
        ::= { zigorSolarCTR3ObjEstado 74 }

zigorSolarCTR3ObjEDig1 OBJECT-TYPE
        SYNTAX          TruthValue
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "Reserved digital input"
        ::= { zigorSolarCTR3ObjEstado 75 }

zigorSolarCTR3ObjContador0 OBJECT-TYPE
        SYNTAX          INTEGER (0..1000000)
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "Counter 0"
        ::= { zigorSolarCTR3ObjEstado 76 }

zigorSolarCTR3ObjContador1 OBJECT-TYPE
        SYNTAX          INTEGER (0..1000000)
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "Counter 1"
        ::= { zigorSolarCTR3ObjEstado 77 }

zigorSolarCTR3ObjVentCaseta OBJECT-TYPE
        SYNTAX          TruthValue
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "Room fan command"
        ::= { zigorSolarCTR3ObjEstado 78 }

zigorSolarCTR3ObjVentArmario OBJECT-TYPE
        SYNTAX          TruthValue
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "Cabinet fan command"
        ::= { zigorSolarCTR3ObjEstado 79 }

zigorSolarCTR3ObjVentTransfo OBJECT-TYPE
        SYNTAX          TruthValue
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "Transformator fan command"
        ::= { zigorSolarCTR3ObjEstado 80 }

zigorSolarCTR3ObjSDig1 OBJECT-TYPE
        SYNTAX          TruthValue
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "Emergency stop relay"
        ::= { zigorSolarCTR3ObjEstado 81 }

zigorSolarCTR3ObjSDig2 OBJECT-TYPE
```

```
        SYNTAX          TruthValue
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "Reserved command 2"
        ::= { zigorSolarCTR3ObjEstado 82 }

zigorSolarCTR3ObjSDig3 OBJECT-TYPE
        SYNTAX          TruthValue
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "System start relay"
        ::= { zigorSolarCTR3ObjEstado 83 }

zigorSolarCTR3ObjSDig4 OBJECT-TYPE
        SYNTAX          TruthValue
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "System fail relay"
        ::= { zigorSolarCTR3ObjEstado 84 }

zigorSolarCTR3ObjSDig5 OBJECT-TYPE
        SYNTAX          TruthValue
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "Reserved command 5"
        ::= { zigorSolarCTR3ObjEstado 85 }

zigorSolarCTR3ObjCComDSP OBJECT-TYPE
        SYNTAX          TruthValue
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "DSP communication error"
        ::= { zigorSolarCTR3ObjEstado 86 }

zigorSolarCTR3ObjCComCInt OBJECT-TYPE
        SYNTAX          TruthValue
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "Measures communication error"
        ::= { zigorSolarCTR3ObjEstado 87 }

zigorSolarCTR3ObjCComICP OBJECT-TYPE
        SYNTAX          TruthValue
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "Irradiance communication error"
        ::= { zigorSolarCTR3ObjEstado 88 }

zigorSolarCTR3ObjESistema OBJECT-TYPE
        SYNTAX          TruthValue
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
```

```
                "System error"
        ::= { zigorSolarCTR3ObjEstado 89 }

zigorSolarCTR3ObjAjusteEAc OBJECT-TYPE
        SYNTAX          INTEGER (-99999999..99999999)
        UNITS           "0.1kW"
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "Active energy setting"
        ::= { zigorSolarCTR3ObjEstado 90 }

zigorSolarCTR3ObjAjusteEReacL OBJECT-TYPE
        SYNTAX          INTEGER (-99999999..99999999)
        UNITS           "0.1kVArh"
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "Inductive reactive energy setting"
        ::= { zigorSolarCTR3ObjEstado 91 }

zigorSolarCTR3ObjAjusteEReacC OBJECT-TYPE
        SYNTAX          INTEGER (-99999999..99999999)
        UNITS           "0.1kVArh"
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "Capacitive reactive energy setting"
        ::= { zigorSolarCTR3ObjEstado 92 }

zigorSolarCTR3ObjVAis OBJECT-TYPE
        SYNTAX          INTEGER (-10000..10000)
        UNITS           "0.01V"
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "Insulation voltage"
        ::= { zigorSolarCTR3ObjEstado 93 }

zigorSolarCTR3ObjEReacC OBJECT-TYPE
        SYNTAX          INTEGER (-1000000000..1000000000)
        UNITS           "0.1kVArh"
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "Capacitive reactive energy counter"
        ::= { zigorSolarCTR3ObjEstado 94 }

zigorSolarCTR3ObjCosPhi OBJECT-TYPE
        SYNTAX          INTEGER (-10000..10000)
        UNITS           "0.001"
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "Q/Pnominal Factor"
        ::= { zigorSolarCTR3ObjEstado 95 }

zigorSolarCTR3ObjVRedNomV OBJECT-TYPE
        SYNTAX          INTEGER (0..10000)
        UNITS           "0.1V"
```

```
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "Nominal AC voltage"
        ::= { zigorSolarCTR3ObjEstado 96 }

zigorSolarCTR3ObjVRedMin OBJECT-TYPE
        SYNTAX          INTEGER (0..10000)
        UNITS       "0.1V"
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "Minimum AC voltage on Connection"
        ::= { zigorSolarCTR3ObjEstado 97 }

zigorSolarCTR3ObjVRedMax OBJECT-TYPE
        SYNTAX          INTEGER (0..10000)
        UNITS       "0.1V"
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "Maximun AC voltage on Connection"
        ::= { zigorSolarCTR3ObjEstado 98 }

zigorSolarCTR3ObjFrecNomHz OBJECT-TYPE
        SYNTAX          INTEGER (0..10000)
        UNITS       "0.01 Hz"
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "Nominal frequency"
        ::= { zigorSolarCTR3ObjEstado 99 }

zigorSolarCTR3ObjFrecMin OBJECT-TYPE
        SYNTAX          INTEGER (0..10000)
        UNITS       "0.01Hz"
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "Minimum frequency on Connection"
        ::= { zigorSolarCTR3ObjEstado 100 }

zigorSolarCTR3ObjFrecMax OBJECT-TYPE
        SYNTAX          INTEGER (0..10000)
        UNITS       "0.01Hz"
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "Maximum frequency on Connection"
        ::= { zigorSolarCTR3ObjEstado 101 }

zigorSolarCTR3ObjHoraOrto OBJECT-TYPE
        SYNTAX          INTEGER (0..100000)
        UNITS       "seconds"
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "Sunrise time"
        ::= { zigorSolarCTR3ObjEstado 102 }
```

```
zigorSolarCTR3ObjHoraOcaso OBJECT-TYPE
        SYNTAX          INTEGER (0..100000)
        UNITS           "seconds"
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "Sunset time"
        ::= { zigorSolarCTR3ObjEstado 103 }

zigorSolarCTR3ObjOffsetEAc OBJECT-TYPE
        SYNTAX          INTEGER (-99999999..99999999)
        UNITS           "0.1kW"
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "Active energy offset setting"
        ::= { zigorSolarCTR3ObjEstado 104 }

zigorSolarCTR3ObjDerating OBJECT-TYPE
        SYNTAX          INTEGER (0..1150)
        UNITS           "0.001"
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "Derating"
        ::= { zigorSolarCTR3ObjEstado 105 }

zigorSolarCTR3ObjModemStatus OBJECT-TYPE
        SYNTAX          EstadoModem
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "Status of the modem"
        ::= { zigorSolarCTR3ObjEstado 106 }

zigorSolarCTR3ObjStringsImedTotal OBJECT-TYPE
        SYNTAX    Integer32
        UNITS     "0.001A"
        MAX-ACCESS read-only
        STATUS    current
        DESCRIPTION
                "Mean Current of total Strings."
        ::= { zigorSolarCTR3ObjEstado 107 }

zigorSolarCTR3ObjStringsPresent OBJECT-TYPE
        SYNTAX    Integer32
        MAX-ACCESS read-only
        STATUS    current
        DESCRIPTION
                "Number of Strings present (same as the parameter)."
        ::= { zigorSolarCTR3ObjEstado 108 }

zigorSolarCTR3ObjStringsTable OBJECT-TYPE
        SYNTAX    SEQUENCE OF ZigorSolarCTR3ObjStringsEntry
        MAX-ACCESS not-accessible
        STATUS    current
        DESCRIPTION
          "Table of Strings.  The number of entries
          is given by the value of zigorSolarCTR3ObjStringsPresent."
        ::= { zigorSolarCTR3ObjEstado 109 }
```

```
zigorSolarCTR3ObjStringsEntry OBJECT-TYPE
        SYNTAX     ZigorSolarCTR3ObjStringsEntry
        MAX-ACCESS not-accessible
        STATUS     current
        DESCRIPTION
                "An entry containing information applicable to a
           particular String status."
        INDEX { zigorSolarCTR3ObjStringsId }
        ::= { zigorSolarCTR3ObjStringsTable 1 }

ZigorSolarCTR3ObjStringsEntry ::= SEQUENCE {
        zigorSolarCTR3ObjStringsId          PositiveInteger,
        zigorSolarCTR3ObjStringsAinEComTruthValue,
        zigorSolarCTR3ObjStringsDinEComTruthValue,
        zigorSolarCTR3ObjStringsImed       Integer32,
}

zigorSolarCTR3ObjStringsId OBJECT-TYPE
        SYNTAX              PositiveInteger
        MAX-ACCESS          not-accessible
        STATUS              current
        DESCRIPTION
                "A unique identifier for a String status.  This
                value must remain constant."
        ::= { zigorSolarCTR3ObjStringsEntry 1 }

zigorSolarCTR3ObjStringsAinECom OBJECT-TYPE
        SYNTAX              TruthValue
        MAX-ACCESS          read-only
        STATUS              current
        DESCRIPTION
                "Communication error of String analog inputs (current measures)."
        ::= { zigorSolarCTR3ObjStringsEntry 2 }

zigorSolarCTR3ObjStringsDinECom OBJECT-TYPE
        SYNTAX              TruthValue
        MAX-ACCESS          read-only
        STATUS              current
        DESCRIPTION
                "Communication error of String digital inputs (protections)."
        ::= { zigorSolarCTR3ObjStringsEntry 3 }

zigorSolarCTR3ObjStringsImed OBJECT-TYPE
        SYNTAX              Integer32
        UNITS           "0.001A"
        MAX-ACCESS          read-only
        STATUS              current
        DESCRIPTION
                "Mean Current in String."
        ::= { zigorSolarCTR3ObjStringsEntry 4 }

zigorSolarCTR3ObjStringsDinPresent OBJECT-TYPE
        SYNTAX     Integer32
        MAX-ACCESS read-only
        STATUS     current
        DESCRIPTION
                "Number of Strings digital inputs present (same as the parameter)."
        ::= { zigorSolarCTR3ObjEstado 110 }
```

```
zigorSolarCTR3ObjStringsDinTable OBJECT-TYPE
        SYNTAX     SEQUENCE OF ZigorSolarCTR3ObjStringsDinEntry
        MAX-ACCESS not-accessible
        STATUS     current
        DESCRIPTION
          "Table for digital inputs.  The number of entries
          is given by the value of zigorSolarCTR3ObjStringsDinPresent."
        ::= { zigorSolarCTR3ObjEstado 111 }

zigorSolarCTR3ObjStringsDinEntry OBJECT-TYPE
        SYNTAX     ZigorSolarCTR3ObjStringsDinEntry
        MAX-ACCESS not-accessible
        STATUS     current
        DESCRIPTION
                "An entry containing information applicable to a
          particular digital input."
        INDEX { zigorSolarCTR3ObjStringsDinId }
        ::= { zigorSolarCTR3ObjStringsDinTable 1 }

ZigorSolarCTR3ObjStringsDinEntry ::= SEQUENCE {
        zigorSolarCTR3ObjStringsDinId       PositiveInteger,
        zigorSolarCTR3ObjStringsDinValue TruthValue,
}

zigorSolarCTR3ObjStringsDinId OBJECT-TYPE
        SYNTAX              PositiveInteger
        MAX-ACCESS          not-accessible
        STATUS              current
        DESCRIPTION
                "A unique identifier for a digital input.  This
                value must remain constant."
        ::= { zigorSolarCTR3ObjStringsDinEntry 1 }

zigorSolarCTR3ObjStringsDinValue OBJECT-TYPE
        SYNTAX              TruthValue
        MAX-ACCESS          read-only
        STATUS              current
        DESCRIPTION
                "Digital input value (protection)."
        ::= { zigorSolarCTR3ObjStringsDinEntry 2 }

zigorSolarCTR3ObjStringsAinPresent OBJECT-TYPE
        SYNTAX     Integer32
        MAX-ACCESS read-only
        STATUS     current
        DESCRIPTION
                "Number of Strings analog inputs present (same as the parameter)."
        ::= { zigorSolarCTR3ObjEstado 112}

zigorSolarCTR3ObjStringsAinTable OBJECT-TYPE
        SYNTAX     SEQUENCE OF ZigorSolarCTR3ObjStringsAinEntry
        MAX-ACCESS not-accessible
        STATUS     current
        DESCRIPTION
          "Table for analog inputs.  The number of entries
          is given by the value of zigorSolarCTR3ObjStringsAinPresent."
        ::= { zigorSolarCTR3ObjEstado 113 }

zigorSolarCTR3ObjStringsAinEntry OBJECT-TYPE
        SYNTAX     ZigorSolarCTR3ObjStringsAinEntry
```

```
        MAX-ACCESS not-accessible
        STATUS     current
        DESCRIPTION
                "An entry containing information applicable to a
              particular analog input."
        INDEX { zigorSolarCTR3ObjStringsAinId }
        ::= { zigorSolarCTR3ObjStringsAinTable 1 }

ZigorSolarCTR3ObjStringsAinEntry ::= SEQUENCE {
        zigorSolarCTR3ObjStringsAinId       PositiveInteger,
        zigorSolarCTR3ObjStringsAinValue Integer32,
        zigorSolarCTR3ObjStringsAinAlarm TruthValue,
}

zigorSolarCTR3ObjStringsAinId OBJECT-TYPE
        SYNTAX              PositiveInteger
        MAX-ACCESS          not-accessible
        STATUS              current
        DESCRIPTION
                "A unique identifier for an analog input.  This
                value must remain constant."
        ::= { zigorSolarCTR3ObjStringsAinEntry 1 }

zigorSolarCTR3ObjStringsAinValue OBJECT-TYPE
        SYNTAX              Integer32
        UNITS           "0.001A"
        MAX-ACCESS          read-only
        STATUS              current
        DESCRIPTION
                "Analog input value (current)."
        ::= { zigorSolarCTR3ObjStringsAinEntry 2 }

zigorSolarCTR3ObjStringsAinAlarm OBJECT-TYPE
        SYNTAX              TruthValue
        MAX-ACCESS          read-only
        STATUS              current
        DESCRIPTION
                "Alarm condition for an analog input."
        ::= { zigorSolarCTR3ObjStringsAinEntry 3 }

zigorSolarCTR3ObjIfugaDCFV OBJECT-TYPE
        SYNTAX              INTEGER (-100000..100000)
        UNITS           "0.1 mA"
        MAX-ACCESS          read-only
        STATUS              current
        DESCRIPTION
                "DC photovoltaic leakage current (only in TL model)"
        ::= { zigorSolarCTR3ObjEstado 114 }

zigorSolarCTR3ObjIfugaACFV OBJECT-TYPE
        SYNTAX              INTEGER (0..100000)
        UNITS           "0.1 mA"
        MAX-ACCESS          read-only
        STATUS              current
        DESCRIPTION
                "AC photovoltaic leakage current (only in TL model)"
        ::= { zigorSolarCTR3ObjEstado 115 }

zigorSolarCTR3ObjIfugaAC OBJECT-TYPE
        SYNTAX              INTEGER (0..100000)
```

```
        UNITS           "0.1 mA"
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "AC leakage current (only in TL model)"
        ::= { zigorSolarCTR3ObjEstado 116 }

zigorSolarCTR3ObjFfugaDCFV OBJECT-TYPE
        SYNTAX          TruthValue
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "DC photovoltaic leakage alarm flag (only in TL model)"
        ::= { zigorSolarCTR3ObjEstado 117 }

zigorSolarCTR3ObjFfugaDCFVInst OBJECT-TYPE
        SYNTAX          TruthValue
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "DC inst. photovoltaic leakage alarm flag (only in TL model)"
        ::= { zigorSolarCTR3ObjEstado 118 }

zigorSolarCTR3ObjFfugaFV OBJECT-TYPE
        SYNTAX          TruthValue
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "DC-AC photovoltaic leakage alarm flag (only in TL model)"
        ::= { zigorSolarCTR3ObjEstado 119 }

zigorSolarCTR3ObjFfugaAC OBJECT-TYPE
        SYNTAX          TruthValue
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "AC leakage alarm flag (only in TL model)"
        ::= { zigorSolarCTR3ObjEstado 120 }

zigorSolarCTR3ObjFFuga OBJECT-TYPE
        SYNTAX          TruthValue
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "DSP leakage error flag (only in TL model)"
        ::= { zigorSolarCTR3ObjEstado 121 }

zigorSolarCTR3ObjFAlarmaRed OBJECT-TYPE
        SYNTAX          TruthValue
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "DSP grid alarm flag (not in use)"
        ::= { zigorSolarCTR3ObjEstado 122 }

zigorSolarCTR3ObjErrorComFugas OBJECT-TYPE
        SYNTAX          TruthValue
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
```

```
                "Leakage communication error with leakage mcu (only in TL model)"
        ::= { zigorSolarCTR3ObjEstado 123 }

zigorSolarCTR3ObjAisDisp OBJECT-TYPE
        SYNTAX          TruthValue
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "Insulation availability (only in TL model)"
        ::= { zigorSolarCTR3ObjEstado 124 }

zigorSolarCTR3ObjRAisAux OBJECT-TYPE
        SYNTAX          INTEGER (0..100000000)
        UNITS           "kOhms"
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "Auxiliar insulation resistance (only in TL model)"
        ::= { zigorSolarCTR3ObjEstado 125 }

zigorSolarCTR3ObjDeratingInterno OBJECT-TYPE
        SYNTAX          INTEGER (0..1150)
        UNITS           "0.001"
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "Internal derating"
        ::= { zigorSolarCTR3ObjEstado 126 }

zigorSolarCTR3ObjFPWMChopOn OBJECT-TYPE
        SYNTAX          TruthValue
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "DSP PWMChopOn flag"
        ::= { zigorSolarCTR3ObjEstado 127 }

zigorSolarCTR3ObjFHabHueco OBJECT-TYPE
        SYNTAX          TruthValue
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "DSP Hole Enable flag"
        ::= { zigorSolarCTR3ObjEstado 128 }

zigorSolarCTR3ObjFHueco OBJECT-TYPE
        SYNTAX          TruthValue
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "DSP Hole flag"
        ::= { zigorSolarCTR3ObjEstado 129 }

zigorSolarCTR3ObjFAlarmaDesc OBJECT-TYPE
        SYNTAX          TruthValue
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "DSP Alarm Discharge flag"
        ::= { zigorSolarCTR3ObjEstado 130 }
```

```
zigorSolarCTR3ObjFLimitISal OBJECT-TYPE
        SYNTAX          TruthValue
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "DSP Output Current Limit flag"
        ::= { zigorSolarCTR3ObjEstado 131 }

zigorSolarCTR3ObjFReleDC OBJECT-TYPE
        SYNTAX          TruthValue
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "DSP DC Relay flag"
        ::= { zigorSolarCTR3ObjEstado 132 }

zigorSolarCTR3ObjFReleAC OBJECT-TYPE
        SYNTAX          TruthValue
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "DSP AC Relay flag"
        ::= { zigorSolarCTR3ObjEstado 133 }

zigorSolarCTR3ObjVersionDSPAno OBJECT-TYPE
        SYNTAX          Integer32
        UNITS           ""
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "Internal use only"
        ::= { zigorSolarCTR3ObjEstado 134 }

zigorSolarCTR3ObjVersionDSPMesDia OBJECT-TYPE
        SYNTAX          Integer32
        UNITS           ""
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "Internal use only"
        ::= { zigorSolarCTR3ObjEstado 135 }

zigorSolarCTR3ObjVBus OBJECT-TYPE
        SYNTAX          INTEGER
        UNITS           "0.1 V"
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "Bus Voltage"
        ::= { zigorSolarCTR3ObjEstado 136 }

zigorSolarCTR3ObjFDescarga OBJECT-TYPE
        SYNTAX          TruthValue
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "DSP Discharge flag"
        ::= { zigorSolarCTR3ObjEstado 137 }
```

```
zigorSolarCTR3ObjFFrec OBJECT-TYPE
        SYNTAX          TruthValue
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "DSP Frec flag"
        ::= { zigorSolarCTR3ObjEstado 138 }

zigorSolarCTR3ObjPIn OBJECT-TYPE
        SYNTAX          INTEGER (-10000..10000)
        UNITS       "0.1kW"
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "Input power"
        ::= { zigorSolarCTR3ObjEstado 139 }

zigorSolarCTR3ObjNormaRed OBJECT-TYPE
        SYNTAX          DisplayString
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "Current Grid Code"
        ::= { zigorSolarCTR3ObjEstado 140 }

zigorSolarCTR3ObjVRedMinDis OBJECT-TYPE
        SYNTAX          INTEGER (0..10000)
        UNITS       "0.1V"
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "Minimum AC voltage on Disconnection"
        ::= { zigorSolarCTR3ObjEstado 141 }

zigorSolarCTR3ObjVRedMaxDis OBJECT-TYPE
        SYNTAX          INTEGER (0..10000)
        UNITS       "0.1V"
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "Maximun AC voltage on Disconnection"
        ::= { zigorSolarCTR3ObjEstado 142 }

zigorSolarCTR3ObjFrecMinDis OBJECT-TYPE
        SYNTAX          INTEGER (0..10000)
        UNITS       "0.01Hz"
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "Minimum frequency on Disconnection"
        ::= { zigorSolarCTR3ObjEstado 143 }

zigorSolarCTR3ObjFrecMaxDis OBJECT-TYPE
        SYNTAX          INTEGER (0..10000)
        UNITS       "0.01Hz"
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "Maximum frequency on Disconnection"
        ::= { zigorSolarCTR3ObjEstado 144 }
```

```
zigorSolarCTR3ObjFRetardo OBJECT-TYPE
        SYNTAX          TruthValue
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "DSP Delay Flag"
        ::= { zigorSolarCTR3ObjEstado 145 }

zigorSolarCTR3ObjDescargar OBJECT-TYPE
        SYNTAX          TruthValue
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "DSP discharge command"
        ::= { zigorSolarCTR3ObjEstado 146 }

--
-- System Parameters
--
zigorSolarCTR3ObjParams         OBJECT IDENTIFIER ::= { zigorSolarCTR3Objects 2 }

zigorSolarCTR3ParamVRedNom OBJECT-TYPE
        SYNTAX          INTEGER
        UNITS           "0.1 V"
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "Nominal grid voltage"
        ::= { zigorSolarCTR3ObjParams 1 }

zigorSolarCTR3ParamICaidaRed OBJECT-TYPE
        SYNTAX          INTEGER
        UNITS           "0.001"
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "Grid drop index on Connection"
        ::= { zigorSolarCTR3ObjParams 2 }

zigorSolarCTR3ParamISubRed OBJECT-TYPE
        SYNTAX          INTEGER
        UNITS           "0.001"
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "Grid rise index on Connection"
        ::= { zigorSolarCTR3ObjParams 3 }

zigorSolarCTR3ParamFrecNom OBJECT-TYPE
        SYNTAX          INTEGER
        UNITS           "0.01 Hz"
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "Nominal frequency"
        ::= { zigorSolarCTR3ObjParams 4 }

zigorSolarCTR3ParamCaidaFreq OBJECT-TYPE
        SYNTAX          INTEGER
```

```
        UNITS           "0.01 Hz"
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "Maximum frequency drop on Connection"
        ::= { zigorSolarCTR3ObjParams 5 }

zigorSolarCTR3ParamUPv OBJECT-TYPE
        SYNTAX          INTEGER (0..10000)
        UNITS           "0.1V"
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "Photovoltaic voltage to start"
        ::= { zigorSolarCTR3ObjParams 6 }

zigorSolarCTR3ParamTArr OBJECT-TYPE
        SYNTAX          INTEGER (0..6000)
        UNITS           "s"
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "Voltage time to start"
        ::= { zigorSolarCTR3ObjParams 7 }

zigorSolarCTR3ParamPAC OBJECT-TYPE
        SYNTAX          INTEGER (0..1000)
        UNITS           "0.1kW"
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "AC power limit to stop"
        ::= { zigorSolarCTR3ObjParams 8 }

zigorSolarCTR3ParamTParada OBJECT-TYPE
        SYNTAX          INTEGER (0..100000)
        UNITS           "s"
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "Time limit to stop"
        ::= { zigorSolarCTR3ObjParams 9 }

zigorSolarCTR3ParamTEspera OBJECT-TYPE
        SYNTAX          INTEGER (0..6000)
        UNITS           "s"
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "Delay time after stop"
        ::= { zigorSolarCTR3ObjParams 10 }

zigorSolarCTR3ParamSubidFreq OBJECT-TYPE
        SYNTAX          INTEGER
        UNITS           "0.01 Hz"
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "Maximum frequency rise on Connection"
        ::= { zigorSolarCTR3ObjParams 11 }
```

```
zigorSolarCTR3ParamVPvCorto OBJECT-TYPE
        SYNTAX          INTEGER (-10000..10000)
        UNITS           "0.1V"
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "Shortcircuit photovoltaic voltage"
        ::= { zigorSolarCTR3ObjParams 12 }

zigorSolarCTR3ParamIEntCorto OBJECT-TYPE
        SYNTAX          INTEGER (0..10000)
        UNITS           "0.1A"
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "Shortcircuit input current"
        ::= { zigorSolarCTR3ObjParams 13 }

zigorSolarCTR3ParamTChopMax OBJECT-TYPE
        SYNTAX          INTEGER (-40..250)
        UNITS           "degrees Celsius"
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "Chopper high temperature"
        ::= { zigorSolarCTR3ObjParams 14 }

zigorSolarCTR3ParamTRecMax OBJECT-TYPE
        SYNTAX          INTEGER (-40..250)
        UNITS           "degrees Celsius"
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "Inverter high temperature"
        ::= { zigorSolarCTR3ObjParams 15 }

zigorSolarCTR3ParamTArmAlta OBJECT-TYPE
        SYNTAX          INTEGER (-40..250)
        UNITS           "degrees Celsius"
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "Cabinet high temperature"
        ::= { zigorSolarCTR3ObjParams 16 }

zigorSolarCTR3ParamTTrafoAlta OBJECT-TYPE
        SYNTAX          INTEGER (-40..250)
        UNITS           "degrees Celsius"
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "Transformator high temperature (not available)"
        ::= { zigorSolarCTR3ObjParams 17 }

zigorSolarCTR3ParamVPvMax OBJECT-TYPE
        SYNTAX          INTEGER (-10000..11000)
        UNITS           "0.1V"
        MAX-ACCESS      read-write
        STATUS          current
```

```
        DESCRIPTION
                "High photovoltaic voltage"
        ::= { zigorSolarCTR3ObjParams 18 }

zigorSolarCTR3ParamVPvInv OBJECT-TYPE
        SYNTAX          INTEGER (-10000..10000)
        UNITS           "0.1V"
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "Voltage to detect reverse polarity"
        ::= { zigorSolarCTR3ObjParams 19 }

zigorSolarCTR3ParamIrradMin OBJECT-TYPE
        SYNTAX          INTEGER (0..1000)
        UNITS           "W/m^2"
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "Minimum irradiance to start"
        ::= { zigorSolarCTR3ObjParams 20 }

zigorSolarCTR3ParamCondStart OBJECT-TYPE
        SYNTAX          CondicionArranque
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "Start condition"
        ::= { zigorSolarCTR3ObjParams 21 }

zigorSolarCTR3ParamRAis1 OBJECT-TYPE
        SYNTAX          INTEGER (0..1000000)
        UNITS           "kOhms"
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "Insulation resistance minor level"
        ::= { zigorSolarCTR3ObjParams 22 }

zigorSolarCTR3ParamRAis2 OBJECT-TYPE
        SYNTAX          INTEGER (0..1000000)
        UNITS           "kOhms"
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "Insulation resistance serious level"
        ::= { zigorSolarCTR3ObjParams 23 }

zigorSolarCTR3ParamTactVenCas OBJECT-TYPE
        SYNTAX          INTEGER (-40..250)
        UNITS           "degrees Celsius"
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "Room fan activation temperature"
        ::= { zigorSolarCTR3ObjParams 24 }

zigorSolarCTR3ParamThysVenCas OBJECT-TYPE
        SYNTAX          INTEGER (-40..250)
        UNITS           "degrees Celsius"
```

```
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "Room fan hysteresis temperature"
        ::= { zigorSolarCTR3ObjParams 25 }

zigorSolarCTR3ParamTminVenCas OBJECT-TYPE
        SYNTAX          INTEGER
        UNITS           "min"
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "Room fan minimum activation time"
        ::= { zigorSolarCTR3ObjParams 26 }

zigorSolarCTR3ParamTmaxVenCas OBJECT-TYPE
        SYNTAX          INTEGER
        UNITS           "min"
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "Room fan maximum deactivation time"
        ::= { zigorSolarCTR3ObjParams 27 }

zigorSolarCTR3ParamTactVenArm OBJECT-TYPE
        SYNTAX          INTEGER
        UNITS           "degrees Celsius"
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "Cabinet fan activation temperature"
        ::= { zigorSolarCTR3ObjParams 28 }

zigorSolarCTR3ParamThysVenArm OBJECT-TYPE
        SYNTAX          INTEGER
        UNITS           "degrees Celsius"
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "Cabinet fan hysteresis temperature"
        ::= { zigorSolarCTR3ObjParams 29 }

zigorSolarCTR3ParamTminVenArm OBJECT-TYPE
        SYNTAX          INTEGER
        UNITS           "min"
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "Cabinet fan minimum activation time"
        ::= { zigorSolarCTR3ObjParams 30 }

zigorSolarCTR3ParamTmaxVenArm OBJECT-TYPE
        SYNTAX          INTEGER
        UNITS           "min"
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "Cabinet fan maximum deactivation time"
        ::= { zigorSolarCTR3ObjParams 31 }
```

```
zigorSolarCTR3ParamTactVenTrf OBJECT-TYPE
        SYNTAX          INTEGER
        UNITS           "degrees Celsius"
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "Transformator fan activation temperature"
        ::= { zigorSolarCTR3ObjParams 32 }

zigorSolarCTR3ParamThysVenTrf OBJECT-TYPE
        SYNTAX          INTEGER
        UNITS           "degrees Celsius"
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "Transformator fan hysteresis temperature"
        ::= { zigorSolarCTR3ObjParams 33 }

zigorSolarCTR3ParamTminVenTrf OBJECT-TYPE
        SYNTAX          INTEGER
        UNITS           "min"
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "Transformator fan minimum activation time"
        ::= { zigorSolarCTR3ObjParams 34 }

zigorSolarCTR3ParamTmaxVenTrf OBJECT-TYPE
        SYNTAX          INTEGER
        UNITS           "min"
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "Transformator fan maximum deactivation time"
        ::= { zigorSolarCTR3ObjParams 35 }

zigorSolarCTR3ParamOffIrrad OBJECT-TYPE
        SYNTAX          INTEGER (-2000..2000)
        UNITS           "W/m^2"
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "Irradiance calibration offset"
        ::= { zigorSolarCTR3ObjParams 36 }

zigorSolarCTR3ParamGanIrrad OBJECT-TYPE
        SYNTAX          INTEGER (0..1000000)
        UNITS           "W/m^2/v"
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "Irradiance calibration gain"
        ::= { zigorSolarCTR3ObjParams 37 }

zigorSolarCTR3ParamCorrRadRec OBJECT-TYPE
        SYNTAX          INTEGER (-2000..2000)
        UNITS           "0.001"
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
```

```
                "Inverter heatsink temperature offset"
        ::= { zigorSolarCTR3ObjParams 38 }

zigorSolarCTR3ParamCorrRadChop OBJECT-TYPE
        SYNTAX          INTEGER (-2000..2000)
        UNITS           "0.001"
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "Chopper heatsink temperature offset"
        ::= { zigorSolarCTR3ObjParams 39 }

zigorSolarCTR3ParamZonaReac OBJECT-TYPE
        SYNTAX          ZonaHorariaReactiva
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "Time zone for reactive energy management (Not Used)"
        ::= { zigorSolarCTR3ObjParams 40 }

zigorSolarCTR3ParamFPotPunta OBJECT-TYPE
        SYNTAX          INTEGER (-1000..1000)
        UNITS           "0.001"
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "'Punta' hours objective power factor"
        ::= { zigorSolarCTR3ObjParams 41 }

zigorSolarCTR3ParamFPotLlano OBJECT-TYPE
        SYNTAX          INTEGER (-1000..1000)
        UNITS           "0.001"
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "'LLano' hours objective power factor"
        ::= { zigorSolarCTR3ObjParams 42 }

zigorSolarCTR3ParamFPotValle OBJECT-TYPE
        SYNTAX          INTEGER (-1000..1000)
        UNITS           "0.001"
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "'Valle' hours objective power factor"
        ::= { zigorSolarCTR3ObjParams 43 }

zigorSolarCTR3ParamCoordLong OBJECT-TYPE
        SYNTAX          INTEGER (-10000000..10000000)
        UNITS           "seconds"
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "Longitude coordinate"
        ::= { zigorSolarCTR3ObjParams 44 }

zigorSolarCTR3ParamCoordLat OBJECT-TYPE
        SYNTAX          INTEGER (-10000000..10000000)
        UNITS           "seconds"
        MAX-ACCESS      read-write
```

```
        STATUS          current
        DESCRIPTION
                "Latitude coordinate"
        ::= { zigorSolarCTR3ObjParams 45 }

zigorSolarCTR3ParamTimeZone OBJECT-TYPE
        SYNTAX          INTEGER
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "Reserved"   -- XXX
        ::= { zigorSolarCTR3ObjParams 46 }

zigorSolarCTR3ParamDeratingKp OBJECT-TYPE
        SYNTAX          INTEGER (0..1000000)
        UNITS           "0.001"
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "Derating Kp"
        ::= { zigorSolarCTR3ObjParams 47 }

zigorSolarCTR3ParamDeratingTi OBJECT-TYPE
        SYNTAX          INTEGER (1..1000)
        UNITS           "seconds"
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "Derating Ti"
        ::= { zigorSolarCTR3ObjParams 48 }

zigorSolarCTR3ParamDeratingMax OBJECT-TYPE
        SYNTAX          INTEGER (0..1150)
        UNITS           "0.001"
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "Derating Maximun Output"
        ::= { zigorSolarCTR3ObjParams 49 }

zigorSolarCTR3ParamDeratingTref OBJECT-TYPE
        SYNTAX          INTEGER (-40..250)
        UNITS           "degrees Celsius"
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "Derating Tref"
        ::= { zigorSolarCTR3ObjParams 50 }

zigorSolarCTR3ParamOffsetRAis OBJECT-TYPE
        SYNTAX          INTEGER (0..10000)
        UNITS           "kOhms"
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "Insulation resistance offset when DC contactor opened"
        ::= { zigorSolarCTR3ObjParams 51 }

zigorSolarCTR3ParamStringsIout OBJECT-TYPE
        SYNTAX    Integer32
```

```
        MAX-ACCESS read-write
        STATUS     current
        DESCRIPTION
                "Strings Mean current offset for an alarm."
        ::= { zigorSolarCTR3ObjParams 52 }

zigorSolarCTR3ParamStringsImin OBJECT-TYPE
        SYNTAX     Integer32
        MAX-ACCESS read-write
        STATUS     current
        DESCRIPTION
                "Strings Minimun mean current for alarm evaluation."
        ::= { zigorSolarCTR3ObjParams 53 }

zigorSolarCTR3ParamStringsTact OBJECT-TYPE
        SYNTAX     Integer32
        MAX-ACCESS read-write
        STATUS     current
        DESCRIPTION
                "Strings Filter time for alarm activation."
        ::= { zigorSolarCTR3ObjParams 54 }

zigorSolarCTR3ParamStringsTdes OBJECT-TYPE
        SYNTAX     Integer32
        MAX-ACCESS read-write
        STATUS     current
        DESCRIPTION
                "Strings Filter time for alarm desactivation."
        ::= { zigorSolarCTR3ObjParams 55 }

zigorSolarCTR3ParamStringsPresent OBJECT-TYPE
        SYNTAX     Integer32
        MAX-ACCESS read-write
        STATUS     current
        DESCRIPTION
                "Number of Strings present."
        ::= { zigorSolarCTR3ObjParams 56 }

zigorSolarCTR3ParamStringsTable OBJECT-TYPE
        SYNTAX     SEQUENCE OF ZigorSolarCTR3ParamStringsEntry
        MAX-ACCESS not-accessible
        STATUS     current
        DESCRIPTION
          "Table of general Strings parameters. The number of entries
          is given by the value of zigorSolarCTR3ParamStringsPresent."
        ::= { zigorSolarCTR3ObjParams 57 }

zigorSolarCTR3ParamStringsEntry OBJECT-TYPE
        SYNTAX     ZigorSolarCTR3ParamStringsEntry
        MAX-ACCESS not-accessible
        STATUS     current
        DESCRIPTION
                "An entry containing information applicable to a
          particular String parameters."
        INDEX { zigorSolarCTR3ParamStringsId }
        ::= { zigorSolarCTR3ParamStringsTable 1 }

ZigorSolarCTR3ParamStringsEntry ::= SEQUENCE {
        zigorSolarCTR3ParamStringsId       PositiveInteger,
        zigorSolarCTR3ParamStringsGan      Integer32,
```

```
        zigorSolarCTR3ParamStringsHab    TruthValue,
}

zigorSolarCTR3ParamStringsId OBJECT-TYPE
        SYNTAX          PositiveInteger
        MAX-ACCESS      not-accessible
        STATUS          current
        DESCRIPTION
                "A unique identifier for a String parameter entry. This
                value must remain constant."
        ::= { zigorSolarCTR3ParamStringsEntry 1 }

zigorSolarCTR3ParamStringsGan OBJECT-TYPE
        SYNTAX          Integer32
        UNITS         "0.001"
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "Strings gain for analog inputs (current)."
        ::= { zigorSolarCTR3ParamStringsEntry 2 }

zigorSolarCTR3ParamStringsHab OBJECT-TYPE
        SYNTAX          TruthValue
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "Strings habilitation."
        ::= { zigorSolarCTR3ParamStringsEntry 3 }

zigorSolarCTR3ParamStringsDinPresent OBJECT-TYPE
        SYNTAX  Integer32
        MAX-ACCESS read-write
        STATUS  current
        DESCRIPTION
                "Number of Strings digital inputs present (protections)."
        ::= { zigorSolarCTR3ObjParams 58 }

zigorSolarCTR3ParamStringsDinTable OBJECT-TYPE
        SYNTAX  SEQUENCE OF ZigorSolarCTR3ParamStringsDinEntry
        MAX-ACCESS not-accessible
        STATUS  current
        DESCRIPTION
          "Table of Strings parameters for digital inputs. The number of entries
          is given by the value of zigorSolarCTR3ParamStringsDinPresent."
        ::= { zigorSolarCTR3ObjParams 59 }

zigorSolarCTR3ParamStringsDinEntry OBJECT-TYPE
        SYNTAX  ZigorSolarCTR3ObjStringsDinEntry
        MAX-ACCESS not-accessible
        STATUS  current
        DESCRIPTION
                "An entry containing information applicable to a
          particular String digital input."
        INDEX { zigorSolarCTR3ParamStringsDinId }
        ::= { zigorSolarCTR3ParamStringsDinTable 1 }

ZigorSolarCTR3ParamStringsDinEntry ::= SEQUENCE {
        zigorSolarCTR3ParamStringsDinId  PositiveInteger,
        zigorSolarCTR3ParamStringsDinHab         TruthValue,
}
```

```
zigorSolarCTR3ParamStringsDinId OBJECT-TYPE
        SYNTAX          PositiveInteger
        MAX-ACCESS      not-accessible
        STATUS          current
        DESCRIPTION
                "A unique identifier for a String digital input. This
                value must remain constant."
        ::= { zigorSolarCTR3ParamStringsDinEntry 1 }

zigorSolarCTR3ParamStringsDinHab OBJECT-TYPE
        SYNTAX          TruthValue
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "String digital input habilitation"
        ::= { zigorSolarCTR3ParamStringsDinEntry 2 }

zigorSolarCTR3ParamStringsAinPresent OBJECT-TYPE
        SYNTAX    Integer32
        MAX-ACCESS read-write
        STATUS    current
        DESCRIPTION
                "Number of Strings analog inputs present (currents)."
        ::= { zigorSolarCTR3ObjParams 60 }

zigorSolarCTR3ParamStringsAinTable OBJECT-TYPE
        SYNTAX    SEQUENCE OF ZigorSolarCTR3ParamStringsAinEntry
        MAX-ACCESS not-accessible
        STATUS    current
        DESCRIPTION
          "Table of Strings parameters for analog inputs.  The number of entries
          is given by the value of zigorSolarCTR3ParamStringsAinPresent."
        ::= { zigorSolarCTR3ObjParams 61 }

zigorSolarCTR3ParamStringsAinEntry OBJECT-TYPE
        SYNTAX    ZigorSolarCTR3ObjStringsAinEntry
        MAX-ACCESS not-accessible
        STATUS    current
        DESCRIPTION
                "An entry containing information applicable to a
          particular String analog input."
        INDEX { zigorSolarCTR3ParamStringsAinId }
        ::= { zigorSolarCTR3ParamStringsAinTable 1 }

ZigorSolarCTR3ParamStringsAinEntry ::= SEQUENCE {
        zigorSolarCTR3ParamStringsAinId  PositiveInteger,
        zigorSolarCTR3ParamStringsAinHab         TruthValue,
}

zigorSolarCTR3ParamStringsAinId OBJECT-TYPE
        SYNTAX          PositiveInteger
        MAX-ACCESS      not-accessible
        STATUS          current
        DESCRIPTION
                "A unique identifier for a String analog input.  This
                value must remain constant."
        ::= { zigorSolarCTR3ParamStringsAinEntry 1 }

zigorSolarCTR3ParamStringsAinHab OBJECT-TYPE
```

```
        SYNTAX          TruthValue
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "String analog input habilitation"
        ::= { zigorSolarCTR3ParamStringsAinEntry 2 }

zigorSolarCTR3ParamIfugaDCFVInc40 OBJECT-TYPE
        SYNTAX          INTEGER (0..7000)
        UNITS           "0.1 mA"
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "Minimum increase photovoltaic DC leakage 40ms (only in TL model)"
        ::= { zigorSolarCTR3ObjParams 62 }

zigorSolarCTR3ParamIfugaDCFVInc300 OBJECT-TYPE
        SYNTAX          INTEGER (0..7000)
        UNITS           "0.1 mA"
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "Minimum increase photovoltaic DC leakage 300ms (only in TL model)"
        ::= { zigorSolarCTR3ObjParams 63 }

zigorSolarCTR3ParamIfugaFVMax OBJECT-TYPE
        SYNTAX          INTEGER (0..12000)
        UNITS           "0.1 mA"
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "High DC/AC photovoltaic leakage current (only in TL model)"
        ::= { zigorSolarCTR3ObjParams 64 }

zigorSolarCTR3ParamIfugaFVInstMax OBJECT-TYPE
        SYNTAX          INTEGER (0..100000)
        UNITS           "0.1 mA"
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "High instant photovoltaic leakage current (only in TL model)"
        ::= { zigorSolarCTR3ObjParams 65 }

zigorSolarCTR3ParamIfugaACMax OBJECT-TYPE
        SYNTAX          INTEGER (0..100000)
        UNITS           "0.1 mA"
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "High AC leakage current (only in TL model)"
        ::= { zigorSolarCTR3ObjParams 66 }

zigorSolarCTR3ParamIfugaACFiltro OBJECT-TYPE
        SYNTAX          INTEGER (0..10000)
        UNITS           "0.001 seconds"
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "Delay for high AC leakage current (only in TL model)"
        ::= { zigorSolarCTR3ObjParams 67 }
```

```
zigorSolarCTR3ParamNormaRed OBJECT-TYPE
        SYNTAX          INTEGER (1..100)
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "Power grid regulation"
        ::= { zigorSolarCTR3ObjParams 68 }
------
zigorSolarCTR3ParamAmpIReactPNom OBJECT-TYPE
        SYNTAX          INTEGER (0..150)
        UNITS           "0.1 A"
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "Reactive Current Amplitude for Nominal Power"
        ::= { zigorSolarCTR3ObjParams 69 }
zigorSolarCTR3ParamAmpIReacMin OBJECT-TYPE
        SYNTAX          INTEGER (0..100)
        UNITS           "0.1 A"
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "Minimum Reactive Current Amplitude"
        ::= { zigorSolarCTR3ObjParams 70 }
zigorSolarCTR3ParamVRed60Max OBJECT-TYPE
        SYNTAX          INTEGER (0..200)
        UNITS           "0.1 V"
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "Maximum 60Hz Mains Voltage"
        ::= { zigorSolarCTR3ObjParams 71 }
zigorSolarCTR3ParamTiempoMaxHueco OBJECT-TYPE
        SYNTAX          INTEGER (1..2000)
        UNITS           "ms"
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "Dip Maximum Time"
        ::= { zigorSolarCTR3ObjParams 72 }
zigorSolarCTR3ParamVRedSalidaHueco OBJECT-TYPE
        SYNTAX          INTEGER (0..1000)
        UNITS           "0.001"
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "Dip Out Mains Voltage Factor"
        ::= { zigorSolarCTR3ObjParams 73 }
zigorSolarCTR3ParamIReacHueco OBJECT-TYPE
        SYNTAX          INTEGER (0..1000)
        UNITS           "0.001"
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "Dip Reactive Current Factor"
        ::= { zigorSolarCTR3ObjParams 74 }
zigorSolarCTR3ParamVRedMediaMax OBJECT-TYPE
        SYNTAX          INTEGER (0..200)
        UNITS           "0.001"
```

```
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "Maximum Average Mains Voltage Factor"
        ::= { zigorSolarCTR3ObjParams 75 }
zigorSolarCTR3ParamTiempoMediaVRed OBJECT-TYPE
        SYNTAX          INTEGER (0..600)
        UNITS           "s"
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "Average Mains Voltage Time"
        ::= { zigorSolarCTR3ObjParams 76 }
zigorSolarCTR3ParamTimeoutVueltaRed OBJECT-TYPE
        SYNTAX          INTEGER (0..600)
        UNITS           "s"
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "Mains Back Timeout"
        ::= { zigorSolarCTR3ObjParams 77 }
zigorSolarCTR3ParamVinMinimaMPPT OBJECT-TYPE
        SYNTAX          INTEGER (2000..7000)
        UNITS           "0.1 V"
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "MPPT Minimum Input Voltage"
        ::= { zigorSolarCTR3ObjParams 78 }
zigorSolarCTR3ParamVBusMaxima OBJECT-TYPE
        SYNTAX          INTEGER (8200..9000)
        UNITS           "0.1 V"
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "Maximum Bus Voltage"
        ::= { zigorSolarCTR3ObjParams 79 }
zigorSolarCTR3VParamBusDescarga OBJECT-TYPE
        SYNTAX          INTEGER (600..10000)
        UNITS           "0.1 V"
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "Discharge Bus Voltage"
        ::= { zigorSolarCTR3ObjParams 80 }
zigorSolarCTR3ParamPotSalNom OBJECT-TYPE
        SYNTAX          INTEGER
        UNITS           "0.1 kW"
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "Nominal Power"
        ::= { zigorSolarCTR3ObjParams 81 }
zigorSolarCTR3ParamPotSalMax OBJECT-TYPE
        SYNTAX          INTEGER (0..1700)
        UNITS           "0.1 kW"
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "Maximum Power"
```

```
        ::= { zigorSolarCTR3ObjParams 82 }
zigorSolarCTR3ParamIMax OBJECT-TYPE
        SYNTAX          INTEGER (0..2500)
        UNITS           "0.1 A"
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "Maximum Current"
        ::= { zigorSolarCTR3ObjParams 83 }

zigorSolarCTR3ParamArch OBJECT-TYPE
        SYNTAX          Architecture
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "System Architecture"
        ::= { zigorSolarCTR3ObjParams 84 }

zigorSolarCTR3ParamICaidaRedDis OBJECT-TYPE
        SYNTAX          INTEGER
        UNITS           "0.001"
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "Grid drop index on Disconnection"
        ::= { zigorSolarCTR3ObjParams 90 }

zigorSolarCTR3ParamISubRedDis OBJECT-TYPE
        SYNTAX          INTEGER
        UNITS           "0.001"
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "Grid rise index on Disconnection"
        ::= { zigorSolarCTR3ObjParams 91 }

zigorSolarCTR3ParamCaidaFreqDis OBJECT-TYPE
        SYNTAX          INTEGER
        UNITS           "0.01 Hz"
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "Maximum frequency drop on Disconnection"
        ::= { zigorSolarCTR3ObjParams 92 }

zigorSolarCTR3ParamSubidFreqDis OBJECT-TYPE
        SYNTAX          INTEGER
        UNITS           "0.01 Hz"
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "Maximum frequency rise on Disconnection"
        ::= { zigorSolarCTR3ObjParams 93 }

zigorSolarCTR3ParamCosPhi OBJECT-TYPE
        SYNTAX          INTEGER (-1000..1000)
        UNITS           "0.001"
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
```

```
                "Cos Phi (0 disable Q control. See parameter QFactor)"
        ::= { zigorSolarCTR3ObjParams 94 }

zigorSolarCTR3ParamQFactor OBJECT-TYPE
        SYNTAX          INTEGER (-1000..1000)
        UNITS           "0.001 kVAr/kW"
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "Q Factor (Q/Pnominal. Enable if parameter CosPhi==0)"
        ::= { zigorSolarCTR3ObjParams 95 }

--
-- Alarms
--
zigorSolarCTR3Alarms            OBJECT IDENTIFIER ::= { zigorSolarCTR3MIB 2 }

zigorAlarmaFalloAis1 OBJECT-IDENTITY
        STATUS          current
        DESCRIPTION
                "Minor Insulation Failure"
        ::= { zigorSolarCTR3Alarms 1 }

zigorAlarmaFalloAis2 OBJECT-IDENTITY
        STATUS          current
        DESCRIPTION
                "Serious Insulation Failure"
        ::= { zigorSolarCTR3Alarms 2 }

zigorAlarmaSupVAC OBJECT-IDENTITY
        STATUS          current
        DESCRIPTION
                "AC Overvoltage"
        ::= { zigorSolarCTR3Alarms 3 }

zigorAlarmaSubVAC OBJECT-IDENTITY
        STATUS          current
        DESCRIPTION
                "AC Undervoltage"
        ::= { zigorSolarCTR3Alarms 4 }


zigorAlarmaErrorPLL OBJECT-IDENTITY
        STATUS          current
        DESCRIPTION
                "Grid Frequency Error"
        ::= { zigorSolarCTR3Alarms 5 }

zigorAlarmaPEmergencia OBJECT-IDENTITY
        STATUS          current
        DESCRIPTION
                "Emergency Stop"
        ::= { zigorSolarCTR3Alarms 6 }

zigorAlarmaCortoDC OBJECT-IDENTITY
        STATUS          current
        DESCRIPTION
                "DC ShortCircuit"
        ::= { zigorSolarCTR3Alarms 7 }
```

```
zigorAlarmaSupTChopper OBJECT-IDENTITY
        STATUS          current
        DESCRIPTION
                "Chopper High Temperature"
        ::= { zigorSolarCTR3Alarms 8 }

zigorAlarmaSupTRec OBJECT-IDENTITY
        STATUS          current
        DESCRIPTION
                "Inverter High Temperature"
        ::= { zigorSolarCTR3Alarms 9 }

zigorAlarmaTermo OBJECT-IDENTITY
        STATUS          current
        DESCRIPTION
                "Thermostat Trigger"
        ::= { zigorSolarCTR3Alarms 10 }

zigorAlarmaSupTArm OBJECT-IDENTITY
        STATUS          current
        DESCRIPTION
                "Cabinet High Temperature"
        ::= { zigorSolarCTR3Alarms 11 }

zigorAlarmaSupTTrafo OBJECT-IDENTITY
        STATUS          current
        DESCRIPTION
                "Transformator High Temperature"
        ::= { zigorSolarCTR3Alarms 12 }

zigorAlarmaFalloFan OBJECT-IDENTITY
        STATUS          current
        DESCRIPTION
                "Fan Failure (not available)"
        ::= { zigorSolarCTR3Alarms 13 }

zigorAlarmaErrorContDC OBJECT-IDENTITY
        STATUS          current
        DESCRIPTION
                "DC Contactor Failure"
        ::= { zigorSolarCTR3Alarms 14 }

zigorAlarmaPuerta OBJECT-IDENTITY
        STATUS          current
        DESCRIPTION
                "Open Door"
        ::= { zigorSolarCTR3Alarms 15 }

zigorAlarmaFalloDrv OBJECT-IDENTITY
        STATUS          current
        DESCRIPTION
                "Driver Failure"
        ::= { zigorSolarCTR3Alarms 16 }

zigorAlarmaErrorComDSP OBJECT-IDENTITY
        STATUS          current
        DESCRIPTION
                "DSP Communication Error"
        ::= { zigorSolarCTR3Alarms 17 }
```

```
zigorAlarmaErrorComCInt OBJECT-IDENTITY
        STATUS          current
        DESCRIPTION
                "Measures Communication Error"
        ::= { zigorSolarCTR3Alarms 18 }

zigorAlarmaSupVDC OBJECT-IDENTITY
        STATUS          current
        DESCRIPTION
                "DC Overvoltage"
        ::= { zigorSolarCTR3Alarms 19 }

zigorAlarmaInvDC OBJECT-IDENTITY
        STATUS          current
        DESCRIPTION
                "Reverse DC Polarity"
        ::= { zigorSolarCTR3Alarms 20 }

zigorAlarmaFalloPre OBJECT-IDENTITY
        STATUS          current
        DESCRIPTION
                "Preload Failure"
        ::= { zigorSolarCTR3Alarms 21 }

zigorAlarmaEnIsla OBJECT-IDENTITY
        STATUS          current
        DESCRIPTION
                "Islanding"
        ::= { zigorSolarCTR3Alarms 22 }

zigorAlarmaErrorVBusInv OBJECT-IDENTITY
        STATUS          current
        DESCRIPTION
                "Inverter Bus Voltage Error"
        ::= { zigorSolarCTR3Alarms 23 }

zigorAlarmaErrorAlimInv OBJECT-IDENTITY
        STATUS          current
        DESCRIPTION
                "Inverter Power Supply Error"
        ::= { zigorSolarCTR3Alarms 24 }

zigorAlarmaErrorContMedDC OBJECT-IDENTITY
        STATUS          current
        DESCRIPTION
                "DC Measure Contactor Error"
        ::= { zigorSolarCTR3Alarms 25 }

zigorAlarmaIntGeneralDesc OBJECT-IDENTITY
        STATUS          current
        DESCRIPTION
                "Main Switch Disconnected"
        ::= { zigorSolarCTR3Alarms 26 }

zigorAlarmaProtSobTDCNoOp OBJECT-IDENTITY
        STATUS          current
        DESCRIPTION
                "DC Overvoltage Protection"
        ::= { zigorSolarCTR3Alarms 27 }
```

```
zigorAlarmaProtSobTACNoOp OBJECT-IDENTITY
        STATUS          current
        DESCRIPTION
                "AC Overvoltage Protection"
        ::= { zigorSolarCTR3Alarms 28 }

zigorAlarmaExt OBJECT-IDENTITY
        STATUS          current
        DESCRIPTION
                "External Alarm"
        ::= { zigorSolarCTR3Alarms 29 }

zigorAlarmaErrorCComICP OBJECT-IDENTITY
        STATUS          current
        DESCRIPTION
                "Irradiance Communication Error"
        ::= { zigorSolarCTR3Alarms 30 }

zigorAlarmaErrorPersisInv OBJECT-IDENTITY
        STATUS          current
        DESCRIPTION
                "Inverter Persistent Error"
        ::= { zigorSolarCTR3Alarms 31 }

zigorAlarmaErrorDescBusInv OBJECT-IDENTITY
        STATUS          current
        DESCRIPTION
                "Inverter Bus Discharge Error"
        ::= { zigorSolarCTR3Alarms 32 }

zigorAlarmaStringsAinECom OBJECT-IDENTITY
        STATUS          current
        DESCRIPTION
                "Strings Current Measures Comm. Error"
        ::= { zigorSolarCTR3Alarms 33 }

zigorAlarmaStringsDinECom OBJECT-IDENTITY
        STATUS          current
        DESCRIPTION
                "Strings Protections Comm. Error"
        ::= { zigorSolarCTR3Alarms 34 }

zigorAlarmaStringsInt OBJECT-IDENTITY
        STATUS          current
        DESCRIPTION
                "Strings Overload Circuit Breaker"
        ::= { zigorSolarCTR3Alarms 35 }

zigorAlarmaStringsSupVDC OBJECT-IDENTITY
        STATUS          current
        DESCRIPTION
                "Strings Overvoltage Protection"
        ::= { zigorSolarCTR3Alarms 36 }

zigorAlarmaStringsIout1 OBJECT-IDENTITY
        STATUS          current
        DESCRIPTION
                "String 1 Current under limit"
        ::= { zigorSolarCTR3Alarms 37 }
```

```
zigorAlarmaStringsIout2 OBJECT-IDENTITY
        STATUS          current
        DESCRIPTION
                "String 2 Current under limit"
        ::= { zigorSolarCTR3Alarms 38 }

zigorAlarmaStringsIout3 OBJECT-IDENTITY
        STATUS          current
        DESCRIPTION
                "String 3 Current under limit"
        ::= { zigorSolarCTR3Alarms 39 }

zigorAlarmaStringsIout4 OBJECT-IDENTITY
        STATUS          current
        DESCRIPTION
                "String 4 Current under limit"
        ::= { zigorSolarCTR3Alarms 40 }

zigorAlarmaStringsIout5 OBJECT-IDENTITY
        STATUS          current
        DESCRIPTION
                "String 5 Current under limit"
        ::= { zigorSolarCTR3Alarms 41 }

zigorAlarmaStringsIout6 OBJECT-IDENTITY
        STATUS          current
        DESCRIPTION
                "String 6 Current under limit"
        ::= { zigorSolarCTR3Alarms 42 }

zigorAlarmaStringsIout7 OBJECT-IDENTITY
        STATUS          current
        DESCRIPTION
                "String 7 Current under limit"
        ::= { zigorSolarCTR3Alarms 43 }

zigorAlarmaStringsIout8 OBJECT-IDENTITY
        STATUS          current
        DESCRIPTION
                "String 8 Current under limit"
        ::= { zigorSolarCTR3Alarms 44 }

zigorAlarmaFugaDCFV OBJECT-IDENTITY
        STATUS          current
        DESCRIPTION
                "High DC photovoltaic leakage current (not available)"
        ::= { zigorSolarCTR3Alarms 45 }

zigorAlarmaFugaDCFVInst OBJECT-IDENTITY
        STATUS          current
        DESCRIPTION
                "High instant photovoltaic leakage current (not available)"
        ::= { zigorSolarCTR3Alarms 46 }

zigorAlarmaFugaFV OBJECT-IDENTITY
        STATUS          current
        DESCRIPTION
                "High DC-AC photovoltaic leakage current (not available)"
        ::= { zigorSolarCTR3Alarms 47 }
```

```
zigorAlarmaFugaAC OBJECT-IDENTITY
        STATUS          current
        DESCRIPTION
                "High AC leakage current (not available)"
        ::= { zigorSolarCTR3Alarms 48 }

zigorAlarmaErrorComFugas OBJECT-IDENTITY
        STATUS          current
        DESCRIPTION
                "Communication Error with Leaks mcu (not available)"
        ::= { zigorSolarCTR3Alarms 49 }

zigorAlarmaErrorPersisInvFugas OBJECT-IDENTITY
        STATUS          current
        DESCRIPTION
                "Persistent Leak Error"
        ::= { zigorSolarCTR3Alarms 50 }

zigorAlarmaPLL OBJECT-IDENTITY
        STATUS          current
        DESCRIPTION
                "PLL Alarm"
        ::= { zigorSolarCTR3Alarms 51 }

zigorAlarmaFuga OBJECT-IDENTITY
        STATUS          current
        DESCRIPTION
                "High leakage current"
        ::= { zigorSolarCTR3Alarms 52 }

zigorAlarmaErrorBrake OBJECT-IDENTITY
        STATUS          current
        DESCRIPTION
                "High leakage current"
        ::= { zigorSolarCTR3Alarms 53 }

END
```

2.4 MIB DEFINITIONS: TC

```
ZIGOR-TC DEFINITIONS ::= BEGIN

IMPORTS
        MODULE-IDENTITY
                FROM SNMPv2-SMI
        TEXTUAL-CONVENTION
                FROM SNMPv2-TC
        zigorModules
                FROM ZIGOR-SMI;

zigorTextualConventions MODULE-IDENTITY
        LAST-UPDATED    "201003071130Z"
        ORGANIZATION    "Corporacion Zigor, S.A."
        CONTACT-INFO
                "       Corporacion Zigor, S.A.
                        Depto. I+D

                Postal: C/ Portal de Gamarra, 28
                        C.P 01013 Vitoria-Gasteiz , Alava
```

```
                    (Spain)

                Tel:    +34 (945) 214 600

                E-mail: zigor@zigor.com"
        DESCRIPTION
                "This module defines textual conventions used
                throughout zigor enterprise mibs."
        ::= { zigorModules 1 }

NonNegativeInteger ::= TEXTUAL-CONVENTION
        DISPLAY-HINT   "d"
        STATUS              current
        DESCRIPTION
                "This data type is a non-negative value."
      SYNTAX      INTEGER (0..2147483647)

PositiveInteger ::= TEXTUAL-CONVENTION
        DISPLAY-HINT "d"
        STATUS      current
        DESCRIPTION
                "This data type is a non-zero and non-negative value."
        SYNTAX      INTEGER (1..2147483647)

OnOff ::= TEXTUAL-CONVENTION
        STATUS              current
        DESCRIPTION
                "On/Off data type."
        SYNTAX              INTEGER { on(1), off(2) }

Percent         ::= TEXTUAL-CONVENTION
        STATUS              current
        DESCRIPTION
                "Percent value."
        SYNTAX              INTEGER (0..100)

ElementList ::= TEXTUAL-CONVENTION
        STATUS              current
        DESCRIPTION
                "An octet string containing a list of element values.
                Values are preferably in human-readable form.

                An object of this type contains a list of element values
                which are used to select a set of entries in a table.

                An element value is an arbitrary string of octets, but
                may not contain a delimiter character.  Delimiter
                characters are defined to be one of the following:

                        - An ASCII space character (0x20).

                        - An ASCII TAB character (0x09).

                        - An ASCII carriage return (CR) character (0x0D).

                        - An ASCII line feed (LF) character (0x0B).

                Delimiter characters are used to separate element values
                in an element list.  Only a single delimiter character may
                occur between two element values.  An element value may not
```

have a zero length. These constraints imply certain restrictions on the contents of this object:

- There cannot be a leading or trailing delimiter character.

- There cannot be multiple adjacent delimiter characters.

Some examples of valid element lists are:

- An empty string

- '1 3 5'

- '8'

Note that although a element value may not have a length of zero, an empty string is still valid. This indicates an empty list (i.e. there are no element values in the list).

The use of the element list to select table entries is application and MIB specific. Typically, an application will provide one or more element values, and any entry which contains some combination of these element values will be selected."

SYNTAX OCTET STRING (SIZE(0..255))

ZDateAndTime ::= TEXTUAL-CONVENTION

DISPLAY-HINT "4a-2a-2a,2a:2a:2a.1a,1a2a:2a"

STATUS current

DESCRIPTION

"A date-time specification.

field	octets	contents	range
1	1-4	year	'0000'..'9999'
2	5-6	month	'01'..'12'
3	7-8	day	'01'..'31'
4	9-10	hour	'00'..'23'
5	11-12	minutes	'00'..'59'
6	13-14	seconds (use 60 for leap-second)	'00'..'60'
7	15	deci-seconds	'0'..'9'
8	16	direction from UTC	'+' / '-'
9	17-18	hours from UTC*	'00'..'13'
10	19-20	minutes from UTC	'00'..'59'

* Notes:
- daylight saving time in New Zealand is +13

For example, Tuesday May 26, 1992 at 1:30:15 PM EDT would be displayed as:

1992-05-26,13:30:15.0,-04:00

Note that if only local time is known, then timezone information (fields 8-10) is not present."

SYNTAX OCTET STRING (SIZE (15 | 20))

IntegerString ::= TEXTUAL-CONVENTION

```
        DISPLAY-HINT        "a"
        STATUS              current
        DESCRIPTION
                "This data type is an ASCII representation of a signed or unsigned integer."
        SYNTAX              OCTET STRING (SIZE (8))

FloatString ::= TEXTUAL-CONVENTION
        DISPLAY-HINT        "a"
        STATUS              current
        DESCRIPTION
                "This data type is an ASCII representation of a real number, format %8.2f."
        SYNTAX              OCTET STRING (SIZE (8))

ArchSequenceString ::= TEXTUAL-CONVENTION
        DISPLAY-HINT        "a,a"
        STATUS              current
        DESCRIPTION
                "This data type is an ASCII representation of a sequence that establishes
                the distribution of elements in racks. The sequence follows the
                pattern: rack#,element#,rack#,element#, ... ."
        SYNTAX              OCTET STRING (SIZE (0..63))

AnalogVariableString ::= TEXTUAL-CONVENTION
        DISPLAY-HINT        "8a" "a"
        STATUS              current
        DESCRIPTION
                "This data type is an ASCII representation of an analog variable
                real time value. It is formatted as two ASCII strings separated by
                a space (%8s %s)."
        SYNTAX              OCTET STRING (SIZE (0..63))

Flag16String ::= TEXTUAL-CONVENTION
        DISPLAY-HINT        "a"
        STATUS              current
        DESCRIPTION
                "This data type is an ASCII representation of a 16 bit flag sequence."
        SYNTAX              OCTET STRING (SIZE (16))

Flag32String ::= TEXTUAL-CONVENTION
        DISPLAY-HINT        "a"
        STATUS              current
        DESCRIPTION
                "This data type is an ASCII representation of a 32 bit flag sequence."
        SYNTAX              OCTET STRING (SIZE (32))

Flag64String ::= TEXTUAL-CONVENTION
        DISPLAY-HINT        "a"
        STATUS              current
        DESCRIPTION
                "This data type is an ASCII representation of a 64 bit flag sequence."
        SYNTAX              OCTET STRING (SIZE (64))

DateString ::= TEXTUAL-CONVENTION
        DISPLAY-HINT        "a"
        STATUS              current
        DESCRIPTION
                "This data type is an ASCII representation of a date and time,format
                "dd-mm-yyyy hh:mm:ss:xx w" being dd: date, mm: month, yyyy:year, w: day
                of the week (1-7),hh: hour; mm: minute, ss: second, xx: hundredths of second."
        SYNTAX              OCTET STRING (SIZE (24))
```

```
EventTableItem ::= TEXTUAL-CONVENTION
        DISPLAY-HINT        "8a" "1a" "1a" "64a" "1a" "16a"
        STATUS              current
        DESCRIPTION
                "This data type is an ASCII representation of a event in the Z001's event table. It's
constructed as a sequence of previously defined textual conventions using a blank character as field
separator, specifically:

                Field           Type            Offset
                ---------------------------------------
                EventID                 IntegerString   1

                EventClass      1 ASCII char    10

                EventParameter          Flag64String    12

                EventFlags      Flag16String    77"
        SYNTAX              OCTET STRING (SIZE (92))

HistoryTableItem ::= TEXTUAL-CONVENTION
        DISPLAY-HINT        "8a" "1a" "24a" "1a" "8a" "1a" "64a"
        STATUS              current
        DESCRIPTION
                "This data type is an ASCII representation of a register in the Z001's history event table.
It's constructed as a sequence of previously defined textual conventions using a blank character as field
separator, specifically:

                Field           Type            Offset
                ---------------------------------------
                EventCode       IntegerString   1       (EventCode is an integer that goes sequentialy
around 0..65535 for every new event in the table)

                EventDate       DateString      10      (hundredhts of second and day of the week not used)

                EventID                 IntegerString   35

                EventParameter          Flag64String    44"
        SYNTAX              OCTET STRING (SIZE (128))

END
```

2.5 MIB DEFINITIONS: ALARM LOG

```
ZIGOR-ALARM-LOG-MIB DEFINITIONS ::= BEGIN

IMPORTS
        MODULE-IDENTITY,
        OBJECT-TYPE,
        NOTIFICATION-TYPE,
        Integer32
                FROM SNMPv2-SMI
        TEXTUAL-CONVENTION,
        AutonomousType
                FROM SNMPv2-TC
        PositiveInteger,
        ElementList,
        ZDateAndTime
                FROM ZIGOR-TC
        AlarmCondition
                FROM ZIGOR-ALARM-MIB
```

```
        zigorMgmt,
        zigorExperiment
                FROM ZIGOR-SMI;

zigorAlarmLogMIB    MODULE-IDENTITY
        LAST-UPDATED      "201003071130Z"
        ORGANIZATION      "Corporazion Zigor, S.A."
        CONTACT-INFO
                "       Corporacion Zigor, S.A.
                        Depto. I+D

                Postal: C/ Portal de Gamarra, 28
                        C.P 01013 Vitoria-Gasteiz , Alava
                        (Spain)

                Tel:    +34 (945) 214 600

                E-mail: zigor@zigor.com"
        DESCRIPTION
                "Alarm Log MIB"
        ::= { zigorExperiment 8 }

zigorAlarmLog OBJECT IDENTIFIER ::= { zigorAlarmLogMIB 1 }

zigorAlarmLogTotalEntries OBJECT-TYPE
        SYNTAX    Integer32
        MAX-ACCESS read-only
        STATUS    current
        DESCRIPTION
                "The total number of alarm entries currently in the log."
        ::= { zigorAlarmLog 1 }

zigorAlarmLogMaxEntries OBJECT-TYPE
        SYNTAX    Integer32
        MAX-ACCESS read-only
        STATUS    current
        DESCRIPTION
                "This object represents the maximum number of
                alarm entries in the zigorAlarmLogTable. When the
                object zigorAlarmLogTotalEntries equals this object,
                the next alarm appearing causes the oldest entry
                to be deleted.
                If the value of this object is increased, then oldest
                entry removal ceases until the maximum is reached
                again. If management reduces the value of this
                object, then, starting with the oldest, alarm
                entries are removed until the new number of
                entries is reached."
        ::= { zigorAlarmLog 2 }

zigorAlarmLogQueueWraps OBJECT-TYPE
        SYNTAX    Integer32
        MAX-ACCESS read-only
        STATUS    current
        DESCRIPTION
                "This object represents the number of times the queue has wrapped.
                Since circular queues are used for storing the entries, when all allocated
                entries are used, the oldest entries are reused, thus
                creating a wrap condition.  A value of zero indicates the
                queue has not wrapped, except in the case that the counter
```

```
                itself has wrapped."
        ::= { zigorAlarmLog 3 }

zigorAlarmLogIndex OBJECT-TYPE
        SYNTAX     PositiveInteger
        MAX-ACCESS read-only
        STATUS     current
        DESCRIPTION
                "The current index in the circular buffer where alarms are
                being logged."
        ::= { zigorAlarmLog 4 }

zigorAlarmLogTable OBJECT-TYPE
        SYNTAX     SEQUENCE OF ZigorAlarmLogEntry
        MAX-ACCESS not-accessible
        STATUS     current
        DESCRIPTION
          "Alarm log table. The number of rows in the table at
             any given time is reflected by the value of zigorAlarmLogPresent."
        ::= { zigorAlarmLog 5 }

zigorAlarmLogEntry OBJECT-TYPE
        SYNTAX     ZigorAlarmLogEntry
        MAX-ACCESS not-accessible
        STATUS     current
        DESCRIPTION
                "An entry containing information applicable to a
           particular alarm log."
        INDEX { zigorAlarmLogId }
        ::= { zigorAlarmLogTable 1 }

ZigorAlarmLogEntry ::= SEQUENCE {
        zigorAlarmLogId                 PositiveInteger,
        zigorAlarmLogDescr          AutonomousType,
        zigorAlarmLogTime           ZDateAndTime,
        zigorAlarmLogElementList    ElementList,
        zigorAlarmLogCondition          AlarmCondition
}

zigorAlarmLogId OBJECT-TYPE
        SYNTAX              PositiveInteger
        MAX-ACCESS          not-accessible
        STATUS              current
        DESCRIPTION
                "A unique identifier for an alarm condition.  This
                value must remain constant."
        ::= { zigorAlarmLogEntry 1 }

zigorAlarmLogDescr OBJECT-TYPE
        SYNTAX              AutonomousType
        MAX-ACCESS          read-only
        STATUS              current
        DESCRIPTION
                "A reference to an alarm description object.  The
                object referenced should not be accessible, but rather
                be used to provide a unique description of the alarm
                condition."
        ::= { zigorAlarmLogEntry 2 }

zigorAlarmLogTime OBJECT-TYPE
```

```
        SYNTAX          ZDateAndTime
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "Date and time when the alarm condition was detected."
        ::= { zigorAlarmLogEntry 3 }

zigorAlarmLogElementList OBJECT-TYPE
        SYNTAX          ElementList
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "Items where the alarm is active."
        ::= { zigorAlarmLogEntry 4 }

zigorAlarmLogCondition OBJECT-TYPE
        SYNTAX          AlarmCondition
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "Indicates alarm condition."
        ::= { zigorAlarmLogEntry 5 }

--
-- Traps
--
zigorAlarmLogTraps OBJECT IDENTIFIER ::= { zigorAlarmLogMIB 2 }

zigorTrapAlarmLogEntryAdded NOTIFICATION-TYPE
      OBJECTS { zigorAlarmLogId, zigorAlarmLogDescr, zigorAlarmLogElementList,
zigorAlarmLogCondition }
        STATUS  current
        DESCRIPTION
              "This trap is sent each time an alarm is inserted into
                the alarm log table."
        ::= { zigorAlarmLogTraps 1 }

END
```

2.6 MIB DEFINITIONS: ALARM

```
ZIGOR-ALARM-MIB DEFINITIONS ::= BEGIN

IMPORTS
        MODULE-IDENTITY,
        OBJECT-TYPE,
        OBJECT-IDENTITY,
        Integer32
                FROM SNMPv2-SMI
        TEXTUAL-CONVENTION,
        AutonomousType,
        TruthValue
                FROM SNMPv2-TC
        PositiveInteger,
        ElementList,
        ZDateAndTime
                FROM ZIGOR-TC
        zigorMgmt,
        zigorExperiment
                FROM ZIGOR-SMI;
```

```
zigorAlarmMIB    MODULE-IDENTITY
        LAST-UPDATED       "201003071130Z"
        ORGANIZATION       "Corporazion Zigor, S.A."
        CONTACT-INFO
                "       Corporacion Zigor, S.A.
                        Depto. I+D

                Postal: C/ Portal de Gamarra, 28
                        C.P 01013 Vitoria-Gasteiz , Alava
                        (Spain)

                Tel:    +34 (945) 214 600

                E-mail: zigor@zigor.com"
        DESCRIPTION
                "MIB de alarmas"
        ::= { zigorExperiment 5 }

AlarmCondition ::= TEXTUAL-CONVENTION
        STATUS          current
        DESCRIPTION
                "Tipo para representar condicion de alarma."
        SYNTAX          INTEGER {
                active(1),
                inactive(2),
                reconized(3),
                blocked(4)
        }

AlarmSeverity ::= TEXTUAL-CONVENTION
        STATUS          current
        DESCRIPTION
                "Tipe to represent level of an alarm."
        SYNTAX          INTEGER {
                minor(1),
                persistent(2),
                serious(3),
                severe(4)
        }

zigorAlarm OBJECT IDENTIFIER ::= { zigorAlarmMIB 1 }

zigorAlarmsPresent OBJECT-TYPE
        SYNTAX     Integer32
        MAX-ACCESS read-only

        STATUS     current
        DESCRIPTION
                "The present number of active alarm conditions."
        ::= { zigorAlarm 1 }

zigorAlarmTable OBJECT-TYPE
        SYNTAX     SEQUENCE OF ZigorAlarmEntry
        MAX-ACCESS not-accessible
        STATUS     current
        DESCRIPTION
          "A list of alarm table entries.  The table contains
          zero, one, or many rows at any moment, depending upon
          the number of alarm conditions in effect.  The table
          is initially empty at agent startup.  The agent
```

```
            creates a row in the table each time a condition is
            detected and deletes that row when that condition no
            longer pertains.  The agent creates the first row with
            zigorAlarmId equal to 1, and increments the value of
            zigorAlarmId each time a new row is created, wrapping to
            the first free value greater than or equal to 1 when
            the maximum value of zigorAlarmId would otherwise be
            exceeded.  Consequently, after multiple operations,
            the table may become sparse, e.g., containing entries
            for rows 95, 100, 101, and 203 and the entries should
            not be assumed to be in chronological order because
            zigorAlarmId might have wrapped.

            Alarms are named by an AutonomousType (OBJECT
            IDENTIFIER), zigorAlarmDescr, to allow a single table to
            reflect well known alarms plus alarms defined by a
            particular implementation, i.e., as documented in the
            private enterprise MIB definition for the device.  No
            two rows will have the same value of zigorAlarmDescr
            since alarms define conditions.  In order to meet this
            requirement, care should be taken in the definition of
            alarm conditions to insure that a system cannot enter
            the same condition multiple times simultaneously.

            The number of rows in the table at any given time is
            reflected by the value of zigorAlarmsPresent."
        ::= { zigorAlarm 2 }

zigorAlarmEntry OBJECT-TYPE
        SYNTAX     ZigorAlarmEntry
        MAX-ACCESS not-accessible
        STATUS     current
        DESCRIPTION
                "An entry containing information applicable to a
            particular alarm."
        INDEX { zigorAlarmId }
        ::= { zigorAlarmTable 1 }

ZigorAlarmEntry ::= SEQUENCE {
        zigorAlarmId            PositiveInteger,
        zigorAlarmDescr                 AutonomousType,
        zigorAlarmTime                  ZDateAndTime,
        zigorAlarmElementList           ElementList,
        zigorAlarmCondition     AlarmCondition
}

zigorAlarmId OBJECT-TYPE
        SYNTAX                  PositiveInteger
        MAX-ACCESS              not-accessible
        STATUS                  current
        DESCRIPTION
                "A unique identifier for an alarm condition.  This
                value must remain constant."
        ::= { zigorAlarmEntry 1 }

zigorAlarmDescr OBJECT-TYPE
        SYNTAX                  AutonomousType
        MAX-ACCESS              read-only
        STATUS                  current
        DESCRIPTION
```

```
                "A reference to an alarm description object.  The
                object referenced should not be accessible, but rather
                be used to provide a unique description of the alarm
                condition."
        ::= { zigorAlarmEntry 2 }

zigorAlarmTime OBJECT-TYPE
        SYNTAX          ZDateAndTime
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "Date and time when the alarm condition was _last_
                detected."
        ::= { zigorAlarmEntry 3 }

zigorAlarmElementList OBJECT-TYPE
        SYNTAX          ElementList
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "Items where the alarm is active."
        ::= { zigorAlarmEntry 4 }

zigorAlarmCondition OBJECT-TYPE
        SYNTAX          AlarmCondition
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "Indicates alarm condition."
        ::= { zigorAlarmEntry 5 }

--
-- Alarms Configuration
--
zigorAlarmConfig OBJECT IDENTIFIER ::= { zigorAlarmMIB 2 }

zigorAlarmsCfgPresent OBJECT-TYPE
        SYNTAX    Integer32
        MAX-ACCESS read-only

        STATUS    current
        DESCRIPTION
                "The present number of alarm configuration rows."
        ::= { zigorAlarmConfig 1 }

zigorAlarmCfgTable OBJECT-TYPE
        SYNTAX    SEQUENCE OF ZigorAlarmCfgEntry
        MAX-ACCESS not-accessible
        STATUS    current
        DESCRIPTION
          "Alarms configuration table"
        ::= { zigorAlarmConfig 2 }

zigorAlarmCfgEntry OBJECT-TYPE
        SYNTAX    ZigorAlarmCfgEntry
        MAX-ACCESS not-accessible
        STATUS    current
        DESCRIPTION
                "An entry containing information applicable to a
          particular alarm."
```

```
        INDEX { zigorAlarmCfgId }
        ::= { zigorAlarmCfgTable 1 }

ZigorAlarmCfgEntry ::= SEQUENCE {
        zigorAlarmCfgId                 PositiveInteger,
        zigorAlarmCfgDescr          AutonomousType,
        zigorAlarmCfgSeverity           AlarmSeverity,
        zigorAlarmCfgNotification   TruthValue
}

zigorAlarmCfgId OBJECT-TYPE
        SYNTAX          PositiveInteger
        MAX-ACCESS      not-accessible
        STATUS          current
        DESCRIPTION
                "A unique identifier for an alarm config.  This
                value must remain constant."
        ::= { zigorAlarmCfgEntry 1 }

zigorAlarmCfgDescr OBJECT-TYPE
        SYNTAX          AutonomousType
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "A reference to an alarm description object.  The
                object referenced should not be accessible, but rather
                be used to provide a unique description of the alarm
                condition."
        ::= { zigorAlarmCfgEntry 2 }

zigorAlarmCfgSeverity OBJECT-TYPE
        SYNTAX          AlarmSeverity
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "The severity of this alarm"
        ::= { zigorAlarmCfgEntry 3 }

zigorAlarmCfgNotification OBJECT-TYPE
        SYNTAX          TruthValue
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "Type of notification for an alarm."
        ::= { zigorAlarmCfgEntry 4 }

--
-- Generic alarms
--
zigorSysAlarms OBJECT IDENTIFIER ::= { zigorAlarmMIB 3 }

zigorAlarmaStart OBJECT-IDENTITY
        STATUS          current
        DESCRIPTION
                "System start"
        ::= { zigorSysAlarms 1 }

zigorAlarmaPasswdChange OBJECT-IDENTITY
        STATUS          current
        DESCRIPTION
```

```
                "Password change. Elements shows de level which password has changed."
        ::= { zigorSysAlarms 2 }


--
-- Traps
--
zigorAlarmTraps OBJECT IDENTIFIER ::= { zigorAlarmMIB 4 }

zigorTrapAlarmEntryAdded NOTIFICATION-TYPE
      OBJECTS { zigorAlarmId, zigorAlarmDescr, zigorAlarmElementList, zigorAlarmCondition }
        STATUS  current
        DESCRIPTION
              "This trap is sent each time an alarm is inserted into
                the alarm table."
        ::= { zigorAlarmTraps 1 }

END
```

2.7 MIB DEFINITIONS: PARAMETERS

```
ZIGOR-PARAMETER-MIB DEFINITIONS ::= BEGIN

IMPORTS
        MODULE-IDENTITY,
        OBJECT-TYPE,
        Integer32
                FROM SNMPv2-SMI
        DisplayString,
        TEXTUAL-CONVENTION
                FROM SNMPv2-TC
        NonNegativeInteger,
        ZDateAndTime
                FROM ZIGOR-TC
        zigorMgmt,
        zigorExperiment
                FROM ZIGOR-SMI;

zigorParameterMIB MODULE-IDENTITY
        LAST-UPDATED      "201003071130Z"
        ORGANIZATION      "Corporacion Zigor, S.A."
        CONTACT-INFO
                "       Corporacion Zigor, S.A.
                        Depto. I+D

                Postal: C/ Portal de Gamarra, 28
                        C.P 01013 Vitoria-Gasteiz , Alava
                        (Spain)

                Tel:    +34 (945) 214 600

                E-mail: zigor@zigor.com"
        DESCRIPTION
                "Zigor Parameter MIB"
        ::= { zigorExperiment 3 }

ParamState ::= TEXTUAL-CONVENTION
        STATUS      current
        DESCRIPTION
                "Type to represent the state of the parameters.
```

```
                The returned values are:

                  temp (1)    Parameters currently in edition.
                              The system is not synchronized with
                              parameters shown.
                              5 minutes after last modification,
                              the system returns to the last active state.

                  active (2)  The parameters shown are
                              active (have not been edited)
                              The system is synchronized with
                              parameters shown.

                  factory (3) The parameters correspond to
                              factory configuration.
                              The system is synchronized with
                              parameters shown.

                Setting this variable the result is:

                  temp (1)    Saves the current edition as active
                              parameters and the system is synchronized.
                                 If successful, this variable
                              becomes active (2).

                  active (2)  Reload the active configuration,
                              cancelling any temporary state.

                  factory (3) Factory configuration is loaded.
                              This configuration is also temporary
                              should then establish temp (1)
                              if you want to save the settings
                              factory and synchronize the system."

        SYNTAX        INTEGER {
                temp(1),    -- current edition (temporary)
                active(2),  -- cancel current edition (reload "active")
                factory(3)  -- load factory parameters
        }

NotificationLang ::= TEXTUAL-CONVENTION
        STATUS        current
        DESCRIPTION
                "Type to represent the language for notifications."
        SYNTAX        INTEGER {
                english(1),
                spanish(2),
                french(3),
                italian(4),
                german(5)
        }

TimeZone ::= TEXTUAL-CONVENTION
        STATUS        current
        DESCRIPTION
                "Type to represent the TimeZone based on 'tz' database (http://www.twinsun.com/tz/tz-
link.htm) '2011a' updated."
        SYNTAX        INTEGER {
                AfricaAbidjan(1),
```

AfricaAccra(2),
AfricaAddisAbaba(3),
AfricaAlgiers(4),
AfricaAsmara(5),
AfricaAsmera(6),
AfricaBamako(7),
AfricaBangui(8),
AfricaBanjul(9),
AfricaBissau(10),
AfricaBlantyre(11),
AfricaBrazzaville(12),
AfricaBujumbura(13),
AfricaCairo(14),
AfricaCasablanca(15),
AfricaCeuta(16),
AfricaConakry(17),
AfricaDakar(18),
AfricaDaresSalaam(19),
AfricaDjibouti(20),
AfricaDouala(21),
AfricaElAaiun(22),
AfricaFreetown(23),
AfricaGaborone(24),
AfricaHarare(25),
AfricaJohannesburg(26),
AfricaKampala(27),
AfricaKhartoum(28),
AfricaKigali(29),
AfricaKinshasa(30),
AfricaLagos(31),
AfricaLibreville(32),
AfricaLome(33),
AfricaLuanda(34),
AfricaLubumbashi(35),
AfricaLusaka(36),
AfricaMalabo(37),
AfricaMaputo(38),
AfricaMaseru(39),
AfricaMbabane(40),
AfricaMogadishu(41),
AfricaMonrovia(42),
AfricaNairobi(43),
AfricaNdjamena(44),
AfricaNiamey(45),
AfricaNouakchott(46),
AfricaOuagadougou(47),
AfricaPortoNovo(48),
AfricaSaoTome(49),
AfricaTimbuktu(50),
AfricaTripoli(51),
AfricaTunis(52),
AfricaWindhoek(53),
AmericaAdak(54),
AmericaAnchorage(55),
AmericaAnguilla(56),
AmericaAntigua(57),
AmericaAraguaina(58),
AmericaArgentina(59),
AmericaAruba(60),
AmericaAsuncion(61),

AmericaAtikokan(62),
AmericaAtka(63),
AmericaBahia(64),
AmericaBahiaBanderas(65),
AmericaBarbados(66),
AmericaBelem(67),
AmericaBelize(68),
AmericaBlancSablon(69),
AmericaBoaVista(70),
AmericaBogota(71),
AmericaBoise(72),
AmericaBuenosAires(73),
AmericaCambridgeBay(74),
AmericaCampoGrande(75),
AmericaCancun(76),
AmericaCaracas(77),
AmericaCatamarca(78),
AmericaCayenne(79),
AmericaCayman(80),
AmericaChicago(81),
AmericaChihuahua(82),
AmericaCoralHarbour(83),
AmericaCordoba(84),
AmericaCostaRica(85),
AmericaCuiaba(86),
AmericaCuracao(87),
AmericaDanmarkshavn(88),
AmericaDawson(89),
AmericaDawsonCreek(90),
AmericaDenver(91),
AmericaDetroit(92),
AmericaDominica(93),
AmericaEdmonton(94),
AmericaEirunepe(95),
AmericaElSalvador(96),
AmericaEnsenada(97),
AmericaFortWayne(98),
AmericaFortaleza(99),
AmericaGlaceBay(100),
AmericaGodthab(101),
AmericaGooseBay(102),
AmericaGrandTurk(103),
AmericaGrenada(104),
AmericaGuadeloupe(105),
AmericaGuatemala(106),
AmericaGuayaquil(107),
AmericaGuyana(108),
AmericaHalifax(109),
AmericaHavana(110),
AmericaHermosillo(111),
AmericaIndiana(112),
AmericaIndianapolis(113),
AmericaInuvik(114),
AmericaIqaluit(115),
AmericaJamaica(116),
AmericaJujuy(117),
AmericaJuneau(118),
AmericaKentucky(119),
AmericaKnoxIN(120),
AmericaLaPaz(121),

AmericaLima(122),
AmericaLosAngeles(123),
AmericaLouisville(124),
AmericaMaceio(125),
AmericaManagua(126),
AmericaManaus(127),
AmericaMarigot(128),
AmericaMartinique(129),
AmericaMatamoros(130),
AmericaMazatlan(131),
AmericaMendoza(132),
AmericaMenominee(133),
AmericaMerida(134),
AmericaMexicoCity(135),
AmericaMiquelon(136),
AmericaMoncton(137),
AmericaMonterrey(138),
AmericaMontevideo(139),
AmericaMontreal(140),
AmericaMontserrat(141),
AmericaNassau(142),
AmericaNewYork(143),
AmericaNipigon(144),
AmericaNome(145),
AmericaNoronha(146),
AmericaNorthDakota(147),
AmericaOjinaga(148),
AmericaPanama(149),
AmericaPangnirtung(150),
AmericaParamaribo(151),
AmericaPhoenix(152),
AmericaPortauPrince(153),
AmericaPortofSpain(154),
AmericaPortoAcre(155),
AmericaPortoVelho(156),
AmericaPuertoRico(157),
AmericaRainyRiver(158),
AmericaRankinInlet(159),
AmericaRecife(160),
AmericaRegina(161),
AmericaResolute(162),
AmericaRioBranco(163),
AmericaRosario(164),
AmericaSantaIsabel(165),
AmericaSantarem(166),
AmericaSantiago(167),
AmericaSantoDomingo(168),
AmericaSaoPaulo(169),
AmericaScoresbysund(170),
AmericaShiprock(171),
AmericaStBarthelemy(172),
AmericaStJohns(173),
AmericaStKitts(174),
AmericaStLucia(175),
AmericaStThomas(176),
AmericaStVincent(177),
AmericaSwiftCurrent(178),
AmericaTegucigalpa(179),
AmericaThule(180),
AmericaThunderBay(181),

AmericaTijuana(182),
AmericaToronto(183),
AmericaTortola(184),
AmericaVancouver(185),
AmericaVirgin(186),
AmericaWhitehorse(187),
AmericaWinnipeg(188),
AmericaYakutat(189),
AmericaYellowknife(190),
AntarcticaCasey(191),
AntarcticaDavis(192),
AntarcticaDumontDUrville(193),
AntarcticaMacquarie(194),
AntarcticaMawson(195),
AntarcticaMcMurdo(196),
AntarcticaPalmer(197),
AntarcticaRothera(198),
AntarcticaSouthPole(199),
AntarcticaSyowa(200),
AntarcticaVostok(201),
ArcticLongyearbyen(202),
AsiaAden(203),
AsiaAlmaty(204),
AsiaAmman(205),
AsiaAnadyr(206),
AsiaAqtau(207),
AsiaAqtobe(208),
AsiaAshgabat(209),
AsiaAshkhabad(210),
AsiaBaghdad(211),
AsiaBahrain(212),
AsiaBaku(213),
AsiaBangkok(214),
AsiaBeirut(215),
AsiaBishkek(216),
AsiaBrunei(217),
AsiaCalcutta(218),
AsiaChoibalsan(219),
AsiaChongqing(220),
AsiaChungking(221),
AsiaColombo(222),
AsiaDacca(223),
AsiaDamascus(224),
AsiaDhaka(225),
AsiaDili(226),
AsiaDubai(227),
AsiaDushanbe(228),
AsiaGaza(229),
AsiaHarbin(230),
AsiaHoChiMinh(231),
AsiaHongKong(232),
AsiaHovd(233),
AsiaIrkutsk(234),
AsiaIstanbul(235),
AsiaJakarta(236),
AsiaJayapura(237),
AsiaJerusalem(238),
AsiaKabul(239),
AsiaKamchatka(240),
AsiaKarachi(241),

AsiaKashgar(242),
AsiaKathmandu(243),
AsiaKatmandu(244),
AsiaKolkata(245),
AsiaKrasnoyarsk(246),
AsiaKualaLumpur(247),
AsiaKuching(248),
AsiaKuwait(249),
AsiaMacao(250),
AsiaMacau(251),
AsiaMagadan(252),
AsiaMakassar(253),
AsiaManila(254),
AsiaMuscat(255),
AsiaNicosia(256),
AsiaNovokuznetsk(257),
AsiaNovosibirsk(258),
AsiaOmsk(259),
AsiaOral(260),
AsiaPhnomPenh(261),
AsiaPontianak(262),
AsiaPyongyang(263),
AsiaQatar(264),
AsiaQyzylorda(265),
AsiaRangoon(266),
AsiaRiyadh(267),
AsiaRiyadh87(268),
AsiaRiyadh88(269),
AsiaRiyadh89(270),
AsiaSaigon(271),
AsiaSakhalin(272),
AsiaSamarkand(273),
AsiaSeoul(274),
AsiaShanghai(275),
AsiaSingapore(276),
AsiaTaipei(277),
AsiaTashkent(278),
AsiaTbilisi(279),
AsiaTehran(280),
AsiaTelAviv(281),
AsiaThimbu(282),
AsiaThimphu(283),
AsiaTokyo(284),
AsiaUjungPandang(285),
AsiaUlaanbaatar(286),
AsiaUlanBator(287),
AsiaUrumqi(288),
AsiaVientiane(289),
AsiaVladivostok(290),
AsiaYakutsk(291),
AsiaYekaterinburg(292),
AsiaYerevan(293),
AtlanticAzores(294),
AtlanticBermuda(295),
AtlanticCanary(296),
AtlanticCapeVerde(297),
AtlanticFaeroe(298),
AtlanticFaroe(299),
AtlanticJanMayen(300),
AtlanticMadeira(301),

AtlanticReykjavik(302),
AtlanticSouthGeorgia(303),
AtlanticStHelena(304),
AtlanticStanley(305),
AustraliaACT(306),
AustraliaAdelaide(307),
AustraliaBrisbane(308),
AustraliaBrokenHill(309),
AustraliaCanberra(310),
AustraliaCurrie(311),
AustraliaDarwin(312),
AustraliaEucla(313),
AustraliaHobart(314),
AustraliaLHI(315),
AustraliaLindeman(316),
AustraliaLordHowe(317),
AustraliaMelbourne(318),
AustraliaNSW(319),
AustraliaNorth(320),
AustraliaPerth(321),
AustraliaQueensland(322),
AustraliaSouth(323),
AustraliaSydney(324),
AustraliaTasmania(325),
AustraliaVictoria(326),
AustraliaWest(327),
AustraliaYancowinna(328),
EuropeAmsterdam(329),
EuropeAndorra(330),
EuropeAthens(331),
EuropeBelfast(332),
EuropeBelgrade(333),
EuropeBerlin(334),
EuropeBratislava(335),
EuropeBrussels(336),
EuropeBucharest(337),
EuropeBudapest(338),
EuropeChisinau(339),
EuropeCopenhagen(340),
EuropeDublin(341),
EuropeGibraltar(342),
EuropeGuernsey(343),
EuropeHelsinki(344),
EuropeIsleofMan(345),
EuropeIstanbul(346),
EuropeJersey(347),
EuropeKaliningrad(348),
EuropeKiev(349),
EuropeLisbon(350),
EuropeLjubljana(351),
EuropeLondon(352),
EuropeLuxembourg(353),
EuropeMadrid(354),
EuropeMalta(355),
EuropeMariehamn(356),
EuropeMinsk(357),
EuropeMonaco(358),
EuropeMoscow(359),
EuropeNicosia(360),
EuropeOslo(361),

EuropeParis(362),
EuropePodgorica(363),
EuropePrague(364),
EuropeRiga(365),
EuropeRome(366),
EuropeSamara(367),
EuropeSanMarino(368),
EuropeSarajevo(369),
EuropeSimferopol(370),
EuropeSkopje(371),
EuropeSofia(372),
EuropeStockholm(373),
EuropeTallinn(374),
EuropeTirane(375),
EuropeTiraspol(376),
EuropeUzhgorod(377),
EuropeVaduz(378),
EuropeVatican(379),
EuropeVienna(380),
EuropeVilnius(381),
EuropeVolgograd(382),
EuropeWarsaw(383),
EuropeZagreb(384),
EuropeZaporozhye(385),
EuropeZurich(386),
IndianAntananarivo(387),
IndianChagos(388),
IndianChristmas(389),
IndianCocos(390),
IndianComoro(391),
IndianKerguelen(392),
IndianMahe(393),
IndianMaldives(394),
IndianMauritius(395),
IndianMayotte(396),
IndianReunion(397),
PacificApia(398),
PacificAuckland(399),
PacificChatham(400),
PacificChuuk(401),
PacificEaster(402),
PacificEfate(403),
PacificEnderbury(404),
PacificFakaofo(405),
PacificFiji(406),
PacificFunafuti(407),
PacificGalapagos(408),
PacificGambier(409),
PacificGuadalcanal(410),
PacificGuam(411),
PacificHonolulu(412),
PacificJohnston(413),
PacificKiritimati(414),
PacificKosrae(415),
PacificKwajalein(416),
PacificMajuro(417),
PacificMarquesas(418),
PacificMidway(419),
PacificNauru(420),
PacificNiue(421),

```
                PacificNorfolk(422),
                PacificNoumea(423),
                PacificPagoPago(424),
                PacificPalau(425),
                PacificPitcairn(426),
                PacificPohnpei(427),
                PacificPonape(428),
                PacificPortMoresby(429),
                PacificRarotonga(430),
                PacificSaipan(431),
                PacificSamoa(432),
                PacificTahiti(433),
                PacificTarawa(434),
                PacificTongatapu(435),
                PacificTruk(436),
                PacificWake(437),
                PacificWallis(438),
                PacificYap(439),
                localtime(440)
        }

MBBaudrate ::= TEXTUAL-CONVENTION
        STATUS      current
        DESCRIPTION
                "Type to represent the Modbus RTU Baudrate"
        SYNTAX      INTEGER {
                s9600(1),
                s19200(2),
                s38400(3),
                s57600(4),
                s115200(5)
        }
MBParity ::= TEXTUAL-CONVENTION
        STATUS      current
        DESCRIPTION
                "Type to represent the Modbus RTU Parity"
        SYNTAX      INTEGER {
                none(1),
                even(2),
                odd(3)
        }
MBMode ::= TEXTUAL-CONVENTION
        STATUS      current
        DESCRIPTION
                "Type to represent the Modbus Mode"
        SYNTAX      INTEGER {
                rtu(1),
                tcp(2)
        }

zigorParamSystem  OBJECT IDENTIFIER ::= { zigorParameterMIB 1 }
zigorParamNet     OBJECT IDENTIFIER ::= { zigorParameterMIB 2 }
zigorParamDialUp  OBJECT IDENTIFIER ::= { zigorParameterMIB 3 }
zigorParamControl OBJECT IDENTIFIER ::= { zigorParameterMIB 4 }
zigorParamModbus  OBJECT IDENTIFIER ::= { zigorParameterMIB 5 }

zigorSysName OBJECT-TYPE
        SYNTAX          DisplayString
        MAX-ACCESS      read-write
        STATUS          current
```

```
        DESCRIPTION
                "Name for this managed node.
                If the name is unknown, the value is the zero-length
                string."
        ::= { zigorParamSystem 1 }

zigorSysDescr OBJECT-TYPE
        SYNTAX          DisplayString
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "A textual description of the entity."
        ::= { zigorParamSystem 2 }

zigorSysLocation OBJECT-TYPE
        SYNTAX          DisplayString
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "The physical location of this node (e.g., `telephone
                closet, 3rd floor').  If the location is unknown, the value
                is the zero-length string."
        ::= { zigorParamSystem 3 }

zigorSysContact OBJECT-TYPE
        SYNTAX          DisplayString
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "The textual identification of the contact person for this
                managed node, together with information on how to contact
                this person.  If no contact information is known, the value
                is the zero-length string."
        ::= { zigorParamSystem 4 }

zigorSysPasswordTable OBJECT-TYPE
        SYNTAX          SEQUENCE OF ZigorSysPasswordEntry
        MAX-ACCESS      not-accessible
        STATUS          current
        DESCRIPTION
                "Table of passwords."
        ::= { zigorParamSystem 5 }

zigorSysPasswordEntry OBJECT-TYPE
        SYNTAX          ZigorSysPasswordEntry
        MAX-ACCESS      not-accessible
        STATUS          current
        DESCRIPTION
                "Row (conceptual) in table of passwords."
        ::= { zigorSysPasswordTable 1 }

ZigorSysPasswordEntry ::= SEQUENCE {
        zigorSysPasswordIndex       NonNegativeInteger,
        zigorSysPasswordPass        DisplayString,
        zigorSysPasswordDescr       DisplayString
}

zigorSysPasswordIndex OBJECT-TYPE
        SYNTAX          NonNegativeInteger
        MAX-ACCESS      not-accessible
```

```
        STATUS          current
        DESCRIPTION
                "The auxiliary variable used for identifying instances of
                the columnar objects in the zigorSysPasswordTable."
        ::= { zigorSysPasswordEntry 1 }

zigorSysPasswordPass OBJECT-TYPE
        SYNTAX          DisplayString
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "Password."
        ::= { zigorSysPasswordEntry 2 }

zigorSysPasswordDescr OBJECT-TYPE
        SYNTAX          DisplayString
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "Password description (role, access, etc.)."
        ::= { zigorSysPasswordEntry 3 }

zigorSysCode OBJECT-TYPE
        SYNTAX          DisplayString
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "The identification code of the manufacturer."
        ::= { zigorParamSystem 6 }

zigorSysVersion OBJECT-TYPE
        SYNTAX          DisplayString
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "Firmware Version."
        ::= { zigorParamSystem 7 }

zigorSysDate OBJECT-TYPE
        SYNTAX          ZDateAndTime
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "Date and time."
        ::= { zigorParamSystem 8 }

zigorSysTimeZone OBJECT-TYPE
        SYNTAX          TimeZone
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "Time Zone."
        ::= { zigorParamSystem 9 }

zigorSysNotificationLang OBJECT-TYPE
        SYNTAX          NotificationLang
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "Language for notifications. (Only in firmware >=1.1.2)"
```

```
        ::= { zigorParamSystem 10 }

-- DialUp
zigorDialUpPin OBJECT-TYPE
        SYNTAX          DisplayString
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "SIM PIN Number"
        ::= { zigorParamDialUp 1 }

zigorDialUpSmsNum1 OBJECT-TYPE
        SYNTAX          DisplayString
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "Mobile number to send SMS (1)."
        ::= { zigorParamDialUp 2 }

zigorDialUpSmsNum2 OBJECT-TYPE
        SYNTAX          DisplayString
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "Mobile number to send SMS (2)."
        ::= { zigorParamDialUp 3 }

zigorDialUpSmsNum3 OBJECT-TYPE
        SYNTAX          DisplayString
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "Mobile number to send SMS (3)."
        ::= { zigorParamDialUp 4 }

zigorDialUpSmsNum4 OBJECT-TYPE
        SYNTAX          DisplayString
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "Mobile number to send SMS (4). Only in firmware >=1.1.2"
        ::= { zigorParamDialUp 5 }

-- Net
zigorNetIP OBJECT-TYPE
        --SYNTAX          INTEGER32
        --DISPLAY-HINT    "3a.3a.3a.3a"
        SYNTAX          DisplayString
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "IP Adrress"
        ::= { zigorParamNet 1 }

zigorNetMask OBJECT-TYPE
        --SYNTAX          INTEGER32
        --DISPLAY-HINT    "3a.3a.3a.3a"
        SYNTAX          DisplayString (SIZE(0..255))
        MAX-ACCESS      read-write
        STATUS          current
```

```
        DESCRIPTION
                "Network Mask"
        ::= { zigorParamNet 2 }

zigorNetGateway OBJECT-TYPE
        --SYNTAX              INTEGER32
        --DISPLAY-HINT        "3a.3a.3a.3a"
        SYNTAX                DisplayString (SIZE(0..255))
        MAX-ACCESS            read-write
        STATUS                current
        DESCRIPTION
                "Default Gateway"
        ::= { zigorParamNet 3 }

zigorNetPortVnc OBJECT-TYPE
        SYNTAX                INTEGER (0..65535)
        MAX-ACCESS            read-write
        STATUS                current
        DESCRIPTION
                "TCP Port for VNC communication by Web Access."
        ::= { zigorParamNet 4 }

zigorNetPortHttp OBJECT-TYPE
        SYNTAX                INTEGER (0..65535)
        MAX-ACCESS            read-write
        STATUS                current
        DESCRIPTION
                "TCP Port for Web Access."
        ::= { zigorParamNet 5 }

zigorNetDNS OBJECT-TYPE
        SYNTAX                DisplayString (SIZE(0..255))
        MAX-ACCESS            read-write
        STATUS                current
        DESCRIPTION
                "Domain Name Server (Only in firmware >=1.1.2)"
        ::= { zigorParamNet 6 }

zigorNetEmail1 OBJECT-TYPE
        SYNTAX                DisplayString
        MAX-ACCESS            read-write
        STATUS                current
        DESCRIPTION
                "Email Address 1 (Only in firmware >=1.1.2)"
        ::= { zigorParamNet 7 }

zigorNetEmail2 OBJECT-TYPE
        SYNTAX                DisplayString
        MAX-ACCESS            read-write
        STATUS                current
        DESCRIPTION
                "Email Address 2 (Only in firmware >=1.1.2)"
        ::= { zigorParamNet 8 }

zigorNetEmail3 OBJECT-TYPE
        SYNTAX                DisplayString
        MAX-ACCESS            read-write
        STATUS                current
        DESCRIPTION
                "Email Address 3 (Only in firmware >=1.1.2)"
```

```
        ::= { zigorParamNet 9 }

zigorNetEmail4 OBJECT-TYPE
        SYNTAX          DisplayString
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "Email Address 4 (Only in firmware >=1.1.2)"
        ::= { zigorParamNet 10 }

zigorNetSmtp OBJECT-TYPE
        SYNTAX          DisplayString
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "SMTP email server (Only in firmware >=1.1.2)"
        ::= { zigorParamNet 11 }

zigorNetSmtpUser OBJECT-TYPE
        SYNTAX          DisplayString
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "SMTP account user (Only in firmware >=1.1.2)"
        ::= { zigorParamNet 12 }

zigorNetSmtpPass OBJECT-TYPE
        SYNTAX          DisplayString
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "SMTP account password (Only in firmware >=1.1.2)"
        ::= { zigorParamNet 13 }

zigorNetSmtpEmail OBJECT-TYPE
        SYNTAX          DisplayString
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "SMTP account email (Only in firmware >=1.1.2)"
        ::= { zigorParamNet 14 }

zigorNetSmtpAuth OBJECT-TYPE
        SYNTAX          DisplayString
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "SMTP account authentication (NO/SSL/TLS). Only in firmware >=1.1.2"
        ::= { zigorParamNet 15 }

zigorNetSmtpTest OBJECT-TYPE
        SYNTAX          DisplayString
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "SMTP email for test. (Only in firmware >=1.1.2)"
        ::= { zigorParamNet 16 }

-- Control
zigorCtrlParamState OBJECT-TYPE
```

```
        SYNTAX          ParamState
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                ""
        ::= { zigorParamControl 1 }

-- MODBUS
zigorModbusAddress OBJECT-TYPE
        SYNTAX          INTEGER (0..247)
        UNITS           ""
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "MODBUS RTU Address"
        ::= { zigorParamModbus 1 }

zigorModbusBaudrate OBJECT-TYPE
        SYNTAX          MBBaudrate
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "MODBUS RTU Baudrate"
        ::= { zigorParamModbus 2 }

zigorModbusParity OBJECT-TYPE
        SYNTAX          MBParity
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "MODBUS RTU Parity"
        ::= { zigorParamModbus 3 }

zigorModbusMode OBJECT-TYPE
        SYNTAX          MBMode
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "MODBUS Mode"
        ::= { zigorParamModbus 4 }

zigorModbusTCPPort OBJECT-TYPE
        SYNTAX          INTEGER (1..65535)
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "MODBUS TCP Port"
        ::= { zigorParamModbus 5 }

zigorModbusTCPTimeout OBJECT-TYPE
        SYNTAX          INTEGER (1..65535)
        UNITS           "seconds"
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION
                "MODBUS TCP Inactivity Timeout for Connection Reset"
        ::= { zigorParamModbus 6 }

END
```

3 MODBUS COMMUNICATION PROTOCOL

Communications with the user, characteristics:

- DB9 terminal → RTU Communication
- J45 terminal → TCP/IP Communication

This section describes the ModBus communications, the user can interact with the variables and the solar inverter's parameters.

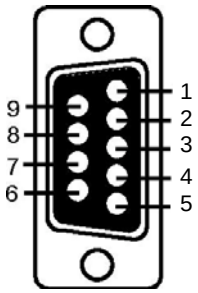
3.1 RTU MODBUS COMMUNICATION

To establish the RTU ModBus communication with the solar inverters ZIGOR SOLAR CTR3, it is necessary to connect to the CON11 terminal of the communication board of the inverter (see the inverter's manual).

The RTU ModBus is an open protocol, and the information from the inverter is given trough RS-485 communication. It will be necessary to use a communication from RS-485 to RS-485.

Configuration of RS-485 communication using the port CON11:

PIN number	Polarity
3	CHANNEL A(+)
8	CHANNEL B(-)
5	GROUND



ModBus RTU configuration parameters:

Default Address = 1

Default Speed = 38400

Default Parity = Even

Fixed parameters: 8 Data bits & 1 Stop bit

3.2 TCP/IP MODBUS COMMUNICATION

To do the TCP/IP ModBus communication with the ZIGOR SOLAR CTR3 inverters, it is necessary to connect to the RJ45 terminal from the communication board of the inverter (see the inverter's manual)

ModBus TCP configuration parameters:

Default TCP Port = 502

Default Modbus TCP Inactivity Timeout for Connection Reset = 600s

3.3 MODBUS MAP

In the following sections the accessible variables in the system are described, by means of the communication, depending on the type of the variable and its accessibility.

- Input Registers (Status Variables)
- Discrete Inputs (Boolean type Status Variables)
- Holding Registers (Parameters, active alarms and alarms log)

3.3.1 INPUT REGISTERS

Function code = 0x04

ADDRESS	DESCRIPTION	TYPE	UNITS	SCALE	NOTES
0	Model	ASCIIx20			
10	Architecture	ENUM	1=ZIGOR_SOLAR_CTR3-300, 2=ZIGOR_SOLAR_CTR3-150, 3=ZIGOR_SOLAR_CTR3-100		
11	Code	ASCIIx6			
14	Firmware	ASCIIx36			
32	Sunrise Time	UINT32	seconds	1	
34	Sunset Time	UINT32	seconds	1	
36	Active Power	INT16	kW	0.1	
37	Phase R Active Power	INT16	kW	0.1	
38	Phase S Active Power	INT16	kW	0.1	
39	Phase T Active Power	INT16	kW	0.1	
40	Internal Derating	UINT16		0.001	
41	Aparent Power	INT16	kVA	0.1	
42	Phase R Aparent Power	INT16	kVA	0.1	
43	Phase S Aparent Power	INT16	kVA	0.1	
44	Phase T Aparent Power	INT16	kVA	0.1	
45	Reactive Power	INT16	kVAr	0.1	
46	Power Factor	INT16		0.001	
47	Active Energy	UINT32	kWh	0.1	
49	Phase R Voltage	UINT16	V	0.1	
50	Phase S Voltage	UINT16	V	0.1	
51	Phase T Voltage	UINT16	V	0.1	
52	Phase R AC Current	INT16	A	0.1	
53	Phase S AC Current	INT16	A	0.1	
54	Phase T AC Current	INT16	A	0.1	
55	Nominal AC Voltage	UINT16	V	0.1	
56	Minimum AC Voltage for Connection	UINT16	V	0.1	
57	Maximum AC Voltage for Connection	UINT16	V	0.1	
58	Minimum AC Voltage for Disconnection	UINT16	V	0.1	
59	Maximum AC Voltage for Disconnection	UINT16	V	0.1	
60	Frequency	UINT16	Hz	0.01	
61	Nominal Frequency	UINT16	Hz	0.01	
62	Minimun Frequency for Connection	UINT16	Hz	0.01	
63	Maximun Frequency for Connection	UINT16	Hz	0.01	
64	Minimun Frequency for Disconnection	UINT16	Hz	0.01	
65	Maximun Frequency for Disconnection	UINT16	Hz	0.01	
66	Photovoltaic Voltage	INT16	V	0.1	
67	Input Current	INT16	A	0.1	
68	Irradiance	UINT16	W/m^2	1	* Optional

69	Insulation Resistance	INT16	kOhms	1	
70	Cabinet Temperature	INT16	ºC	1	
71	Room Temperature	INT16	ºC	1	
72	Inverter 1 Heatsink Temperature	INT16	ºC	1	ºC
73	Inverter 2 Heatsink Temperature	INT16	ºC	1	ºC
74	System Status	ENUM	1=Stop, 2=Wait, 3=Start, 4=Fail, 5=MPPT, 6=Disconnected		

STRINGS

1000	Mean Current of total Strings	INT16	A	0.001	
1001	Mean Current in String 1	INT16	A	0.001	
1002	Mean Current in String 2	INT16	A	0.001	
1003	Mean Current in String 3	INT16	A	0.001	
1004	Mean Current in String 4	INT16	A	0.001	
1005	Mean Current in String 5	INT16	A	0.001	
1006	Mean Current in String 6	INT16	A	0.001	
1007	Mean Current in String 7	INT16	A	0.001	
1008	Mean Current in String 8	INT16	A	0.001	
1009	Current Value 1 of String 1	INT16	A	0.001	
1010	Current Value 2 of String 1	INT16	A	0.001	
1011	Current Value 3 of String 1	INT16	A	0.001	
1012	Current Value 4 of String 1	INT16	A	0.001	
1013	Current Value 5 of String 1	INT16	A	0.001	
1014	Current Value 6 of String 1	INT16	A	0.001	
1015	Current Value 7 of String 1	INT16	A	0.001	
1016	Current Value 8 of String 1	INT16	A	0.001	
1017	Current Value 1 of String 2	INT16	A	0.001	
1018	Current Value 2 of String 2	INT16	A	0.001	
1019	Current Value 3 of String 2	INT16	A	0.001	
1020	Current Value 4 of String 2	INT16	A	0.001	
1021	Current Value 5 of String 2	INT16	A	0.001	
1022	Current Value 6 of String 2	INT16	A	0.001	
1023	Current Value 7 of String 2	INT16	A	0.001	
1024	Current Value 8 of String 2	INT16	A	0.001	
1025	Current Value 1 of String 3	INT16	A	0.001	
1026	Current Value 2 of String 3	INT16	A	0.001	
1027	Current Value 3 of String 3	INT16	A	0.001	
1028	Current Value 4 of String 3	INT16	A	0.001	
1029	Current Value 5 of String 3	INT16	A	0.001	
1030	Current Value 6 of String 3	INT16	A	0.001	
1031	Current Value 7 of String 3	INT16	A	0.001	
1032	Current Value 8 of String 3	INT16	A	0.001	
1033	Current Value 1 of String 4	INT16	A	0.001	
1034	Current Value 2 of String 4	INT16	A	0.001	
1035	Current Value 3 of String 4	INT16	A	0.001	

1036	Current Value 4 of String 4	INT16	A	0.001	
1037	Current Value 5 of String 4	INT16	A	0.001	
1038	Current Value 6 of String 4	INT16	A	0.001	
1039	Current Value 7 of String 4	INT16	A	0.001	
1040	Current Value 8 of String 4	INT16	A	0.001	
1041	Current Value 1 of String 5	INT16	A	0.001	
1042	Current Value 2 of String 5	INT16	A	0.001	
1043	Current Value 3 of String 5	INT16	A	0.001	
1044	Current Value 4 of String 5	INT16	A	0.001	
1045	Current Value 5 of String 5	INT16	A	0.001	
1046	Current Value 6 of String 5	INT16	A	0.001	
1047	Current Value 7 of String 5	INT16	A	0.001	
1048	Current Value 8 of String 5	INT16	A	0.001	
1049	Current Value 1 of String 6	INT16	A	0.001	
1050	Current Value 2 of String 6	INT16	A	0.001	
1051	Current Value 3 of String 6	INT16	A	0.001	
1052	Current Value 4 of String 6	INT16	A	0.001	
1053	Current Value 5 of String 6	INT16	A	0.001	
1054	Current Value 6 of String 6	INT16	A	0.001	
1055	Current Value 7 of String 6	INT16	A	0.001	
1056	Current Value 8 of String 6	INT16	A	0.001	
1057	Current Value 1 of String 7	INT16	A	0.001	
1058	Current Value 2 of String 7	INT16	A	0.001	
1059	Current Value 3 of String 7	INT16	A	0.001	
1060	Current Value 4 of String 7	INT16	A	0.001	
1061	Current Value 5 of String 7	INT16	A	0.001	
1062	Current Value 6 of String 7	INT16	A	0.001	
1063	Current Value 7 of String 7	INT16	A	0.001	
1064	Current Value 8 of String 7	INT16	A	0.001	
1065	Current Value 1 of String 8	INT16	A	0.001	
1066	Current Value 2 of String 8	INT16	A	0.001	
1067	Current Value 3 of String 8	INT16	A	0.001	
1068	Current Value 4 of String 8	INT16	A	0.001	
1069	Current Value 5 of String 8	INT16	A	0.001	
1070	Current Value 6 of String 8	INT16	A	0.001	
1071	Current Value 7 of String 8	INT16	A	0.001	
1072	Current Value 8 of String 8	INT16	A	0.001	

3.3.2 DISCRETE INPUTS (BOOLEANS)

Function code = 0x02

ADDRESS	DESCRIPTION	TYPE	UNITS	NOTES
0	Start-Stop Switch	BOOL	1=OPEN, 0=CLOSE	
1	DC Contactor Status	BOOL	1=OFF, 0=ON	
2	AC Contactor Status	BOOL	1=OFF, 0=ON	
3	DC Measure Contactor	BOOL	1=OPEN, 0=CLOSE	
4	DC Powertrap	BOOL	1=OFF, 0=ON	
5	AC Powertrap	BOOL	1=OFF, 0=ON	
6	Main Switch	BOOL	1=OPEN, 0=CLOSE	
7	Open Door	BOOL	1=OPEN, 0=CLOSE	
8	External Alarm	BOOL	1=ON, 0=OFF	
9	Room Fan Command	BOOL	1=ON, 0=OFF	
10	Cabinet Fan Command	BOOL	1=OFF, 0=ON	
11	System Start Relay	BOOL	1=ON, 0=OFF	
12	System Fail Relay	BOOL	1=OK, 0=FAIL	
13	Emergency Stop Relay	BOOL	1=ON, 0=OFF	

3.3.3 HOLDING REGISTERS - PARAMETERS

Function code = 0x03 (0x06 - 0x10)

ADDRESS	DESCRIPTION	TYPE	R/W	UNITS	SCALE	MIN	MAX
0	System Description	ASCIIx3	RW				
15	Location	ASCIIx2	RW				
25	IP Address	ASCIIx4	R				
27	Net Mask	ASCIIx4	R				
29	Gateway	ASCIIx4	R				
31	DNS	ASCIIx4	R				
33	Modbus Mode	ENUM	R	1=RTU, 2=TCP			
34	Modbus Address	UINT16	R				
35	Modbus Baudrate	ENUM	R	1=9600, 2=19200, 3=38400, 4=57600, 5=115200			
36	Modbus Parity	ENUM	R	1=NONE, 2=EVEN, 3=ODD			
37	Modbus TCP Port	UINT16	R				
38	Modbus TCP Inactivity Timeout	UINT16	RW	s	1	1	
39	Nominal Output Power	UINT16	R	kW	0.1		
40	Power Grid Regulation	ENUM	R	See User Manual			
41	Start Condition	ENUM	R	1=VPv, 2=Irradiance, 3=Solar Time			
42	Photovoltaic Voltage to Start	UINT16	R	V	0.1		
43	Minimum Irradiance to Start	UINT16	R	W/m^2	1		
44	Photovoltaic Voltage High	UINT16	R	V	0.1		
45	Derating Maximun Output	UINT16	R		0.001		
46	External Derating Value	UINT16	RW		0.001	0	1150
47	Phi Cosine (0 cancel)	INT16	RW		0.001	-1000	1000
48	Q Factor (if CosPhi==0)	INT16	RW		0.001	-1000	1000

STRINGS

ADDRESS	DESCRIPTION	TYPE	R/W	MIN	MAX	NOTES
1000	String 1 Enable	UINT16	RW	1	2	1= Enabe, 2 = Disable
1001	String 2 Enable	UINT16	RW	1	2	1= Enabe, 2 = Disable
1002	String 3 Enable	UINT16	RW	1	2	1= Enabe, 2 = Disable
1003	String 4 Enable	UINT16	RW	1	2	1= Enabe, 2 = Disable
1004	String 5 Enable	UINT16	RW	1	2	1= Enabe, 2 = Disable
1005	String 6 Enable	UINT16	RW	1	2	1= Enabe, 2 = Disable
1006	String 7 Enable	UINT16	RW	1	2	1= Enabe, 2 = Disable
1007	String 8 Enable	UINT16	RW	1	2	1= Enabe, 2 = Disable
1008	Current Measure 1 of String 1 Enable	UINT16	RW	1	2	1= Enabe, 2 = Disable
1009	Current Measure 2 of String 1 Enable	UINT16	RW	1	2	1= Enabe, 2 = Disable
1010	Current Measure 3 of String 1 Enable	UINT16	RW	1	2	1= Enabe, 2 = Disable
1011	Current Measure 4 of String 1 Enable	UINT16	RW	1	2	1= Enabe, 2 = Disable
1012	Current Measure 5 of String 1 Enable	UINT16	RW	1	2	1= Enabe, 2 = Disable
1013	Current Measure 6 of String 1 Enable	UINT16	RW	1	2	1= Enabe, 2 = Disable
1014	Current Measure 7 of String 1 Enable	UINT16	RW	1	2	1= Enabe, 2 = Disable
1015	Current Measure 8 of String 1 Enable	UINT16	RW	1	2	1= Enabe, 2 = Disable
1016	Current Measure 1 of String 2 Enable	UINT16	RW	1	2	1= Enabe, 2 = Disable
1017	Current Measure 2 of String 2 Enable	UINT16	RW	1	2	1= Enabe, 2 = Disable
1018	Current Measure 3 of String 2 Enable	UINT16	RW	1	2	1= Enabe, 2 = Disable
1019	Current Measure 4 of String 2 Enable	UINT16	RW	1	2	1= Enabe, 2 = Disable
1020	Current Measure 5 of String 2 Enable	UINT16	RW	1	2	1= Enabe, 2 = Disable
1021	Current Measure 6 of String 2 Enable	UINT16	RW	1	2	1= Enabe, 2 = Disable
1022	Current Measure 7 of String 2 Enable	UINT16	RW	1	2	1= Enabe, 2 = Disable
1023	Current Measure 8 of String 2 Enable	UINT16	RW	1	2	1= Enabe, 2 = Disable
1024	Current Measure 1 of String 3 Enable	UINT16	RW	1	2	1= Enabe, 2 = Disable
1025	Current Measure 2 of String 3 Enable	UINT16	RW	1	2	1= Enabe, 2 = Disable
1026	Current Measure 3 of String 3 Enable	UINT16	RW	1	2	1= Enabe, 2 = Disable
1027	Current Measure 4 of String 3 Enable	UINT16	RW	1	2	1= Enabe, 2 = Disable
1028	Current Measure 5 of String 3 Enable	UINT16	RW	1	2	1= Enabe, 2 = Disable
1029	Current Measure 6 of String 3 Enable	UINT16	RW	1	2	1= Enabe, 2 = Disable
1030	Current Measure 7 of String 3 Enable	UINT16	RW	1	2	1= Enabe, 2 = Disable
1031	Current Measure 8 of String 3 Enable	UINT16	RW	1	2	1= Enabe, 2 = Disable
1032	Current Measure 1 of String 4 Enable	UINT16	RW	1	2	1= Enabe, 2 = Disable
1033	Current Measure 2 of String 4 Enable	UINT16	RW	1	2	1= Enabe, 2 = Disable
1034	Current Measure 3 of String 4 Enable	UINT16	RW	1	2	1= Enabe, 2 = Disable
1035	Current Measure 4 of String 4 Enable	UINT16	RW	1	2	1= Enabe, 2 = Disable
1036	Current Measure 5 of String 4 Enable	UINT16	RW	1	2	1= Enabe, 2 = Disable
1037	Current Measure 6 of String 4 Enable	UINT16	RW	1	2	1= Enabe, 2 = Disable
1038	Current Measure 7 of String 4 Enable	UINT16	RW	1	2	1= Enabe, 2 = Disable
1039	Current Measure 8 of String 4 Enable	UINT16	RW	1	2	1= Enabe, 2 = Disable
1040	Current Measure 1 of String 5 Enable	UINT16	RW	1	2	1= Enabe, 2 = Disable
1041	Current Measure 2 of String 5 Enable	UINT16	RW	1	2	1= Enabe, 2 = Disable

1042	Current Measure 3 of String 5 Enable	UINT16	RW	1	2	1= Enabe, 2 = Disable
1043	Current Measure 4 of String 5 Enable	UINT16	RW	1	2	1= Enabe, 2 = Disable
1044	Current Measure 5 of String 5 Enable	UINT16	RW	1	2	1= Enabe, 2 = Disable
1045	Current Measure 6 of String 5 Enable	UINT16	RW	1	2	1= Enabe, 2 = Disable
1046	Current Measure 7 of String 5 Enable	UINT16	RW	1	2	1= Enabe, 2 = Disable
1047	Current Measure 8 of String 5 Enable	UINT16	RW	1	2	1= Enabe, 2 = Disable
1048	Current Measure 1 of String 6 Enable	UINT16	RW	1	2	1= Enabe, 2 = Disable
1049	Current Measure 2 of String 6 Enable	UINT16	RW	1	2	1= Enabe, 2 = Disable
1050	Current Measure 3 of String 6 Enable	UINT16	RW	1	2	1= Enabe, 2 = Disable
1051	Current Measure 4 of String 6 Enable	UINT16	RW	1	2	1= Enabe, 2 = Disable
1052	Current Measure 5 of String 6 Enable	UINT16	RW	1	2	1= Enabe, 2 = Disable
1053	Current Measure 6 of String 6 Enable	UINT16	RW	1	2	1= Enabe, 2 = Disable
1054	Current Measure 7 of String 6 Enable	UINT16	RW	1	2	1= Enabe, 2 = Disable
1055	Current Measure 8 of String 6 Enable	UINT16	RW	1	2	1= Enabe, 2 = Disable
1056	Current Measure 1 of String 7 Enable	UINT16	RW	1	2	1= Enabe, 2 = Disable
1057	Current Measure 2 of String 7 Enable	UINT16	RW	1	2	1= Enabe, 2 = Disable
1058	Current Measure 3 of String 7 Enable	UINT16	RW	1	2	1= Enabe, 2 = Disable
1059	Current Measure 4 of String 7 Enable	UINT16	RW	1	2	1= Enabe, 2 = Disable
1060	Current Measure 5 of String 7 Enable	UINT16	RW	1	2	1= Enabe, 2 = Disable
1061	Current Measure 6 of String 7 Enable	UINT16	RW	1	2	1= Enabe, 2 = Disable
1062	Current Measure 7 of String 7 Enable	UINT16	RW	1	2	1= Enabe, 2 = Disable
1063	Current Measure 8 of String 7 Enable	UINT16	RW	1	2	1= Enabe, 2 = Disable
1064	Current Measure 1 of String 8 Enable	UINT16	RW	1	2	1= Enabe, 2 = Disable
1065	Current Measure 2 of String 8 Enable	UINT16	RW	1	2	1= Enabe, 2 = Disable
1066	Current Measure 3 of String 8 Enable	UINT16	RW	1	2	1= Enabe, 2 = Disable
1067	Current Measure 4 of String 8 Enable	UINT16	RW	1	2	1= Enabe, 2 = Disable
1068	Current Measure 5 of String 8 Enable	UINT16	RW	1	2	1= Enabe, 2 = Disable
1069	Current Measure 6 of String 8 Enable	UINT16	RW	1	2	1= Enabe, 2 = Disable
1070	Current Measure 7 of String 8 Enable	UINT16	RW	1	2	1= Enabe, 2 = Disable
1071	Current Measure 8 of String 8 Enable	UINT16	RW	1	2	1= Enabe, 2 = Disable

3.3.4 HOLDING REGISTERS - ACTIVE ALARMS

Function code = 0x03 (0x06 - 0x10)

ADDRESS	DESCRIPTION	TYPE	R/W	UNITS
2000	Alarms Present	UINT16	R	
2001	Alarm Index	UINT16	RW	
2002	Alarm Condition	ENUM	R	1=active, 2=inactive, 3=recognized, 4=blocked
2003	Alarm Code (see alarm code table)	UINT16	R	
2004	Alarm Time (seconds since Jan 1 1970)	UINT32	R	

3.3.5 HOLDING REGISTERS - ALARM LOG

Function code = 0x03 (0x06 - 0x10)

ADDRESS	DESCRIPTION	TYPE	R/W	UNITS
3000	Total Entries	UINT16	R	
3001	Alarm Index	UINT16	RW	
3002	Alarm Condition	ENUM	R	1=active, 2=inactive, 3=recognized, 4=blocked
3003	Alarm Code (see alarm code table)	UINT16	R	
3004	Alarm Time (seconds since Jan 1 1970)	UINT32	R	

SB: UNIT32: FIRST WORD = Low Nibble, SECOND WORD = High Nibble

3.4 ALARM & ALARM LOG FUNCIONALITY

“Alarm Present” and “Total Entries” indicates the number of registers of Alarms and Alarms Log respectively.

Write operation in “Alarm index” to select the desired register to read in “Alarm Condition”, “Alarm Code” and “Alarm Time”.

Additionally a Read operation in “Alarm Index” increases its value by 1.

3.5 ALARMS CODE

CODE	DESCRIPTION	DEFAULT SEVERITY	NOTES
00	System Start	MINOR	
01	Password Change	MINOR	
10	Minor Insulation Failure	SERIOUS	
40	Serious Insulation Failure	SERIOUS	
49	AC Overvoltage	SERIOUS	
50	AC Undervoltage	SERIOUS	
52	Grid Frequency Error	SERIOUS	
71	Emergency Stop	SERIOUS	
70	DC Shortcircuit	SEVERE	
11	Chopper High Temperature	MINOR	
12	Inverter High Temperature	MINOR	
41	Thermostat Trigger	SERIOUS	
13	Cabinet Hig Temperature	SERIOUS	
14	Fan Failure	MINOR	
43	DC Contactor Failure	SERIOUS	
72	Open Door	SEVERE	
45	Driver Failure	SERIOUS	
44	Communication Error with DSP unit	SERIOUS	
15	Communication Error with Measures unit	MINOR	
48	DC Overvoltage	SERIOUS	
54	Reverse DC Polarity	SERIOUS	
46	Preload Failure	SERIOUS	
51	Islanding	SERIOUS	
47	Inverter Bus Voltage Error	SERIOUS	
53	Inverter Power Supply Error	SERIOUS	
17	DC Measure Contactor Error	MINOR	
73	Main Switch Disconnected	SEVERE	

18	DC Overvoltage Protection	MINOR	
19	AC Overvoltage Protection	MINOR	
30	External Alarm	PERSISTENT	
16	Communication Error with Irradiance unit	MINOR	
74	Inverter Persistent Error	SEVERE	
75	Inverter Bus Discharge Error	SERIOUS	
80	Strings Current Measures Comm. Error	MINOR	
81	Strings Protections Comm. Error	MINOR	
82	Strings Overload Circuit Breaker	MINOR	
83	Strings Overvoltage Protection	MINOR	
84	String Current 1 under limit	MINOR	
85	String Current 2 under limit	MINOR	
86	String Current 3 under limit	MINOR	
87	String Current 4 under limit	MINOR	
88	String Current 5 under limit	MINOR	
89	String Current 6 under limit	MINOR	
90	String Current 7 under limit	MINOR	
91	String Current 8 under limit	MINOR	
26	Leak Error	SERIOUS	
25	Persistent Leak Error	SEVERE	
55	Synchronism Error	MINOR	
56	Brake Error	SERIOUS	

4 STANDARDS

The ZIGOR SOLAR CTR3 described in this manual comply with the directives indicated below:

- 2004/108/CE Directive and subsequent modifications.
  - **UNE-EN 61000-6-2** (2006). Electromagnetic compatibility: Immunity standard.
  - **UNE-EN 61000-6-4** (2007). Electromagnetic compatibility: Emissions standard.
- 2006/95/CE Low Voltage Directive and subsequent modifications.
  - IEC 62109-1, Safety in power converters used in photovoltaic power systems. Part 1: General requirements.
  - IEC 62109-2, Safety in power converters used in photovoltaic power systems. Part 2: Particular requirements for inverters.

The ZIGOR SOLAR units in this manual comply with the directives indicated below:

- IEC 62116 (2008), *"Test procedure of islanding prevention measures for utility-interconnected photovoltaic inverters"*

- Spain:
  - RD 1699/2011, Connection to low power electrical energy production installations.
  - RD 444/1994, Procedures to assess conformity and protection requirements relating to electromagnetic compatibility of equipment, systems and installations.
  - RD 154/1995, Safety requirements for electrical material to be used in certain voltage limits.
  - RD 661/2007, Regulation of the electrical power production activity in special regime.
  - Operating Procedure 12.3
- Germany:
  - B DEW GT, Technical Guideline. Germany: testing, software validation and certification.
- Italy:
  - CEI 0-16: 2012, Regola tecnica di riferimiento per la connessione di utenti attivi e passivi alle reti at ed mt delle imprese distributrici di energia elettrica
- Great Britain:
  - G 59 Issue 2: 2010, recommendation for the connection of generating plant to the distribution system of licensed distribution network operators.

- France:
  - Decret: Arrête du 23 avril 2008 relatif aux prescriptions techniques de conception et de fonctionnement pour le raccordement à un réseau public de distribution d´électricité nen base tensión ou en moyenne tensión d´une installation de production d´énergie électrique.

The Spanish Standardisation and Certification Association (**AENOR**) certifies that the Quality Assurance System and the Environmental Assurance System, adopted by **ZIGOR CORPORACIÓN, S.A.** for the design, development, production and after sales service for electronic equipments for the conversion of direct and alternating current as well as electronic projections, communications systems, telemanagement applications and electrical and electronic turnkey projects, is an agreement with the requirements of the Spanish Standards **UNE-EN ISO 9001:2008** and **UNE-EN ISO 14001:2004** respectively.

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