Sky Control s.r.o.
Monitoring & Control Systems

SNMP server manual

IP Monitoring systems
IP Switchable Metered PDU's

Contents

SNMP server

1.1 Description

Monitoring and partial system configuration can be performed via SNMP protocol, supported versions 1 (RFC 1157) and 2 (RFC 1902 .. 1907). In addition, the system provides the ability to send Traps, which can be used as notifications for the logic.

1.2 Using the monitoring system via SNMP protocol

The system of monitoring allows to control several connected sensors via SNMP protocol. SNMP protocol is easy to operate and it can be used in Windows and Linux. MIB browser software is required for working with the SNMP protocol. The CD supplied together with the system includes several free MIB browser versions from different producers. Bellow is an example of using iReasoning MIB browser.

1.Open the web-interface of monitoring system in your browser.
2.Open tab «Network».
3.Select from the list «Download MIB-file» and click on the file. File download box will appear. Save file on the hard disk of your PC. This MIB-file contains information on the objects used by SNMP. If the file download box does not appear and file is opened in the browser in the form of text, click on the «File» menu and select «Save as» in the same browser.
4.Install iReasoning MIB browser software, and start it.
5.Go to the program menu «File» and select «Load MIBs...». Find the MIB-file downloaded from the monitoring system in the file box that will appear. The tree view panel (on the right side of the window) will display the new sub-tree MONITORING-SYSTEM-MIB, which is required for operating.
6.Enter the IP-address of the system of monitoring in the field “Address” of the program.
7.Select table in the sub-tree MONITORING-SYSTEM-MIB.
8.Select «Table view» in the operations menu.
9.The table with parameter values will appear.

If the table does not appear, check network settings and the IP-address entered.
Monitoring and partial configuration of the system can be carried out by protocol SNMP, versions 1 (RFC 1157) and 2 (RFC 1902..1907) are supported. Moreover, the system contains element Trap, which can be used as notification in logic blocks.

1.3 MIB

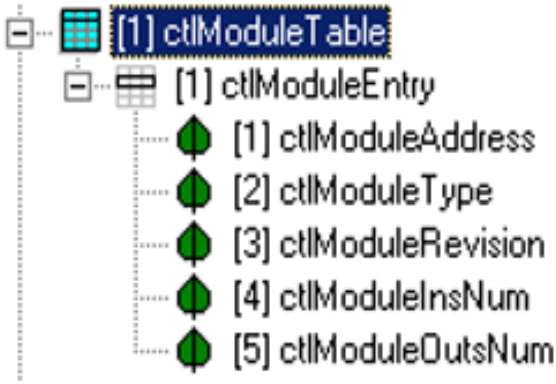
The database of the operating information of monitoring system is connected to point of MIB tree with OID=iso.org.dod.internet.private.enterprises.unilan.ctlUnit (.1.3.6.1.4.1.7788.1).
MIB systems represent the following list of tables:

MIB systems represent the following list of tables:

- ctlModuleTable (.1.3.6.1.4.1.7788.1.1) – table of system units
- ctlAllElementTable (.1.3.6.1.4.1.7788.1.2) – table of all system elements
- ctlAnalogElementTable (.1.3.6.1.4.1.7788.1.3) – table of analog system elements
- ctlDigitalElementTable (.1.3.6.1.4.1.7788.1.4) – table of digital system elements
- ctlActuatorElementTable (.1.3.6.1.4.1.7788.1.5) – table of output elements of the system
- ctlReaderElementTable (.1.3.6.1.4.1.7788.1.6) – table of system readers
- ctlMailElementTable (.1.3.6.1.4.1.7788.1.7) – table of system mail clients
- ctlLogicGroupTable (.1.3.6.1.4.1.7788.1.8) – table of system containers
- ctlLogicTable (.1.3.6.1.4.1.7788.1.9) – table of system logic

1.4 ctlModuleTable

Table ctlModuleTable contains information on all units functioning in the system at present. The quantity of columns in the table corresponds to quantity of units present in system. Each line of the table corresponds to a specific characteristic of units. The table is indexed via variable ctlModuleAddress.



Pic. 1.1: ctlModuleTable

ctlModuleAddress
Type: Unsigned32.
Access: Reading only.
Description: Address of unit on RS-485 Bus.
OID: 1.3.6.1.4.1.7788.1.1.1.1.x/

ctlModuleType
Type: Integer.
Access: Reading only.

Description: Type of unit.
OID: 1.3.6.1.4.1.7788.1.1.1.2.x

ctlModuleRevision
Type: Unsigned32.
Access: Reading only.
Description: Program version carried out by unit.
OID: 1.3.6.1.4.1.7788.1.1.1.3.x

ctlModuleInsNum
Type: Unsigned32.
Access: Reading only.
Description: Maximum quantity of elements of type "Sensors" which unit can maintain.
OID: 1.3.6.1.4.1.7788.1.1.1.4.x

ctlModuleOutsNum
Type: Unsigned32.
Access: Reading only.
Description: Maximum quantity of elements of type "Outputs" which unit can maintain.
OID: 1.3.6.1.4.1.7788.1.1.1.5.x

1.5 ctlAllElementTable

Table ctlModuleTable contains information on each element present in system at the moment. The quantity of columns in the table corresponds to quantity of the elements present in the system. Each line of the table corresponds to a specific characteristic of an element. The table is indexed via variable ctlAllElementUid.

Each element is described by the following characteristics:

ctlAllElementUid
Type: Unsigned32.
Access: Reading only.
Description: Unique identifier of an element (UID).
OID: 1.3.6.1.4.1.7788.1.2.1.1.x

ctlAllElementGid
Type: Unsigned32.
Access: Reading and saving.
Description: Unique identifier of container to which the given element belongs.
OID: 1.3.6.1.4.1.7788.1.2.1.2.x

ctlAllElementModAddr
Type: Unsigned32.
Access: Reading only.
Description: Address of unit on RS-485 Bus, to which the given element is connected. For

elements from group «Notifications» and elements that are in mode NC (Not connected), this variable is set to 0.
OID: 1.3.6.1.4.1.7788.1.2.1.3.x

ctlAllElementType
Type: Integer.
Access: Reading only.
Description: Type of element. Variable can take the following values:

- Nosens(0) – Unsupported type of element;
- temperature(1) – Temperature sensor;
- humidity(2) – Humidity sensor;
- power(4) – Voltage monitor;
- motion(5) – Motion sensor;
- magnet(6) – Contact sensor;
- button(7) – Button sensor;
- smoke(8) – Smoke sensor;
- shock(9) – Vibration sensor;
- water(10) – Leakage sensor;
- inductrelay(65) – Electromagnetic relay;
- mail(80) – Mail client;
- reader(128) - Reader.

OID: 1.3.6.1.4.1.7788.1.2.1.4.x

ctlAllElementName
Type: OCTET STRING (SIZE(0,32)).
Access: Reading and saving.
Description: Name of the element.
OID: 1.3.6.1.4.1.7788.1.2.1.5.x

ctlAllElementCurrentState
Type: Integer.
Access: Reading only.
Description: Condition of element. Variable can take the following values (modes are described in sections corresponding to the given type of element in the present manual):

- normal(1) – Normal mode of element «»;
- low(2) – Element is in mode «Low»;
- warning(3) – Element is in mode «Warning»;
- alarm(4) – Element is in mode «Alarm»;
- on(5) – Element is in mode «On»;
- off(6) – Element is in mode «Off»;
- notconnected(7) – Element is in mode «Not connected»;
- pulse(8) – Element is in mode «Pulse».

OID: 1.3.6.1.4.1.7788.1.2.1.4.x

ctlAllElementName
Type: OCTET STRING (SIZE(0,32)).
Access: Reading and saving.
Description: Name of the element.
OID: 1.3.6.1.4.1.7788.1.2.1.5.x

ctlAllElementCurrentState
Type: Integer.
Access: Reading only.
Description: Condition of element. Variable can take the following values (modes are described in sections corresponding to the given type of element in the present manual):

- normal(1) – Normal mode of element «»;
- low(2) – Element is in mode «Low»;
- warning(3) – Element is in mode «Warning»;
- alarm(4) – Element is in mode «Alarm»;
- on(5) – Element is in mode «On»;
- off(6) – Element is in mode «Off»;
- notconnected(7) – Element is in mode «Not connected»;
- pulse(8) – Element is in mode «Pulse».

OID: 1.3.6.1.4.1.7788.1.2.1.6.x

1.6 ctlAnalogElementTable

Table ctlAnalogElementTable contains information and controlling fields on all elements of the system from analog «Sensors» group. The quantity of columns in the table corresponds to quantity of such elements present in system. Each line of the table corresponds to a specific characteristic of an element. The table is indexed via variable ctlAnalogElementUid.

Each analog element of the system is described by the following characteristics:

ctlAnalogElementUid
Type: Unsigned32.
Access: Reading only.
Description: Unique identifier of element (UID).
OID: 1.3.6.1.4.1.7788.1.3.1.1.x

ctlAnalogElementGid
Type: Unsigned32.
Access: Reading and saving.
Description: Unique identifier of container, to which the given element belongs.
OID: 1.3.6.1.4.1.7788.1.3.1.2.x

ctlAnalogElementModAddr
Type: Unsigned32.
Access: Reading only.
Description: Address of unit on RS-485 Bus, to which the given element is connected. For elements in mode NC (Not connected), this variable is set to 0.
OID: 1.3.6.1.4.1.7788.1.3.1.3.x

ctlAnalogElementType
Type: Integer.
Access: Reading only.
Description: Type of element. Variable can take the following values:

- temperature(1) – temperature sensor;
- humidity(2) – humidity sensor;

OID: 1.3.6.1.4.1.7788.1.3.1.4.x

ctlAnalogElementName
Type: OCTET STRING (SIZE(0,32)).
Access: Reading and saving.
Description: Name of element.
OID: 1.3.6.1.4.1.7788.1.3.1.5.x

ctlAnalogElementOldState
Type: Integer.
Access: Reading only.
Description: Condition of element in the previous cycle of inquiry. Variable can take the following values (modes are described in sections corresponding to the given type of element in present manual):

- normal(1) – Normal mode of element;
- low(2) – Element is in mode «Low»;
- warning(3) – Element is in mode «Warning»;
- alarm(4) – Element is in mode «Alarm»;
- notconnected(7) – Element is in mode «Not connected»;

OID: 1.3.6.1.4.1.7788.1.3.1.6.x

ctlAnalogElementCurrentState
Type: Integer.
Access: Reading only.
Description: Condition of element in the last cycle of inquiry. Variable can take the following values (modes are described in sections corresponding to the given type of element in present manual):

- normal(1) – Normal mode of element;
- low(2) – Element is in mode «Low»;
- warning(3) – Element is in mode «Warning»;

- alarm(4) – Element is in mode «Alarm»;
- notconnected(7) – Element is in mode «Not connected»;

OID: 1.3.6.1.4.1.7788.1.3.1.7.x

ctlAnalogElementVal
Type: Integer32.
Access: Reading only.
Description: Indications of element (temperature values are in degrees of Celsius, if element is - temperature sensor; the value of relative humidity is in percentage, if element is - humidity sensor, etc.).
OID: 1.3.6.1.4.1.7788.1.3.1.8.x

ctlAnalogElementLLvl
Type: Integer32.
Access: Reading and saving.
Description: Level «Low level» of element (levels are described in sections corresponding to the given type of element in present manual).
OID: 1.3.6.1.4.1.7788.1.3.1.9.x

ctlAnalogElementWLvl
Type: Integer32.
Access: Reading and saving.
Description: Level «Warning level» of element (levels are described in sections corresponding to the given type of element in present manual).
OID: 1.3.6.1.4.1.7788.1.3.1.10.x

ctlAnalogElementALvl
Type: Integer32.
Access: Reading and saving.
Description: Level «Alarm level» of element (levels are described in sections corresponding to the given type of element in present manual).
OID: 1.3.6.1.4.1.7788.1.3.1.11.x

1.7 ctlDigitalElementTable

Table ctlDigitalElementTable contains information and controlling fields on all elements of the system from digital «Sensors» group. The quantity of columns in the table corresponds to quantity of such elements present in system. Each line of the table corresponds to a specific characteristic of an element. The table is indexed via variable ctlDigitalElementUid.

Each digital element of the system is described by the following characteristics:

ctlDigitalElementUid
Type: Unsigned32.

Access: Reading only.
Description: Unique identifier of element (UID).
OID: 1.3.6.1.4.1.7788.1.4.1.1.x

ctlDigitalElementGid
Type: Unsigned32.
Access: Reading and saving.
Description: Unique identifier of container to which the given element belongs.
OID: 1.3.6.1.4.1.7788.1.4.1.2.x

ctlDigitalElementModAddr
Type: Unsigned32.
Access: Reading only.
Description: Address of unit on RS-485 Bus to which the given element is connected. For elements that are in mode NC (Not connected), this variable is set to 0.
OID: 1.3.6.1.4.1.7788.1.4.1.3.x

ctlDigitalElementType
Type: Integer.
Access: Reading only.
Description: Type of element. Variable can take the following values:

- airflow(3) – Fan rotation sensor;
- power(4) – Voltage monitor;
- motion(5) – Motion sensor;
- magnet(6) – Access sensor;
- button(7) – Button sensor;
- smoke(8) – Smoke sensor;
- shock(9) – Vibration sensor;
- water(10) – Leakage sensor;

OID: 1.3.6.1.4.1.7788.1.4.1.4.x

ctlDigitalElementName
Type: OCTET STRING (SIZE(0,32)).
Access: Reading and saving.
Description: Name of element.
OID: 1.3.6.1.4.1.7788.1.4.1.5.x

ctlDigitalElementOldState
Type: Integer.
Access: Reading only.
Description: Condition of element in the previous cycle of inquiry. Variable can take the following values (modes are described in sections corresponding to the given type of element in present manual):

- normal(1) – Normal mode of element;
- normal(1) – Normal mode of element;
- alarm(4) – Element is in mode «Alarm»;
- notconnected(7) – Element is in mode «Not connected»;

OID: 1.3.6.1.4.1.7788.1.4.1.6.x

ctlDigitalElementCurrentState
Type: Integer.
Access: Reading only.
Description: Condition of element in last cycle of inquiry. Variable can take the following values (modes are described in sections corresponding to the given type of element in the manual):

- normal(1) – Normal mode of element;
- alarm(4) – Element is in mode «Alarm»;
- notconnected(7) – Element is in mode «Not connected»;

OID: 1.3.6.1.4.1.7788.1.4.1.7.x

ctlDigitalElementVal
Type: Integer.
Access: Reading only.
Description: Indications of element. Can take the following values:

- open(1) – open normally;
- close(2) – closed normally;
- grounded(3) – short circuit (for further use);
- grounded(3) – short circuit (for further use);

OID: 1.3.6.1.4.1.7788.1.4.1.8.x

ctlDigitalElementAlarmRvs
Type: Integer.
Access: Reading and saving.
Description: Agreement between indication and mode of the digital sensor (described in sections corresponding to the given type of element in present manual). Can take the following values:

- notreversed(0) – normal mode;
- reversed(1) – reversed mode;

OID: 1.3.6.1.4.1.7788.1.4.1.9.x

ctlDigitalElementAnalogControl
Type: Integer.
Access: Reading only.
Description: (for further use). Support of analog control by the given element. Can take the following values:

- on(1) – analog control is implemented in element;
- off(2) – analog control is not implemented in element;

OID: 1.3.6.1.4.1.7788.1.4.1.10.x

1.8 ctlActuatorElementTable

Table ctlActuatorElementTable contains information and controlling fields on all elements of the system from «Outputs» group. The quantity of columns in the table corresponds to quantity of such elements present in system. Each line of the table corresponds to a specific characteristic of element. Table is indexed via variable ctlActuatorElementUid.

Each digital element of the system from group «Outputs» is described by the following characteristics:

ctlActuatorElementUid
Type: Unsigned32.
Access: Reading only.
Description: Unique identifier of element (UID).
OID:1.3.6.1.4.1.7788.1.5.1.1.x

ctlActuatorElementGid
Type: Unsigned32.
Access: Reading and saving.
Description: Unique identifier of container to which the given element belongs.
OID: 1.3.6.1.4.1.7788.1.5.1.2.x

ctlActuatorElementModAddr
Type: Unsigned32.
Access: Reading only.
Description: Address of unit on RS-485 Bus, to which the given element is connected. For elements that are in mode NC (Not connected), this variable is set to 0.
OID: 1.3.6.1.4.1.7788.1.5.1.3.x

ctlActuatorElementType
Type: Integer.
Access: Reading only.
Description: Type of element. Variable can take the following values:
inductrelay(65) – Electromagnetic relay;
OID: 1.3.6.1.4.1.7788.1.5.1.4.x

ctlActuatorElementName
Type: OCTET STRING (SIZE(0,32)).
Access: Reading and saving.
Description: Name of element.
OID: 1.3.6.1.4.1.7788.1.5.1.5.x

ctlActuatorElementOldState
Type: Integer.
Access: Reading only.
Description: Condition of element in the previous cycle of inquiry. Variable can take the following values (modes are described in sections corresponding to the given type of element in present manual):

- on(5) – Element is in mode «On»;
- off(6) – Element is in mode «Off»;
- notconnected(7) – Element is in mode «Not connected»;
- pulse(8) – Element is in mode «Pulse»;

OID: 1.3.6.1.4.1.7788.1.5.1.6.x

ctlActuatorElementCurrentState
Type: Integer.
Access: Reading only.
Description: Condition of element in the last cycle of inquiry. Variable can take the following values (modes are described in sections corresponding to the given type of element in present manual):

- on(5) – Element is in mode «On»;
- off(6) – Element is in mode «Off»;
- notconnected(7) – Element is in mode «Not connected»;
- pulse(8) – Element is in mode «Pulse»;

OID: 1.3.6.1.4.1.7788.1.5.1.7.x

ctlActuatorElementWantState
Type: Integer.
Access: Reading and saving.
Description: Initially established mode of element. Variable can take the following values (modes are described in sections corresponding to the given type of element in present manual):

- on(5) – Element is in mode «On»;
- off(6) – Element is in mode «Off»;
- notconnected(7) – Element is in mode «Not connected»;
- pulse(8) – Element is in mode «Pulse»;

OID: 1.3.6.1.4.1.7788.1.5.1.8.x

ctlActuatorElementControlType
Type: Integer.
Access: Reading and saving.
Description: Type of element control (described in sections corresponding to the given type of element in present manual):

- logic(1) – Element is controlled by system logic;
- manual(2) – Manual management of element's mode;

OID: 1.3.6.1.4.1.7788.1.5.1.9.x

ctlActuatorElementSUlseDuration
Type: Unsigned32.
Access: Reading and saving.
Description: Duration of impulse in seconds when element is switching into mode «Pulse».
OID: 1.3.6.1.4.1.7788.1.5.1.10.x

1.9 ctlMailElementTable

Table ctlMailElementTable contains information and controlling fields on all mail client-elements of the system (Group «Notifications»). The quantity of columns in the table corresponds to quantity of such elements present in system. Each line of the table corresponds to a specific characteristic of element. The table is indexed via variable ctlMailElementUid.

Each mail client element of the system has the following characteristics:

ctlMailElementUid
Type: Unsigned32.
Access: Reading only.
Description: Unique identifier of element (UID).
OID: 1.3.6.1.4.1.7788.1.7.1.1.x

ctlMailElementGid
Type: Unsigned32.
Access: Reading and saving.
Description: Unique identifier of container to which the given element belongs.
OID: 1.3.6.1.4.1.7788.1.7.1.2.x

ctlMailElementName
Type: OCTET STRING (SIZE(0.32)).
Access: Reading and saving.
Description: Name of element.
OID: 1.3.6.1.4.1.7788.1.7.1.3.x

ctlMailElementTo
Type: OCTET STRING (SIZE(0.64)).
Access: Reading and saving.
Description: E-mail address of recipient.
OID: 1.3.6.1.4.1.7788.1.7.1.4.x

ctlMailElementFrom
Type: OCTET STRING (SIZE(0.64)).
Access: Reading and saving.
Description: E-mail address of sender.
OID: 1.3.6.1.4.1.7788.1.7.1.5.x

ctlMailElementLogin
Type: OCTET STRING (SIZE(0.64)).
Access: Reading and saving.
Description: Login for authorization on mail server.
OID: 1.3.6.1.4.1.7788.1.7.1.6.x

ctlMailElementXLogin
Type: OCTET STRING (SIZE(0.64)).
Access: Reading and saving.
Description: Encrypted login for authorization on mail server.
OID: 1.3.6.1.4.1.7788.1.7.1.7.x

ctlMailElementPassword
Type: OCTET STRING (SIZE(0.64)).
Access: Reading and saving.
Description: Password for authorization on mail server (used together with Login).
OID: 1.3.6.1.4.1.7788.1.7.1.8.x

ctlMailElementXPassword
Type: OCTET STRING (SIZE(0.64)).
Access: Reading and saving.
Description: Encrypted password for authorization on mail server (used together with XLogin).
OID: 1.3.6.1.4.1.7788.1.7.1.9.x

ctlMailElementSMTPServer
Type: OCTET STRING (SIZE(0.64)).
Access: Reading and saving.
Description: Address (name) of mail server.
OID: 1.3.6.1.4.1.7788.1.7.1.10.x

ctlMailElementSMTPPort
Type: Unsigned32.
Access: Reading and saving.
Description: SMTP port, through which the access to SMTP server is conducted.
OID: 1.3.6.1.4.1.7788.1.7.1.11.x

ctlMailElementCommand
Type: Integer.

Access: Reading and saving.
Description: Command to the mail client. Can take the following values:
- delete(0) – remove mail client;

OID: 1.3.6.1.4.1.7788.1.7.1.12.x

1.10 ctlLogicGroupTable

Table ctlLogicGroupTable contains information and operating fields for all containers of system. Quantity of columns in the table corresponds to quantity of containers in system. Each line of the table corresponds to certain characteristic of the container. The table is indexed via variable ctlLogicGroupGid.

Each container of system possesses following characteristics.

ctlLogicGroupLevel
Type: Unsigned32.
Access: Reading only.
Description: Nesting level of container inside other containers (Level relative to a root).
OID: 1.3.6.1.4.1.7788.1.8.1.1.x

ctlLogicGroupParentGid
Type: Unsigned32.
Access: Reading only.
Description: Identifier of parent container containing given container.
OID: 1.3.6.1.4.1.7788.1.8.1.2.x

ctlLogicGroupGid
Type: Unsigned32.
Access: Reading only.
Description: Unique identifier of container.
OID: 1.3.6.1.4.1.7788.1.8.1.3.x

ctlLogicGroupState
Type: Unsigned32.
Access: Reading only.
Description: Logic state of container.
OID: 1.3.6.1.4.1.7788.1.8.1.4.x

ctlLogicGroupName
Type: OCTET STRING (SIZE(0.32)).
Access: Reading and saving.
Description: Name of container.
OID: 1.3.6.1.4.1.7788.1.8.1.5.x

ctlLogicGroupDescription
Type: OCTET STRING (SIZE(0.128)).

Access: Reading and saving.
Description: Description of container.
OID: 1.3.6.1.4.1.7788.1.8.1.6.x

ctlLogicGroupImagePath
Type: OCTET STRING (SIZE(0.128)).
Access: Reading and saving.
Description: Path to picture for container (path in system).
OID: 1.3.6.1.4.1.7788.1.8.1.7.x

ctlLogicGroupCommand
Type: Integer.
Access: Reading and saving.
Description: Command of container removal, described by column with number x (x is not equal to 0). A variable ctlLogicGroupCommand can take the following values:

- delete(0) – remove container;

OID: 1.3.6.1.4.1.7788.1.8.1.9.x

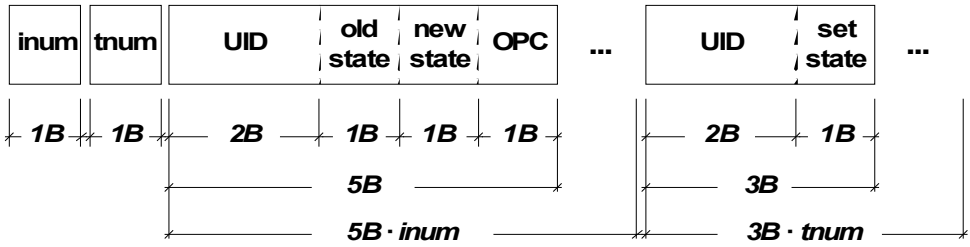
1.11 ctlLogicTable

Table ctlLogicTable contains information and controlling variables for work of system logic. The quantity of columns in the table corresponds to quantity of logic blocks present in system. Each line of the table corresponds to a specific characteristic (or command) of logic block. The table is indexed via variable ctlLogicBlockID (for example, the logic block with ID equal to 5 - is described by variables 1.3.6.1.4.1.7788.1.9.1.y.5, where y = 1 (ctlLogicBlockID == 5), 2 (ctlLogicIfThen), 3 (ctlLogicCommand)).

Each logic block of system possesses the following characteristics:

ctlLogicBlockID
Type: Unsigned32.
Access: Reading only.
Description: Unique identifier of logic block.
OID: 1.3.6.1.4.1.7788.1.9.1.1.x

ctlLogicIfThen
Type: OCTET STRING (SIZE(0..250)).
Access: Reading and creation.
Description: Line-descriptor of logic block. Has the following format (Pic. 9.2):



Pic. 1.1: ctlModuleTable

- inum – quantity of conditions (IFs number) in the given logic block;
- tnum – quantity of actions (THENs number) in the given logic block;
- UID – identifier of element, used for setting condition (in IF) or action (in THEN);
  old state – condition of element from which transition into condition “new state” in order to meet condition should be carried out;
- new state – condition of element into which transition from condition “old state” in order to meet condition should be carried out;
- OPC – logic operation (Operation Code), uniting the given condition with the following condition;
- set state – condition into which it is necessary to transfer the element by the event described in set of conditions IFs;

Possible values of fields "old state ", "new state " and "set state " that describe the state of elements:

- 0x1: normal – Normal mode of element;
- 0x2: low – The element is in mode «Low»;
- 0x3: warning – The element is in mode «Warning»;
- 0x4: alarm – The element is in mode «Alarm»;
- 0x5: on – The element is in mode «On»;
- 0x6: off – The element is in mode «Off»;
- 0x7: notconnected – The element is in mode «Not connected»;
- 0x8: Pulse – The element is in mode «Pulse».

Possible values of field OPC that describes logic operation:

- 0x0: NOP –there is no operation - the given condition is the last in set of conditions of given logic block;
- 0x1: AND – operation AND with following condition in set;
- 0x2: OR – operation OR with following condition in set;

For creation of a new logic block it is necessary to execute installation of variable ctlIfThen from a zero column, i.e. to save line of the format described above as variable with OID = 1.3.6.1.4.1.7788.1.9.1.2.0.

OID: 1.3.6.1.4.1.7788.1.9.1.2.x

ctlLogicCommand
Type: Integer.
Access: Reading and saving.
Description: Removal command of logic block, described by column with number x (x is not equal to 0). Variable ctlLogicCommand can take the following values:

- delete(0) – remove logic block;

OID: 1.3.6.1.4.1.7788.1.9.1.3.x

ctlLogElementStateBefore
Type: Integer.
Access: Reading only.
Description: Condition of element, transition from which is reflected in logic record. Can take the following values:

- normal(1) – Normal mode of element;
- low(2) – Element is in mode «Low»;
- warning(3) – Element is in mode «Warning»;
- alarm(4) – Element is in mode «Alarm»;
- on(5) – Element is in mode «On»;
- off(6) – Element is in mode «Off»;
- notconnected(7) – Element is in mode «Not connected»;
- pulse(8) – Element is in mode «Pulse».

OID: 1.3.6.1.4.1.7788.1.10.1.3.x

ctlLogElementStateAfter
Type: Unsigned32.
Access: Reading only.
Description: Condition of element, transition from which is reflected in logic record. Can take the following values:

- normal(1) – Normal mode of element;
- low(2) – Element is in mode «Low»;
- warning(3) – Element is in mode Warning»;
- alarm(4) – Element is in mode «Alarm»;
- on(5) – Element is in mode «On»;
- off(6) – Element is in mode «Off»;
- notconnected(7) – Element is in mode «Not connected»;
- pulse(8) – Element is in mode «Pulse».

OID: 1.3.6.1.4.1.7788.1.10.1.4.x

1.12 TRAP notification

It is possible to add to system the element “Trap” (element from group “Notifications”) and to use it in set of actions of logic blocks. If set of conditions of logic block (contains the set of actions of the element “Trap”) is met, the SNMP-agent of system sends TRAP

message to the SNMP-manager, which IP is given by the user at creation of element "Trap". The TRAP-message represents pair "variable-value" where the variable ctlEvent-Notification is described in 7.13.1, and value is the unique identifier of logic block, which set of conditions was executed, and the set of actions contains element TRAP.

The manager having received the TRAP-message from the ID logic block, can receive description of this logic block by means of SNMP-inquiries, can extract identifiers UID of the elements included in set of conditions of given logic block, and then by means of SNMP-inquiries receive states of each of elements, which in sum have led to actuation of the logic block.

ctlEventNotification
Description: Variable contains unique identifier of (ID) logic block, which set of conditions has been met, and which set of actions is contained in element «Trap».
OID: 1.3.6.1.4.1.7788.1.11.

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