

## User Guide – CANopen protocol

# DAT 7014

### PROFILE DESCRIPTION

**- EDS file:**

DAT7014.eds

**- Application layer:**

CiA DS 301 Version 4.02

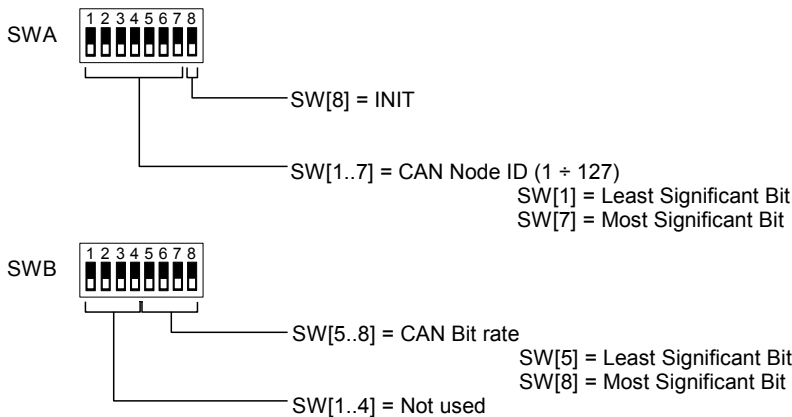
**- Device Profile:**

CiA DS 401 Version 2.1

- Transmit PDO supported :1

- Receive PDO supported: 0

### DIP-SWITCH CONFIGURATION



### THE OBJECT DICTIONARY (OD)

The Object Dictionary is the part of the device profile wherein are grouped the objects that have an influence on the device behaviour (application objects, communication objects and state objects) .The structure of the Object Dictionary is predefined as in Draft Standard CiA301.

How to read the Object Dictionary table present in this document.

| Index | N° Sub-index | Name | Description | Object type | Default value | Access |
|-------|--------------|------|-------------|-------------|---------------|--------|
|-------|--------------|------|-------------|-------------|---------------|--------|

**Index:** 16 bit number expressed in Hex format used to address the object inside the OD;

**Sub-index:** 8 bit number expressed in Hex format used to indicate and address the sub parts of an object;

**Name:** Defines which is the name of the object inside the OD;

**Description:** Text strings that describe what is the function of the object;

**Object type:** Indicates what is the data type of the object (Unsigned 32, Boolean, etc..).

**Default value:** Indicates what is the default value for an object.

**Access:** Indicates what is the type of access designed for an object:

RO: indicates an object that could only be read;

RW: indicates an object that could be read and written

---: indicates that the object is a complex object addressed by Sub-index.

## PROCESS DATA OBJECTS (PDO)

The real time data-transfer is performed by means of the Process Data Object (PDO). The PDO is transmitted only from one Producer to one or more customer; the data capability of a PDO is included between 1 and 8 bytes.

There are two kinds of PDOs: the first is used for data transmission (TPDO) and the second is used for data reception (RPDO). The PDOs are described by the communication parameters and the mapping parameters. The communication parameters define the communication capability of the PDO; the mapping parameters define the content of PDO. Data type and mapping of the application objects into a PDO is determined by the default structure specified in the Object Dictionary.

The communication parameter is composed of:

- COB-ID;
- Transmission type;
- Inhibit time;
- Event timer.

### COB-ID.

The COB-ID is the Connection Object Identifier and contains the unique CAN message Identifier of the object and additional configuration bits. For the PDOs the following 32 bit COB-ID are foreseen.

TPDO1: NODE ID + 0x00000180;

TPDO2: NODE ID + 0x00000280;

TPDO3: NODE ID + 0x00000380;

TPDO4: NODE ID + 0x00000480;

RPDO1: NODE ID + 0x00000200;

RPDO2: NODE ID + 0x00000300;

RPDO3: NODE ID + 0x00000400;

RPDO4: NODE ID + 0x00000500.

The NODE ID is the CAN node ID of the device. The range value is from 0x01 (decimal 1 ) up to 0x7F (decimal 127).

If the first byte is 8 the PDO is not used; if it is 0, the PDO is used.

### Transmission Type.

To transmit the PDO the following transmission modes can be used:

- Synchronous Transmission
- Asynchronous Transmission

The value of the parameter " Transmission type" defines how the PDO transmission is performed.

#### For TPDOs:

##### Value 0.

The TPDO is synchronous acyclic; it is transmitted after the receiving of a SYNC object when one or more parameters change.

##### Value 1-240.

The TPDO is synchronous cyclic. It is transmitted after every *n*th SYNC object within the "Synchronous Window Length" (object 0x1007). The value *n* is the value of the Transmission Type.

*NOTE:* The Communication Cycle Period object (0x1006) express the time between two SYNC and must have the same value or a bigger value of the Synchronous Window Length.

##### Value 255.

The TPDO is asynchronous and it is transmitted in function of the parameter "Event timer".

#### For RPDOs:

##### Value 0-240.

The RPDO is synchronous and the actual value of transmission type is not relevant because the RPDO is processed on reception of the next SYNC object.

##### Value 255.

The RPDO is asynchronous and it is processed by the node as soon as the PDO arrives.

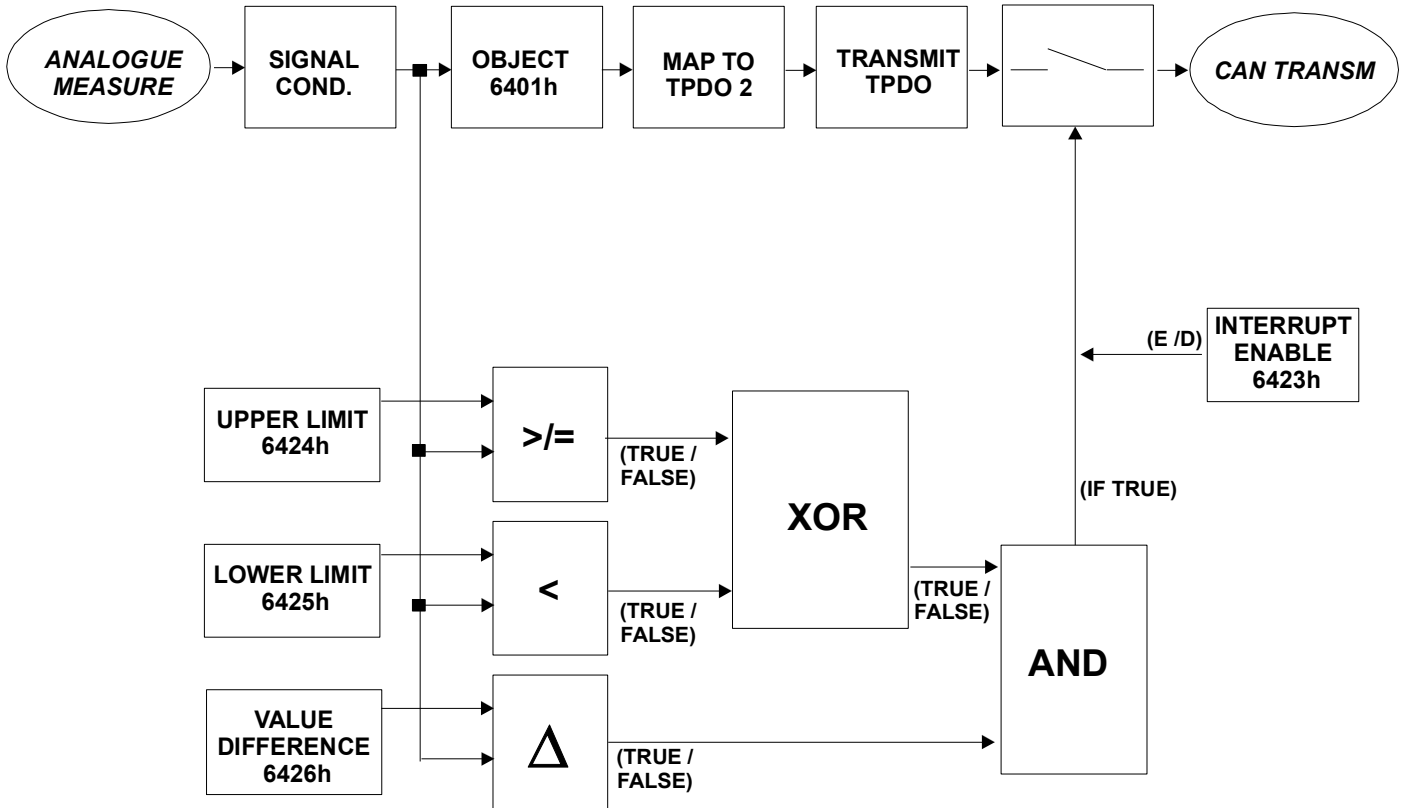
### Inhibit Time.

This is the time within the PDO is not transmitted. The PDO is transmitted only when the time expires.

### Event Timer.

The PDO is transmitted on a fixed time base.

**FUNCTIONAL DIAGRAM FOR ANALOGUE INPUTS TRANSMISSION**



**INTERRUPT TRIGGERING TPDO TRANSMISSION.**

The analogue signals are processed and transferred to the object 6401h. The data of this object are moved to the TPDO in function of the mapping parameters set in the object 1A01h. The communication parameters of TPDO are defined in the object 1801h .

In the same time the analogue measure is checked with the values contained in the objects 6424h (upper limit), 6425h (lower limit) and 6426h (delta).

The system execute the boolean operation XOR between the object 6424h (true if the input measure is greater or equal the pre-set values of the object) and the object 6425h (true if the input measure is lower the pre-set values of the object) and successively execute the boolean operation AND between the result of the XOR and the object 6426h (true if the input measure rises or falls above or below of the delta value respect to the last communicated value).

If the result of the operation AND is true, the transmission of the TPDO is performed only if the object 6423h has been enabled (value set as 255).

## DAT7014 OBJECT DICTIONARY

| Index   | N° Sub-index | Name                          | Description  | Object type    | Default value | Access |
|---|--------------|-------------------------------|--|----------------|---------------|--------|
| 0x1000  | 0            | Device Type                   | Identifies the type of device (analog input) and its Device Profile (CiA 401)                      | Unsigned 32    | 0x00040191    | RO     |
| 0x1001  | 0            | Error register                | Register used to monitor eventual internal errors  | Unsigned 8     | 0x00          | RO     |
| 0x1002  | 0            | Manufacturer status register  | Status register  | Unsigned 32    | 0x00000000    | RO     |
| 0x1003  | 2            | Predefined error field        | Contains the list of the recent errors   | Array          | -----         | ----   |
|   | Sub Index 0  | Number of errors              | Contains the number of errors occurred   | Unsigned 8     | 0x00          | RW     |
|   | Sub Index 1  | Standard error field 1        | Stores the recent errors occurred  | Unsigned 32    | 0x00000000    | RO     |
| 0x1005  | 0            | SYNC COB-ID                   | Defines the COB-ID of the Synchronism Object consumed  | Unsigned 32    | 0x00000080    | RW     |
| 0x1006  | 0            | Communication cycle period    | Defines the SYNC interval and it is expressed as $\mu$ s   | Unsigned 32    | 0x00000000    | RW     |
| 0x1007  | 0            | Synchronous window length     | Defines the time window expressed as $\mu$ s to transmit the synchronous PDO after the SYNC object | Unsigned 32    | 0x00000000    | RW     |
| 0x1008  | 0            | Manufacturer device name      | Contains the device's name   | Visible String | "DAT 7014"    | RO     |
| 0x1009  | 0            | Manufacturer hardware Version | Indicates the hardware version of the device   | Visible String | "1.00"        | RO     |
| 0x100A  | 0            | Manufacturer software Version | Indicates the version of the device's firmware   | Visible String | "2.10"        | RO     |
| 0x1010  | 2            | Store parameters              | Supports the saving of the parameters  | Array          | -----         | ----   |
|   | Sub Index 0  | Max sub-index number          | Contains the number of sub index supported   | Unsigned 8     | 0x01          | RO     |
|   | Sub Index 1  | Save all parameters           | Saves all the parameters   | Unsigned 32    | 0x00000000    | RW     |
| Write the value <b>65766173 Hex, 1702257011 Decimal</b> (ASCII "save") in sub-index to save data.   |              |                               |  |                |               |        |
| 0x1011  | 2            | Restore default               | Restore the default values of the parameters   | Array          | -----         | ----   |
|   | Sub Index 0  | Max sub-index number          | Contains the number of sub index supported   | Unsigned 8     | 0x01          | RO     |
|   | Sub Index 1  | Restore all parameters        | Restores all the parameters  | Unsigned 32    | 0x00000000    | RW     |
| Write the value <b>64616F6C Hex, 1684107116 Decimal</b> (ASCII "load") in sub-index to restore data.<br>Type of reset caused at the restore of default:<br>-restore of sub index 1 : Node reset |              |                               |  |                |               |        |

| Index  | N° Sub-index | Name   | Description  | Object type | Default value   | Access |
|--------|--------------|--|--|-------------|-----------------|--------|
| 0x1014 | 0            | <b>COB-ID Emergency Object (EMCY)</b>              | Defines the COB-ID of the Emergency Object                             | Unsigned 32 | Node ID + 0x80  | RW     |
| 0x1015 | 0            | <b>Inhibit time (EMCY)</b>                         | Defines the inhibit time for the Emergency Object (multiple of 100 µs) | Unsigned 32 | 0x00000000      | RW     |
| 0x1016 | 2            | <b>Consumer heartbeat time</b>                     | Defines the heartbeat cycle time (multiple of 1 ms)                    | Array       | -----           | ----   |
|        | Sub Index 0  | Max sub-index number                               | Contains the number of sub index supported                             | Unsigned 8  | 0x01            | RO     |
|        | Sub Index 1  | Consumer heartbeat time                            | Heartbeat time   | Unsigned 32 | 0x00000000      | RW     |
| 0x1017 | 0            | <b>Producer heartbeat time</b>                     | Defines the heartbeat cycle time (multiple of 1 ms)                    | Unsigned 16 | 0x00000000      | RW     |
| 0x1018 | 5            | <b>Identity</b>                                    | Contains the general information about the device                      | Record      | -----           | ----   |
|        | Sub Index 0  | Max sub-index number                               | Contains the number of sub index supported                             | Unsigned 8  | 0x04            | RO     |
|        | Sub Index 1  | Vendor ID  | Datexel s.r.l. Unique code   | Unsigned 32 | 0x000003CD      | RO     |
|        | Sub Index 2  | Product code                                       | DAT7014 ID code  | Unsigned 32 | 0x00000002      | RO     |
|        | Sub Index 3  | Revision number                                    | Revision number  | Unsigned 32 | 0x00000000      | RO     |
|        | Sub Index 4  | Serial number                                      | Serial number code   | Unsigned 32 | 0x00000000      | RO     |
| 0x1029 | 2            | <b>Error behaviour</b>                             | Defines the behaviour of the device in case of error encountered       | Array       | -----           | ----   |
|        | Sub Index 0  | Max sub-index number                               | Contains the number of error classes                                   | Unsigned 8  | 0x01            | RO     |
|        | Sub Index 1  | Communication error                                | Defines the device condition for a communication error                 | Unsigned 8  | 0x00            | RW     |
| 0x1200 | 3            | <b>Server SDO parameters</b>                       | Describes the SDO communication channel for the node                   | Array       | -----           | ----   |
|        | Sub Index 0  | Max sub-index number                               | Contains the number of sub-index supported                             | Unsigned 8  | 0x02            | RO     |
|        | Sub Index 1  | COB ID Client to Server (Receive SDO)              | Defines the COB ID in case of receiving SDO                            | Unsigned 32 | Node ID + 0x600 | RO     |
|        | Sub Index 2  | COB ID Server to Client (Transmit SDO)             | Defines the COB ID in case of transmitting SDO                         | Unsigned 32 | Node ID + 0x580 | RO     |
| 0x1801 | 5            | <b>2<sup>nd</sup> TDO communication parameters</b> | List of the parameters of the 2 <sup>nd</sup> TPDO                     | Record      | -----           | ----   |
|        | Sub Index 0  | Max sub-index number                               | Contains the number of sub-index supported                             | Unsigned 8  | 0x04            | RO     |
|        | Sub Index 1  | COB ID   | Defines the COB ID of the PDO  | Unsigned 32 | Node ID + 0x280 | RW     |
|        | Sub Index 2  | Transmission type                                  | Defines the transmission type for the TPDO                             | Unsigned 8  | 0xFF            | RW     |
|        | Sub Index 3  | Inhibit timer                                      | Defines the delay to transmit the next PDO (multiple of 100 µs)        | Unsigned 16 | 0x0000          | RW     |
|        | Sub Index 5  | Event timer  | Transmits the PDO when the timer is expired (multiple of 1 ms)         | Unsigned 16 | 0x0000          | RW     |
| 0x1A01 | 5            | <b>2<sup>nd</sup> TPDO mapping parameters</b>      | List of mapping parameters of the 2 <sup>nd</sup> TPDO                 | Array       | -----           | ----   |
|        | Sub Index 0  | Max sub-index number                               | Contains the number of sub-index supported                             | Unsigned 8  | 0x04            | RW     |
|        | Sub Index 1  | Mapped Object 1                                    | Defines the 1 <sup>st</sup> object mapped into TPDO                    | Unsigned 32 | 0x64010110      | RW     |
|        | Sub Index 2  | Mapped Object 2                                    | Defines the 2 <sup>nd</sup> object mapped into TPDO                    | Unsigned 32 | 0x64010210      | RW     |
|        | Sub Index 3  | Mapped Object 3                                    | Defines the 3 <sup>rd</sup> object mapped into TPDO                    | Unsigned 32 | 0x64010310      | RW     |
|        | Sub Index 4  | Mapped Object 4                                    | Defines the 4 <sup>th</sup> object mapped into TPDO                    | Unsigned 32 | 0x64010410      | RW     |

| Index          | N° Sub-index   | Name                  | Description   | Object type | Default value | Access      |                |   |      |            |    |      |             |    |      |           |    |      |            |    |      |           |    |      |            |    |      |               |    |      |  |  |  |
|----------------|--|-----------------------|---|-------------|---------------|-------------|----------------|---|------|------------|----|------|-------------|----|------|-----------|----|------|------------|----|------|-----------|----|------|------------|----|------|---------------|----|------|--|--|--|
| 0x2101         | 0  | Can Node ID           | Defines which is the default CAN node number of the device  | Unsigned 8  | 0x7F          | RO          |                |   |      |            |    |      |             |    |      |           |    |      |            |    |      |           |    |      |            |    |      |               |    |      |  |  |  |
|                | Values available: from Dec.1 ( 0x01) up to Dec 127 (0x7F).     |                       |   |             |               |             |                |   |      |            |    |      |             |    |      |           |    |      |            |    |      |           |    |      |            |    |      |               |    |      |  |  |  |
| 0x2102         | 0  | Can bit rate          | Defines which is the default bit rate value   | Unsigned 8  | 0x03          | RO          |                |   |      |            |    |      |             |    |      |           |    |      |            |    |      |           |    |      |            |    |      |               |    |      |  |  |  |
|                | Decimal and Hex value to select the Bit rate parameter.        |                       |   |             |               |             |                |   |      |            |    |      |             |    |      |           |    |      |            |    |      |           |    |      |            |    |      |               |    |      |  |  |  |
|                |  |                       | <table border="1"> <thead> <tr> <th>Bit rate</th> <th>Value (Dec)</th> <th>Value (Hex)</th> </tr> </thead> <tbody> <tr> <td>10 Kbps</td> <td>0</td> <td>0x00</td> </tr> <tr> <td>20 Kbps</td> <td>1</td> <td>0x01</td> </tr> <tr> <td>50 Kbps</td> <td>2</td> <td>0x02</td> </tr> <tr> <td>125 Kbps</td> <td>3</td> <td>0x03</td> </tr> <tr> <td>250 Kbps</td> <td>4</td> <td>0x04</td> </tr> <tr> <td>500 Kbps</td> <td>5</td> <td>0x05</td> </tr> <tr> <td>800 Kbps</td> <td>6</td> <td>0x06</td> </tr> <tr> <td>1 Mbps</td> <td>7</td> <td>0x07</td> </tr> </tbody> </table>                                     | Bit rate    | Value (Dec)   | Value (Hex) | 10 Kbps        | 0 | 0x00 | 20 Kbps    | 1  | 0x01 | 50 Kbps     | 2  | 0x02 | 125 Kbps  | 3  | 0x03 | 250 Kbps   | 4  | 0x04 | 500 Kbps  | 5  | 0x05 | 800 Kbps   | 6  | 0x06 | 1 Mbps        | 7  | 0x07 |  |  |  |
| Bit rate       | Value (Dec)  | Value (Hex)           |   |             |               |             |                |   |      |            |    |      |             |    |      |           |    |      |            |    |      |           |    |      |            |    |      |               |    |      |  |  |  |
| 10 Kbps        | 0  | 0x00                  |   |             |               |             |                |   |      |            |    |      |             |    |      |           |    |      |            |    |      |           |    |      |            |    |      |               |    |      |  |  |  |
| 20 Kbps        | 1  | 0x01                  |   |             |               |             |                |   |      |            |    |      |             |    |      |           |    |      |            |    |      |           |    |      |            |    |      |               |    |      |  |  |  |
| 50 Kbps        | 2  | 0x02                  |   |             |               |             |                |   |      |            |    |      |             |    |      |           |    |      |            |    |      |           |    |      |            |    |      |               |    |      |  |  |  |
| 125 Kbps       | 3  | 0x03                  |   |             |               |             |                |   |      |            |    |      |             |    |      |           |    |      |            |    |      |           |    |      |            |    |      |               |    |      |  |  |  |
| 250 Kbps       | 4  | 0x04                  |   |             |               |             |                |   |      |            |    |      |             |    |      |           |    |      |            |    |      |           |    |      |            |    |      |               |    |      |  |  |  |
| 500 Kbps       | 5  | 0x05                  |   |             |               |             |                |   |      |            |    |      |             |    |      |           |    |      |            |    |      |           |    |      |            |    |      |               |    |      |  |  |  |
| 800 Kbps       | 6  | 0x06                  |   |             |               |             |                |   |      |            |    |      |             |    |      |           |    |      |            |    |      |           |    |      |            |    |      |               |    |      |  |  |  |
| 1 Mbps         | 7  | 0x07                  |   |             |               |             |                |   |      |            |    |      |             |    |      |           |    |      |            |    |      |           |    |      |            |    |      |               |    |      |  |  |  |
| 0x2107         | 5  | Sensor type selection | Contains the programming of the Analog Input Channels   | Array       | -----         | ----        |                |   |      |            |    |      |             |    |      |           |    |      |            |    |      |           |    |      |            |    |      |               |    |      |  |  |  |
|                | Sub Index 0  | Max sub-index number  | Contains the number of sub-index supported  | Unsigned 8  | 0x04          | RO          |                |   |      |            |    |      |             |    |      |           |    |      |            |    |      |           |    |      |            |    |      |               |    |      |  |  |  |
|                | Sub Index 1  | CH1 sensor type       | Programming of Input Channel 1  | Unsigned 8  | 0x12          | RW          |                |   |      |            |    |      |             |    |      |           |    |      |            |    |      |           |    |      |            |    |      |               |    |      |  |  |  |
|                | Sub Index 2  | CH2 sensor type       | Programming of Input Channel 2  | Unsigned 8  | 0x12          | RW          |                |   |      |            |    |      |             |    |      |           |    |      |            |    |      |           |    |      |            |    |      |               |    |      |  |  |  |
|                | Sub Index 3  | CH3 sensor type       | Programming of Input Channel 3  | Unsigned 8  | 0x12          | RW          |                |   |      |            |    |      |             |    |      |           |    |      |            |    |      |           |    |      |            |    |      |               |    |      |  |  |  |
|                | Sub Index 4  | CH4 sensor type       | Programming of Input Channel 4  | Unsigned 8  | 0x12          | RW          |                |   |      |            |    |      |             |    |      |           |    |      |            |    |      |           |    |      |            |    |      |               |    |      |  |  |  |
|                | Decimal and Hex values to select the type of the input sensor. |                       |   |             |               |             |                |   |      |            |    |      |             |    |      |           |    |      |            |    |      |           |    |      |            |    |      |               |    |      |  |  |  |
|                |  |                       | <table border="1"> <thead> <tr> <th>Input type</th> <th>Value (Dec)</th> <th>Value (Hex)</th> </tr> </thead> <tbody> <tr> <td>Input not used</td> <td>0</td> <td>0x00</td> </tr> <tr> <td>Res 2 Kohm</td> <td>16</td> <td>0x10</td> </tr> <tr> <td>Res 500 ohm</td> <td>17</td> <td>0x11</td> </tr> <tr> <td>RTD Pt100</td> <td>18</td> <td>0x12</td> </tr> <tr> <td>RTD Pt1000</td> <td>19</td> <td>0x13</td> </tr> <tr> <td>RTD Ni100</td> <td>20</td> <td>0x14</td> </tr> <tr> <td>RTD Ni1000</td> <td>21</td> <td>0x15</td> </tr> <tr> <td>Potentiometer</td> <td>22</td> <td>0x16</td> </tr> </tbody> </table> | Input type  | Value (Dec)   | Value (Hex) | Input not used | 0 | 0x00 | Res 2 Kohm | 16 | 0x10 | Res 500 ohm | 17 | 0x11 | RTD Pt100 | 18 | 0x12 | RTD Pt1000 | 19 | 0x13 | RTD Ni100 | 20 | 0x14 | RTD Ni1000 | 21 | 0x15 | Potentiometer | 22 | 0x16 |  |  |  |
| Input type     | Value (Dec)  | Value (Hex)           |   |             |               |             |                |   |      |            |    |      |             |    |      |           |    |      |            |    |      |           |    |      |            |    |      |               |    |      |  |  |  |
| Input not used | 0  | 0x00                  |   |             |               |             |                |   |      |            |    |      |             |    |      |           |    |      |            |    |      |           |    |      |            |    |      |               |    |      |  |  |  |
| Res 2 Kohm     | 16   | 0x10                  |   |             |               |             |                |   |      |            |    |      |             |    |      |           |    |      |            |    |      |           |    |      |            |    |      |               |    |      |  |  |  |
| Res 500 ohm    | 17   | 0x11                  |   |             |               |             |                |   |      |            |    |      |             |    |      |           |    |      |            |    |      |           |    |      |            |    |      |               |    |      |  |  |  |
| RTD Pt100      | 18   | 0x12                  |   |             |               |             |                |   |      |            |    |      |             |    |      |           |    |      |            |    |      |           |    |      |            |    |      |               |    |      |  |  |  |
| RTD Pt1000     | 19   | 0x13                  |   |             |               |             |                |   |      |            |    |      |             |    |      |           |    |      |            |    |      |           |    |      |            |    |      |               |    |      |  |  |  |
| RTD Ni100      | 20   | 0x14                  |   |             |               |             |                |   |      |            |    |      |             |    |      |           |    |      |            |    |      |           |    |      |            |    |      |               |    |      |  |  |  |
| RTD Ni1000     | 21   | 0x15                  |   |             |               |             |                |   |      |            |    |      |             |    |      |           |    |      |            |    |      |           |    |      |            |    |      |               |    |      |  |  |  |
| Potentiometer  | 22   | 0x16                  |   |             |               |             |                |   |      |            |    |      |             |    |      |           |    |      |            |    |      |           |    |      |            |    |      |               |    |      |  |  |  |

| Index   | N° Sub-index   | Name  | Description   | Object type | Default value | Access |
|---|--|---|---|-------------|---------------|--------|
| 0x6401  | 5  | <b>16 bit Input Channel Measure</b>             | Contains the measures of the Analog Input Channels      | Array       | -----         | ----   |
|   | Sub Index 0  | Max sub-index number                            | Contains the number of sub-index supported              | Unsigned 8  | 0x04          | RO     |
|   | Sub Index 1  | CH1 measure                                     | Shows the measure of the Input Channel 1                | Integer 16  | -----         | RO     |
|   | Sub Index 2  | CH2 measure                                     | Shows the measure of the Input Channel 2                | Integer 16  | -----         | RO     |
|   | Sub Index 3  | CH3 measure                                     | Shows the measure of the Input Channel 3                | Integer 16  | -----         | RO     |
|   | Sub Index 4  | CH4 measure                                     | Shows the measure of the Input Channel 4                | Integer 16  | -----         | RO     |
| 0x6423  | 0  | <b>16 bits Analogue Global Interrupt Enable</b> | Enables / Disable globally the interrupt behaviour      | Unsigned 8  | 0             | RW     |
|   | Value 0: object disable (no analog input activates the interrupt).<br>Value 255: object enabled (one or more analog input can activate the interrupt). |   |   |             |               |        |
| 0x6424  | 5  | <b>16 bits Analogue Interrupt Upper limits</b>  | Contains the upper limits for the analog input channels | Array       | -----         | ----   |
|   | Sub Index 0  | Max sub-index number                            | Contains the number of sub-index supported              | Unsigned 8  | 0x04          | RO     |
|   | Sub Index 1  | CH1 Interrupt Upper limit                       | Upper limit of the Channel 1                            | Integer 16  | 0x0000        | RW     |
|   | Sub Index 2  | CH2 Interrupt Upper limit                       | Upper limit of the Channel 2                            | Integer 16  | 0x0000        | RW     |
|   | Sub Index 3  | CH3 Interrupt Upper limit                       | Upper limit of the Channel 3                            | Integer 16  | 0x0000        | RW     |
|   | Sub Index 4  | CH4 Interrupt Upper limit                       | Upper limit of the Channel 4                            | Integer 16  | 0x0000        | RW     |
| This object works only if the Object 0x6423 has been enabled.<br>The interrupt is triggered when the input measure rise above or is equal to the setted value.          |  |   |   |             |               |        |
| 0x6425  | 5  | <b>16 bits Analogue Interrupt Lower limits</b>  | Contains the lower limits for the analog input channels | Array       | -----         | ----   |
|   | Sub Index 0  | Max sub-index number                            | Contains the number of sub-index supported              | Unsigned 8  | 0x04          | RO     |
|   | Sub Index 1  | CH1 Interrupt Lower limit                       | Lower limit of the Channel 1                            | Integer 16  | 0x0000        | RW     |
|   | Sub Index 2  | CH2 Interrupt Lower limit                       | Lower limit of the Channel 2                            | Integer 16  | 0x0000        | RW     |
|   | Sub Index 3  | CH3 Interrupt Lower limit                       | Lower limit of the Channel 3                            | Integer 16  | 0x0000        | RW     |
|   | Sub Index 4  | CH4 Interrupt Lower limit                       | Lower limit of the Channel 4                            | Integer 16  | 0x0000        | RW     |
| This object works only if the Object 0x6423 has been enabled.<br>The interrupt is triggered when the input measure falls below the setted value.                        |  |   |   |             |               |        |
| 0x6426  | 5  | <b>16 bits Analogue Interrupt Delta</b>         | Contains the delta values for the analog input channels | Array       | -----         | ----   |
|   | Sub Index 0  | Max sub-index number                            | Contains the number of sub-index supported              | Unsigned 8  | 0x04          | RO     |
|   | Sub Index 1  | CH1 Delta limit                                 | Delta value for the Channel 1                           | Integer 16  | 0x000A        | RW     |
|   | Sub Index 2  | CH2 Delta limit                                 | Delta value for the Channel 2                           | Integer 16  | 0x000A        | RW     |
|   | Sub Index 3  | CH3 Delta limit                                 | Delta value for the Channel 3                           | Integer 16  | 0x000A        | RW     |
|   | Sub Index 4  | CH4 Delta limit                                 | Delta value for the Channel 4                           | Integer 16  | 0x000A        | RW     |
| This object works only if the Object 0x6423 has been enabled.<br>The interrupt is triggered when the input rises or falling above or below the last communicated value. |  |   |   |             |               |        |

