

## Application Note #1234: Pro-face CANopen HTB and Twido Expansion Modules

### Introduction

The EXM expansion modules included in this document are sold by Pro-face America for use as EXM I/O directly mounted on an LT3000 series unit. Except for the EXM-AMI2LT they are fully supported by Pro-face when used in that configuration. They are not approved by or supported by Pro-face for use with the hybrid terminal block HTB-1C0DM9LP. Although Pro-face cannot guarantee your success, Pro-face America technical support will assist you in applying these modules as they do interfacing other third party devices.

The purpose of this document is to provide important information that may be needed to configure the following modules when they are used with the Pro-face CANopen hybrid terminal block HTB-1C0DM9LP:

Discrete I/O Expansion Modules		
Order Number	Part Number	Description
EXM-DAI8DT	TW2-DAI8DT	8pt Discrete Input 120V AC (Sink / Source)
EXM-DDI32DK	TW2-DDI32DK	32pt Discrete Input 24V DC (Sink / Source), HE10 Connector
EXM-DDO32TK	TW2-DDO32TK	32pt Transistor Output 0.1A (Source), HE10 Connector
EXM-DDO32UK	TW2-DDO32UK	32pt Transistor Output 0.1A (Sink), HE10 Connector

Analog I/O Expansion Modules		
Order Number	Part Number	Description
EXM-AMI2LT	TW2-AMI2LT	2ch Analog Input 12bit (TC-K/J/T), Screw Terminal
EXM-AMI8HT	TW2-AMI8HT	8ch Analog Input 10bit (0-10V, 0-20mA), Screw Terminal
EXM-ARI8HT	TW2-ARI8HT	8ch Analog Input 10bit (NTC / PTC), Screw Terminal
EXM-ARI8LRJ	TW2-ARI8LRJ	8ch Analog Input 10bit (Pt100, Pt1000, Ni100, Ni1000), RJ45 Connectors

With the exception of two expansion modules, EXM-DAI8T and EXM-ARI8LRJ, the GP-Pro EX add-on CANopen graphical configuration tool cannot be used with these modules. The graphical editing capability of any slave node can be disabled permanently if the slave node is created or subsequently edited with any install of GP-Pro EX that does not have the add-on tool installed. Slave nodes without graphical properties can be edited in any install of GP-Pro EX even with the graphical interface installed.

*Note: Once the CANopen graphical interface add-on tool is installed in GP-Pro EX it can only be removed by uninstalling and reinstalling GP-Pro EX.*

For instructions to configure HTB and EXM expansion modules refer to the GP-Pro EX Reference Manual section 31.7.1 “Setting Up CANopen” and Pro-face America application note APNT1178 “AGP/LT3000 CANopen Master to Pro-face HTB and EXM I/O”. The remainder of this document only provides the additional information that may be needed.

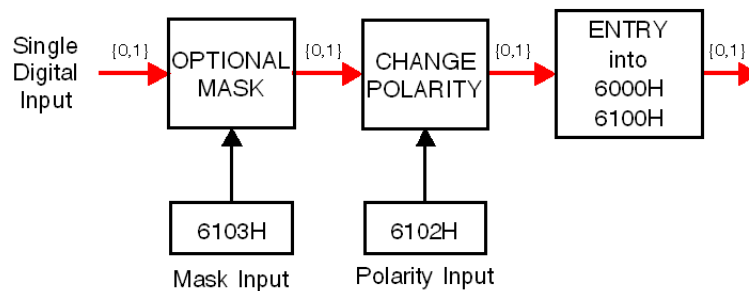
## Discrete I/O Expansion Modules

### Description of Expansion Module Discrete I/Os

Inputs are read by bytes (object 6000H) or by 16 bit words (object 6100H). For each input, the following parameters may be modified:

- Filter mask (object 6103H)
- Polarity (object 6102H).

The status read on inputs is defined as follows:



Source: Schneider Electric Advantys OTB CANopen Remote Inputs and Outputs User Manual 12/2008

### EXM-DAI8DT Expansion Module

#### Configure as EXM-DDI8DT

Configuration in CANopen is identical to the 24 VDC EXM-DDI8DT. Refer to that module in the Pro-face Reference Manual to configure. If you are using the CANopen graphical configurator simply select the equivalent 24 VDC module EXM-DDI8DT.

## Objects for the EXM-DDI32DK Expansion Module

The GP-Pro EX add-on CANopen graphical interface tool cannot be used.

### List of Objects

The sub-index number (N) depends on the location of the module in the island.

The expansion module discrete inputs use the following objects:

Object	Sub-Index	Bit	Description	Value
6000H	N	Bit 0	Read input 0	-
		...	...	
		Bit 7	Read input 7	
	N + 1	Bit 0	Read input 8	-
		...	...	
		Bit 7	Read input 15	
	N + 2	Bit 0	Read input 16	-
		...	...	
		Bit 7	Read input 23	
	N + 3	Bit 0	Read input 24	-
		...	...	
		Bit 7	Read input 31	
6100H	N	Bit 0	Read input 0	-
		...	...	
		Bit 15	Read input 15	
	N + 1	Bit 0	Read input 16	-
		...	...	
		Bit 15	Read input 31	
6102H	N	Bit 0	Input 0 polarity	0: Normal input (default value) 1: Negated input
		...	...	
		Bit 15	Input 15 polarity	
	N + 1	Bit 0	Input 16 polarity	
		...	...	
		Bit 15	Input 31 polarity	
6103H	N	Bit 0	Input 0 mask	0: Mask deactivated (default value) 1: Mask activated
		...	...	
		Bit 15	Input 15 mask	
	N + 1	Bit 0	Input 16 mask	
		...	...	
		Bit 15	Input 31 mask	

Source: Schneider Electric Advantys OTB CANopen Remote Inputs and Outputs User Manual 12/2008

**Objects for EXM DDO32UK and EXM DDO32TK Expansion Modules**

The GP-Pro EX add-on CANopen graphical interface tool cannot be used.

**List of Objects**

The sub-index number (N) depends on the location of the module in the island.

The expansion module discrete inputs use the following objects:

Object	Sub-Index	Bit	Description	Value
6200H	N	Bit 0	Write output 0	-
		...	...	
		Bit 7	Write output 7	
	N + 1	Bit 0	Write output 8	-
		...	...	
		Bit 7	Write output 15	
	N + 2	Bit 0	Write output 16	-
		...	...	
		Bit 7	Write output 23	
	N + 3	Bit 0	Write output 24	-
		...	...	
		Bit 7	Write output 31	
6300H	N	Bit 0	Write output 0	-
		...	...	
		Bit 15	Write output 15	
	N + 1	Bit 0	Write output 16	-
		...	...	
		Bit 15	Write output 31	
6302H	N	Bit 0	Output 0 polarity	0: NO output (default value) 1: NC output
		...	...	
		Bit 15	Output 15 polarity	
	N + 1	Bit 0	Output 16 polarity	0: NO output (default value) 1: NC output
		...	...	
		Bit 15	Output 31 polarity	

Source: Schneider Electric Advantys OTB CANopen Remote Inputs and Outputs User Manual 12/2008

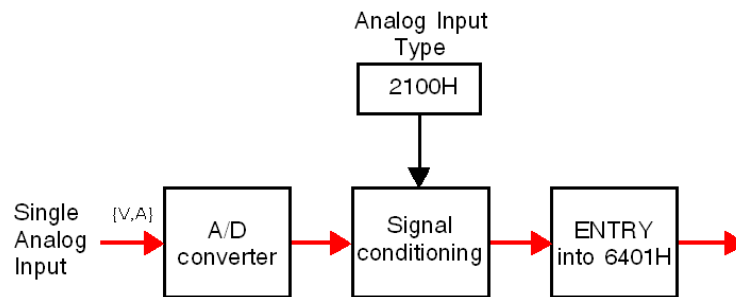
## Analog I/O Expansion Modules

### Description of Analog I/Os

#### Analog inputs

Analog inputs are read by 16 bit words. The value of each channel is contained in a sub-index of object 6401H.

The status read on inputs is defined as follows:



#### Use of the Delta Value (object 6426H)

The delta value is used to define a deadband, within which input signal value changes will not be reported. This is used to avoid a bus overload if data is transmitted about a change in value.

DELTA is expressed according to the unit configured in object 6426H.

#### Example

The last measurement value was 1000. By setting the delta value to 100, a new measurement value is only sent if it is below 900 or above 1100.

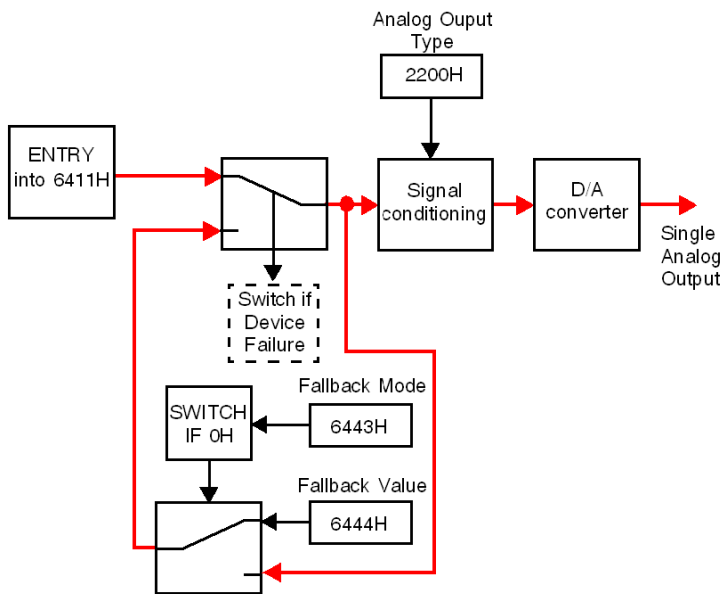
**NOTE:** If data is sent on a change of value, the object "Analog Input Global Interrupt Enable" (6423H) should be set to 1 by the user.

## Analog Outputs

Outputs are written using 16 bit words. Each output byte is contained in the subindex of object 6411H.

In the event of an error (loss of communication with the master for example), the fallback mode is applied.

The state applied to the output is defined as follows (according to the DS 401 device profile) :



**NOTE:** For further information on the various objects, go to the section below *The Object Dictionary*

**Objects for the EXM AMI2LT Expansion Module**

The GP-Pro EX add-on CANopen graphical interface tool cannot be used.

**List of Objects**

The GP-Pro EX add-on CANopen graphical interface tool cannot be used.

The sub-index number (N) depends on the location of the module in the island.

Channel	Object	Sub-Index	Description	Parameter	Default Parameter Value
V0 (input)	2100H	N	Range	0: Not used 5: Thermo K 6: Thermo J 7: Thermo T	0
	2101H	N	Unit	0: Normal 1: Customized 2: Celsius (0.1°C) 3: Fahrenheit (0.1°F)	1
	2102H	N	Minimum value (if 2101H = 1)	Min.	0
	2103H	N	Maximum value (if 2101H = 1)	Max.	7FFFH
	6401H	N	Reading the value	Input	0
	6421H	N	Reason for sending the PDO	Bit 0: High threshold exceeded Bit 1: Low threshold exceeded Bit 2: Delta exceeded	7
	6422H	1	Number of channel that caused the PDO to be sent		0
	6423H	0	Authorize sending the PDO	0: Change in value 1: Event	0
	6424H	N	High threshold		7FFFH
	6425H	N	Low threshold		0
	6426H	N	Delta value		0
V1 (input)	Description identical to the V0 input with the sub-index N+1.				

Source: Schneider Electric Advantys OTB CANopen Remote Inputs and Outputs User Manual 12/2008

**Objects for the EXM AMI8HT Analog Expansion Module**

The GP-Pro EX add-on CANopen graphical interface tool cannot be used.

**List of Objects**

The sub-index number (N) depends on the location of the module in the island.

**NOTE:** All channels used must be the same type (voltage or current).

Channel	Object	Sub-Index	Description	Parameter	Default Parameter Value
V0 (input)	2100H	N	Range	0: Not used 1: 0 ... 20 mA 3: 0...10 V	0
	2101H	N	Unit	0: Normal 1: Customized	1
	2102H	N	Minimum value (if 2101H = 1)	Min.	0
	2103H	N	Maximum value (if 2101H = 1)	Max.	7FFFH
	6401H	N	Read value	Input	0
	6421H	N	Reason for sending the PDO	Bit 0: High threshold exceeded Bit 1: Low threshold exceeded Bit 2: Delta exceeded	7
	6422H	1	Number of channel that caused the PDO to be sent		0
	6423H	0	Authorize sending the PDO	0: Change in value 1: Event	0
	6424H	N	High threshold		7FFFH
	6425H	N	Low threshold		0
6426H	N	Delta value		0	
V1 (input)	Description identical to the V0 input with the sub-index N+1.				
V2 (input)	Description identical to the V0 input with the sub-index N+2.				
V3 (input)	Description identical to the V0 input with the sub-index N+3.				
V4 (input)	Description identical to the V0 input with the sub-index N+4.				
V5 (input)	Description identical to the V0 input with the sub-index N+5.				
V6 (input)	Description identical to the V0 input with the sub-index N+6.				
V7 (input)	Description identical to the V0 input with the sub-index N+7.				

Source: Schneider Electric Advantys OTB CANopen Remote Inputs and Outputs User Manual 12/2008



### Objects for the TM2 ARI8HT Analog Expansion Module

The GP-Pro EX add-on CANopen graphical interface tool cannot be used.

#### NTC Probe

The temperature (T) varies in relation to the resistance (R) according to the equation below:

$$T(R) = \frac{1}{\frac{1}{T_0} + \frac{1}{B} \ln \left[ \frac{R}{R_0} \right]}$$

Where:

- \* T = temperature measured by the probe, in Kelvin (object 6401H)
- \* R = physical value of the resistance in Ohm
- \* R0 = reference resistance in Ohms at temperature T0 (object 2104H)
- \* T0 = reference temperature in Kelvin (object 2105H)
- \* B = sensitivity of NTC probe in Kelvin (object 2106H)

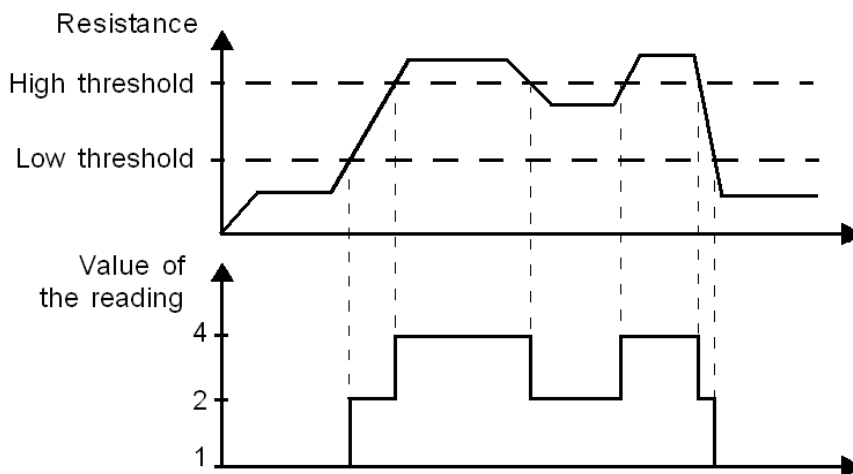
R0, T0 and B should at least be equal to 1.

If the resistance is selected as a unit, the displayed value must be equal to the resistance of the probe.

**NOTE:** 25°C = 77°F = 298.15°K

#### PTC Probe

- \* R0 = high threshold (object 2104H)
  - \* T0 = low threshold (object 2105H)
- Read value = 1 if resistance value < T0  
 Read value = 2 if T0 < resistance value < R0  
 Read value = 4 if resistance value > R0



## List of Objects

The sub-index number (N) depends on the location of the module in the island.

Channel	Object	Sub-Index	Description	Parameter	Default Parameter Value
V0 (input)	2100H	N	Range	0: Not used 13: NTC 14: PTC	0
	2101H	N	Unit	0: Normal 1: Customized 2: Celsius (0.1°C) 3: Fahrenheit (0.1°F) 4: Resistance (ohms)	1
	2102H	N	Minimum value (if 2101H = 1)	Min.	0
	2103H	N	Maximum value (if 2101H = 1)	Max.	7FFFH
	2104H	N	R <sub>0</sub> in NTC or high threshold in PTC	R <sub>0</sub>	014AH
	2105H	N	T <sub>0</sub> in NTC or low threshold in PTC	T <sub>0</sub> (0.01°K)	7477H
	2106H	N	Sensitivity in NTC or ignored in PTC	B (0.01°K)	0DF1H
	6401H	N	Reading the value	Input	0
	6421H	N	Reason for sending the PDO	Bit 0: High threshold exceeded Bit 1: Low threshold exceeded Bit 2: Delta exceeded	7
	6422H	1	Number of channel that caused the PDO to be sent		0
	6423H	0	Authorize sending the PDO	0: Change in value 1: Event	0
	6424H	N	High threshold		7FFFH
	6425H	N	Low threshold		0
	6426H	N	Delta value		0
V1 (input)	Description identical to the V0 input with the sub-index N+1.				
V2 (input)	Description identical to the V0 input with the sub-index N+2.				
V3 (input)	Description identical to the V0 input with the sub-index N+3.				
V4 (input)	Description identical to the V0 input with the sub-index N+4.				

Source: Schneider Electric Advantys OTB CANopen Remote Inputs and Outputs User Manual 12/2008

## EXM ARI8LRJ Analog Expansion Modules

### Configure as EXM ARI8LT

The difference between the EXM ARI8LRJ and EXM ARI8LT is simply the connection style. Configuration in CANopen is identical to the EXM ARI8LT. If you are using the CANopen graphical interface tool simply select the EXM ARI8LT.

## Hardware Profile Objects 6000H to 9FFFH

### Introduction

This section lists the objects relating to the hardware profile. Each object, with all its technical characteristics, is described according to the CANopen standard.

### Object 6000H: Read Input 8 Bits

#### Description

This object contains the value of discrete inputs in 8 bit format.

Sub-index Management:

- Each discrete expansion module uses an even number of sub-indexes (alignment with 16 bit words).
- \*The expansion modules and their sub-indexes are numbered from left to right and from top to bottom.

#### Characteristics

The characteristics of this object are outlined in the following table:

Sub-index	Description	Data type	Default value	Access	PDO Mapping	Backed up
0	Number of sub-indexes (Number of 8 bit inputs)	UNSIGNED8	n	ro	no	no
1	Read input 0 to 7 of communication module	UNSIGNED8	-	ro	yes	no
2	Read input 8 to 15 of communication module	UNSIGNED8	-	ro	yes	no
3	Read input 0 to 7 of first expansion module	UNSIGNED8	-	ro	yes	no
...						
n	Read of last 8 inputs of last expansion module	UNSIGNED8	-	ro	yes	no

Source: Schneider Electric Advantys OTB CANopen Remote Inputs and Outputs User Manual 12/2008

## Object 6100H: Read Input 16 Bits

### Description

This object contains the value of discrete inputs in 16 bit format.

**NOTE:** For a 32-input discrete expansion module two sub-indexes are used.

### Characteristics

The characteristics of this object are outlined in the following table:

Sub-index	Description	Data type	Default value	Access	PDO Mapping	Backed up
0	Number of sub-index (number of 16 bit inputs)	UNSIGNED8	-	ro	no	no
1	Read of inputs 0 to 15 of communication module	UNSIGNED16	-	ro	yes	no
2	Read inputs 0 to 15 of first expansion module	UNSIGNED16	-	ro	yes	no
...						
n	Read of last 16 inputs of last expansion module	UNSIGNED16	-	ro	yes	no

Source: Schneider Electric Advantys OTB CANopen Remote Inputs and Outputs User Manual 12/2008

## Object 6103H: Filter Mask Input 16 Bits

### Description

This object is used to configure the mask for inputs.

- 0 : input read
- 1 : input ignored

**NOTE:** I/O status LEDs continue to show the actual electrical state of connected hardware and are not affected by this object.

The change in polarity does not affect the behavior described above.

### Characteristics

The characteristics of this object are outlined in the following table:

Sub-index	Description	Data type	Default value	Access	PDO Mapping	Backed up
0	Number of sub-index (number of 16 bit inputs)	UNSIGNED8	n	ro	no	yes
1	Input mask of communication module	UNSIGNED16	0	rw	no	yes
2	Input mask of first expansion module	UNSIGNED16	0	rw	no	yes
...						
n	Input mask of last expansion module	UNSIGNED16	0	rw	no	yes

Source: Schneider Electric Advantys OTB CANopen Remote Inputs and Outputs User Manual 12/2008

## Object 6200H: Write Outputs 8 Bits

### Description

This object commands the status of discrete outputs.

Sub-index Management:

- Each discrete expansion module uses an even number of sub-indexes (alignment with 16 bit words).
- The expansion modules and their sub-indexes are numbered from left to right and from top to bottom.
- 

### Characteristics

The characteristics of this object are outlined in the following table:

Sub-index	Description	Data type	Default value	Access	PDO Mapping	Backed up
0	Sub-index number	UNSIGNED8	n	ro	no	no
1	Discrete output of communication module	UNSIGNED8	0	rw	yes	no
2	Not used as the communication module only has 8 outputs	UNSIGNED8	0	rw	yes	no
3	Discrete output of first expansion module	UNSIGNED8	0	rw	yes	no
...						
n	Discrete output of last expansion module	UNSIGNED8	0	rw	yes	no

Source: Schneider Electric Advantys OTB CANopen Remote Inputs and Outputs User Manual 12/2008

## Object 6300H: Write Outputs 16 Bits

### Description

This object commands the status of discrete outputs.

### Characteristics

The characteristics of this object are outlined in the following table:

Sub-index	Description	Data type	Default value	Access	PDO Mapping	Backed up
0	Number of sub-index (number of 16 bit outputs)	UNSIGNED8	n	ro	no	no
1	Discrete output of communication module	UNSIGNED16	0	rw	yes	no
2	Discrete output of first expansion module	UNSIGNED16	0	rw	yes	no
...						
n	Discrete output of last expansion module	UNSIGNED16	0	rw	yes	no

Source: Schneider Electric Advantys OTB CANopen Remote Inputs and Outputs User Manual 12/2008

## Object 6302H: Polarity Outputs 16 Bits

### Description

This object commands the polarity for a group of 16 discrete outputs.

**NOTE:** I/O status LEDs continue to show the actual electrical state of connected hardware and are not affected by this object.

### Characteristics

The characteristics of this object are outlined in the following table:

Sub-index	Description	Data type	Default value	Access	PDO Mapping	Backed up
0	Number of sub-index (number of 16 bit outputs)	UNSIGNED8	n	ro	no	yes
1	Polarity of communication module's discrete outputs	UNSIGNED16	0	rw	no	yes
2	Polarity of first expansion module's discrete outputs	UNSIGNED16	0	rw	no	yes
...						
n	Polarity of last expansion module's discrete outputs	UNSIGNED16	0	rw	no	yes

### Polarity

The characteristics of the outputs are outlined in the following table:

Status	Description
0 (output not reversed)	<ul style="list-style-type: none"> <li>0 V or contact open = 0</li> <li>24 V or contact closed = 1</li> </ul>
1 (output reversed)	<ul style="list-style-type: none"> <li>0 V or contact open = 1</li> <li>24 V or contact closed = 0</li> </ul>

Source: Schneider Electric Advantys OTB CANopen Remote Inputs and Outputs User Manual 12/2008

## Object 6306H: Fallback Mode Outputs 16 Bits

### Description

This object indicates the fallback mode adopted by outputs in the event of an internal fault or a communication fault.

Status	Description
0	Maintain value
1	Fallback value (defined in object 6307H)

### Characteristics

The characteristics of this object are outlined in the following table:

Sub-index	Description	Data type	Default value	Access	PDO Mapping	Backed up
0	Number of sub-index (number of 16 bit outputs)	UNSIGNED8	n	ro	no	yes
1	Fallback mode of communication module	UNSIGNED16	FFFFH	rw	no	yes
2	Fallback mode of first expansion module	UNSIGNED16	FFFFH	rw	no	yes
...						
n	Fallback mode of last expansion module	UNSIGNED16	FFFFH	rw	no	yes

Source: Schneider Electric Advantys OTB CANopen Remote Inputs and Outputs User Manual 12/2008

## Object 6307H: Fallback Value Output 16 Bits

### Description

The object indicates the fallback value adopted by outputs in the event of an internal fault or a communication fault if the corresponding bit in the object 6306H is at 1. If the object 6308H is at 0, the fallback is not operational.

### Characteristics

The characteristics of this object are outlined in the following table:

Sub-index	Description	Data type	Default value	Access	PDO Mapping	Backed up
0	Number of sub-index (number of 16 bit outputs)	UNSIGNED8	n	ro	no	yes
1	Fallback value of communication module	UNSIGNED16	0	rw	no	yes
2	Fallback value of first expansion module	UNSIGNED16	0	rw	no	yes
...						
n	Fallback value of last expansion module	UNSIGNED16	0	rw	no	yes

Source: Schneider Electric Advantys OTB CANopen Remote Inputs and Outputs User Manual 12/2008

## Object 6308H: Filter Mask Output 16 Bits

### Description

This object defines the filter mask for a group of 16 outputs.

Status	Description
0	Current output value is frozen
1	Authorizes writing to output (corresponding to the value of object 6200H or 6300H)

### Characteristics

The characteristics of this object are outlined in the following table:

Sub-index	Description	Data type	Default value	Access	PDO Mapping	Backed up
0	Number of sub-index (number of 16 bit outputs)	UNSIGNED8	n	ro	no	yes
1	Filter mask of communication module	UNSIGNED16	FFFFH	rw	no	yes
2	Filter mask of first expansion module	UNSIGNED16	FFFFH	rw	no	yes
...						
n	Filter mask of last expansion module	UNSIGNED16	FFFFH	rw	no	yes

Source: Schneider Electric Advantys OTB CANopen Remote Inputs and Outputs User Manual 12/2008

## Object 6401H: Read Analog Input 16 Bits

### Description

Analog input values are stored in this object.

Sub-index Management:

- Each channel uses one sub-index.
- The expansion modules and their sub-indexes are numbered from left to right and from top to bottom.

**NOTE:** This rule applies to all objects relating to analog inputs.

### Characteristics

The characteristics of this object are outlined in the following table:

Sub-index	Description	Data type	Default value	Access	PDO Mapping	Backed up
0	Number n of analog channels	UNSIGNED8	n	ro	no	no
1	Value of analog entry on channel 0 of first analog module	UNSIGNED16	0	ro	yes	no
...						
n	Value of analog entry on last channel of last analog module	UNSIGNED16	0	ro	yes	no

Source: Schneider Electric Advantys OTB CANopen Remote Inputs and Outputs User Manual 12/2008



## Object 6411H: Write Analog Output 16 Bits

### Description

This object writes analog output values.

Managing the sub-indexes:

\* Each channel uses 1 sub-index (1 per channel)

\* The expansion modules and their sub-indexes are numbered from left to right and from top to bottom.

**NOTE:** This rule applies to all objects relating to analog outputs.

### Characteristics

The characteristics of this object are outlined in the table below:

Sub-Index	Description	Data Type	Default Value	Access	PDO Mapping	Saved
0	Number of sub-indexes (Number of analog channels)	UNSIGNED8	n	ro	no	no
1	Writes the value of the channel 0 analog output on the first analog module	INTEGER16	0	rw	yes	no
...						
n	Writes the value of the last analog output on the last analog module	INTEGER16	0	rw	yes	no

Source: Schneider Electric Advantys OTB CANopen Remote Inputs and Outputs User Manual 12/2008

## Object 6421H: Analog Input Interrupt Trigger Selection

### Description

This object defines the event that triggers PDO transmission if object 6423H is TRUE.

### Characteristics

The characteristics of this object are outlined in the table below:

Sub-Index	Description	Data Type	Default Value	Access	PDO Mapping	Saved
0	Number of sub-indexes (number of analog inputs)	UNSIGNED8	n	ro	no	yes
1	Trigger event for the channel 0 analog input on the first analog module	UNSIGNED8	7	rw	no	yes
...						
n	Trigger event for the last analog input on the last analog module	UNSIGNED8	7	rw	no	yes

Source: Schneider Electric Advantys OTB CANopen Remote Inputs and Outputs User Manual 12/2008

### Bit assignment

Bit 0: Value greater than the upper threshold

Bit 1: Value smaller than the lower threshold

Bit 2: Delta exceeded

## Object 6422H: Analog Input Interrupt Source

### Description

This object contains the number of the channel that generated the PDO send.

### Characteristics

The characteristics of this object are outlined in the following table:

Sub-index	Description	Data type	Default value	Access	PDO Mapping	Backed up
0	Sub-index number	UNSIGNED8	1	ro	no	no
1	Number of channel that generated the PDO send.	UNSIGNED32	-	ro	yes	no

Source: Schneider Electric Advantys OTB CANopen Remote Inputs and Outputs User Manual 12/2008

## Object 6423H: Analog Input Global Interrupt Enable

### Description

This object authorizes the trigger events of analog inputs. If the value is 1, a PDO will be sent according to the trigger mode set in object 6421H.

### Properties

The characteristics of this object are outlined in the following table:

Sub-index	Description	Data type	Default value	Access	PDO Mapping	Backed up
-	-	BOOLEAN	0	rw	no	no

Source: Schneider Electric Advantys OTB CANopen Remote Inputs and Outputs User Manual 12/2008

**NOTE:** If the value is 0, no analog PDO will be sent in transmission mode 254 and 255.

## Object 6424H: Analog Input Interrupt Upper Limit Integer

### Description

This object defines the high threshold that can trigger the transmission of a PDO depending on the configuration of objects 6421H and 6423H.

### Properties

The characteristics of this object are outlined in the following table:

Sub-index	Description	Data type	Default value	Access	PDO Mapping	Backed up
0	Number of sub-indexes (number of analog inputs)	UNSIGNED8	n	ro	no	yes
1	High threshold of channel 0	INTEGER32	0	rw	no	yes
...						
n	High threshold of last channel	INTEGER32	0	rw	no	yes

Source: Schneider Electric Advantys OTB CANopen Remote Inputs and Outputs User Manual 12/2008

## Object 6425H: Analog Input Interrupt Lower Limit

### Description

This object defines the low threshold that can trigger the transmission of a PDO depending on the configuration of objects 6421H and 6423H.

### Characteristics

The characteristics of this object are outlined in the following table:

Sub-index	Description	Data type	Default value	Access	PDO Mapping	Backed up
0	Number of sub-indexes (number of analog inputs)	UNSIGNED8	n	ro	no	yes
1	Low threshold of channel 0	INTEGER32	0	rw	no	yes
...						
n	Low threshold of last channel	INTEGER32	0	rw	no	yes

Source: Schneider Electric Advantys OTB CANopen Remote Inputs and Outputs User Manual 12/2008

## Object 6426H: Analog Input Interrupt Delta Value

### Description

This object defines the Delta value that can trigger the transmission of a PDO depending on the configuration of objects 6421H and 6423H.

### Characteristics

The characteristics of this object are outlined in the following table:

Sub-index	Description	Data type	Default value	Access	PDO Mapping	Backed up
0	Number n of analog channels	UNSIGNED8	n	ro	no	yes
1	Delta value of channel 0 of first module	UNSIGNED32	0	rw	no	yes
...						
n	Delta value of last channel of last module	UNSIGNED32	0	rw	no	yes

Source: Schneider Electric Advantys OTB CANopen Remote Inputs and Outputs User Manual 12/2008

## Object 6443H: Analog Output Fallback Mode

### Description

This object commands the fallback mode adopted by outputs in the event of an internal fault or a communication fault.

### Characteristics

The characteristics of this object are outlined in the following table:

Sub-index	Description	Data type	Default value	Access	PDO Mapping	Backed up
0	Number of sub-indexes (number of analog inputs)	UNSIGNED8	n	ro	no	yes
1	Fallback mode for channel 0	UNSIGNED8	1	rw	no	yes
...						
n	Fallback mode for last channel	UNSIGNED8	1	rw	no	yes

### Fallback mode

Status	Description
0	Maintain value
1	Fallback value (defined in object 6444H)

Source: Schneider Electric Advantys OTB CANopen Remote Inputs and Outputs User Manual 12/2008

## Object 6444H: Analog Output Fallback Value

### Description

The object indicates the fallback value adopted by outputs in the event of an internal fault or a communication fault if the corresponding sub-index in the object 6443H is at 1.

### Characteristics

The characteristics of this object are outlined in the following table:

Sub-index	Description	Data type	Default value	Access	PDO Mapping	Backed up
0	Sub-index number	UNSIGNED8	n	ro	no	yes
1	Fallback value for channel 0	INTEGER32	0	rw	no	yes
...						
n	Fallback value for last channel	INTEGER32	0	rw	no	yes

Source: Schneider Electric Advantys OTB CANopen Remote Inputs and Outputs User Manual 12/2008

*Information to configure the Expansion modules in this document is courtesy of Schneider Electric. Taken from the Advantys OTB CANopen Remote Inputs and Outputs User Manual 12/2008*

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