



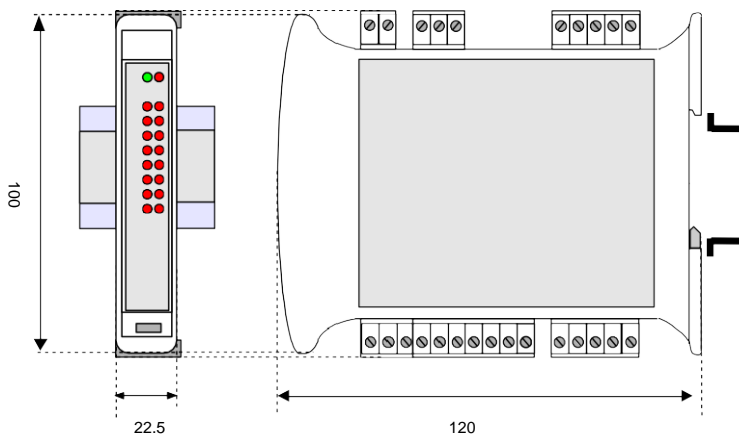
SmartMod+ Digital Input/Output Module HE389DIQ516 8 Digital Inputs 8 Digital Outputs Type PNP Transistor



1 Specifications

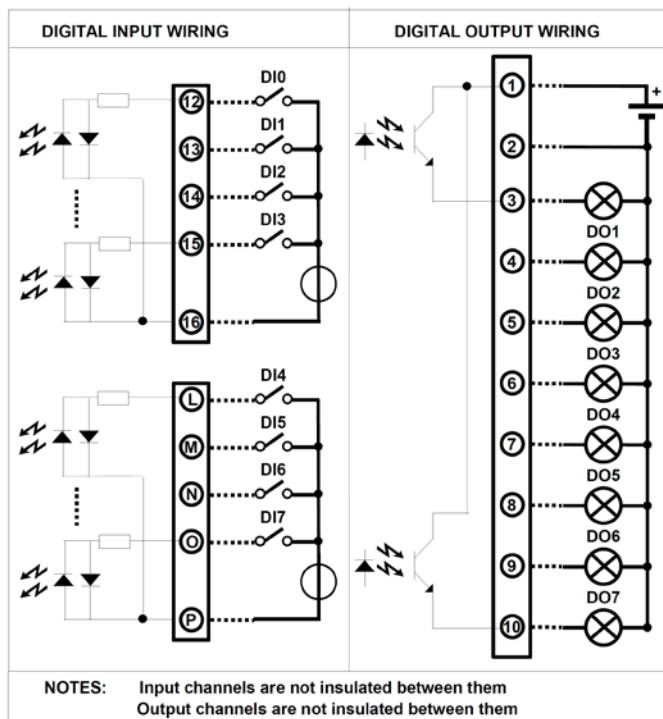
Input Channels	8	Output Channels	8
Voltage Input (bipolar)	OFF state 0/3 V ON state 10/30 V	Output Type	PNP
Input Impedance	4.7 KΩ	Storage Temp.	-40° to 85°C
Sample Time (per channel)	0.5/ 1 sec	Output Voltage	10.5 / 30 Vdc
Operating Temp.	-10° to 60°C	Max. Load (*)	500mA per channel 1A per module
Relative Humidity	0 to 90% Non-condensing	(*)	Protection against over-current and temperature Short circuit current 1.7A
Mounting	DIN Rail standard EN-50022	Inductive load	48 Ω – 2H max
External Power Supply Voltage	10-30Vdc	Weight	150g
Required Power (Steady State)	35mA @ 24Vdc 45mA @ 10Vdc	Communications	CANopen Protocol
Reverse Polarity Protection	60 Vdc max	Max. Data Transmission Baud Rate	1 Mbps
Isolation	2000 Vac, 50Hz, 1 min	Max. Distance	1200m
CE Compliance	Immunity EN 61000-6-2 Emission EN61000-6-4		

Mechanical Dimensions (mm)

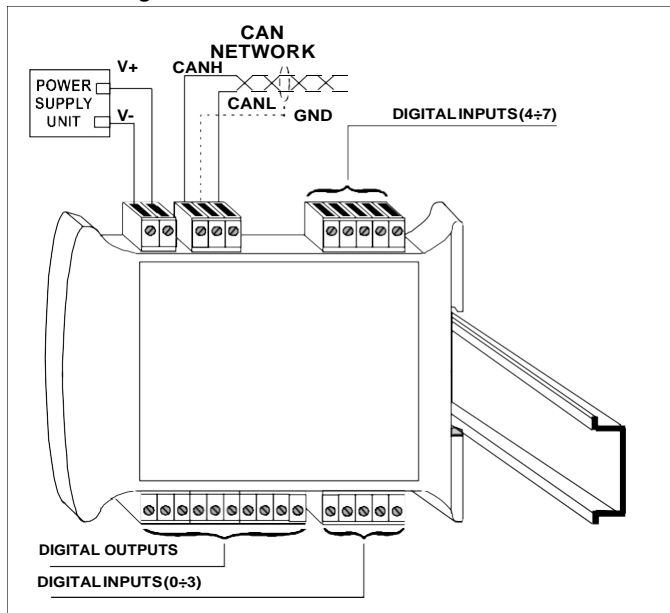


Note: Number of I/O terminal connections varies from model to model

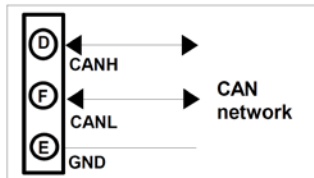
CONNECTIONS



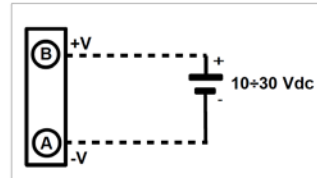
2 Wiring - I/O



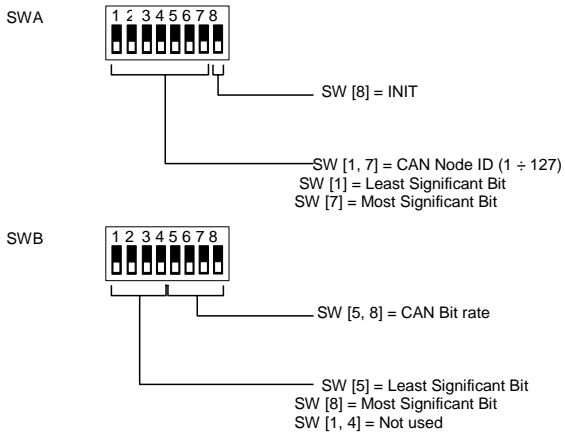
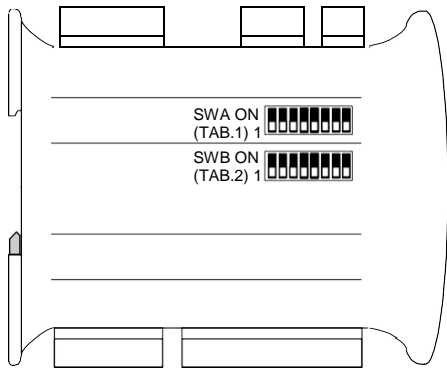
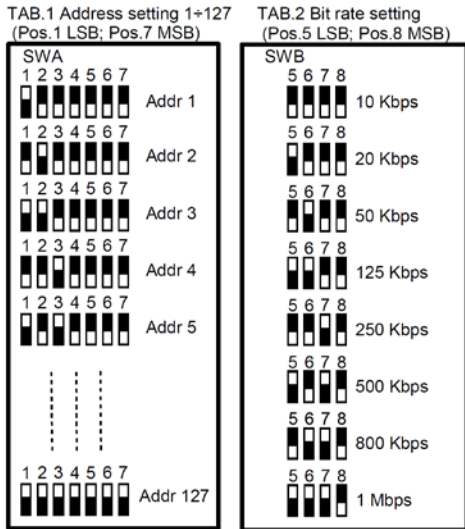
CAN NETWORK WIRING



POWER SUPPLY WIRING



3 DIP Switches: Table of Configuration



4 Communication Protocols

This module is designed to work with the **CANopen Protocol**, one of the most used standard communication protocols, and allows the direct interface of HE389 series modules to Horner X-Series CAN Controllers in compliance with the CiA DS 301 and CiA DS 401 standards.

5 User Instructions

Before installing this module, please read the **Installation Instructions** section carefully. Connect the power supply, the data line and the I/O signals as shown in the **Wiring** section. Refer to the **LED Indicator** section to verify that the module is working correctly.
For easy maintenance or the substitution of the module, it is possible to “hot swap” the terminals.

6 Installation Instructions

Attach the HE389DIQ512 to DIN rails in the vertical position. For optimum operation follow these instructions:

When the modules are installed side by side and - If the panel temperature exceeds 45°C and power supply voltage is 10 VDC - **it may be necessary to separate them by >5 mm:**

Make sure that there is sufficient air flow around the module, avoid placing near cable routing or other objects that can obstruct the ventilation slits. Additionally, avoid mounting modules above appliances that generate heat. Ideally, they should be placed in the lower part of the panel. Install the module in a location without vibration.

It is also recommended to avoid routing conductors near power signal cables (motors, induction ovens, inverters etc...) and to use shielded cables for connecting signals.

7 LED Indicator

LED	COLOUR	STATE	DESCRIPTION
RUN	GREEN	ON	Device in Operational mode
		BLINKING	Device in Pre-Operational mode
		SLOW BLINKING	Device stopped
ERR	RED	OFF	No error
		ON	Bus off
		BLINKING	Invalid configuration
I n	RED	ON	State 1 Digital Inputs.
		OFF	State 0 Digital Inputs.
O n	RED	ON	State 1 Digital Outputs.
		OFF	State 0 Digital Outputs.

The LED's are located on the front of the model.

8 The Object Dictionary (OD)

The Object Dictionary is the part of the module profile, where the objects that influence the modules behavior are grouped (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	No. 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 the name of the object inside the OD.

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

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

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

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

RO: indicates an object that can only be read.

RW: indicates an object that can be read and written to.

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

9 Process Data Objects (PDO)

The real-time data-transfer is performed by means of the **Process Data Object (PDO)**. The PDO is only transmitted from one Producer to one or more customers. The data field of a PDO can be between 1 and 8 bytes long.

There are two kinds of PDOs: the first is used for data transmission (TPDO) and the second for data reception (RPDO).

The PDOs are described by the communication and 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 are 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 predicted.

- 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 receiving a SYNC object when one or more parameters change. Value 1-240.

The TPDO is synchronous cyclic. It is transmitted after every nth 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 as a function of the parameter Event Timer.

For RPDOs:

Value 0-240.
The RPDO is synchronous and the actual value of the 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.

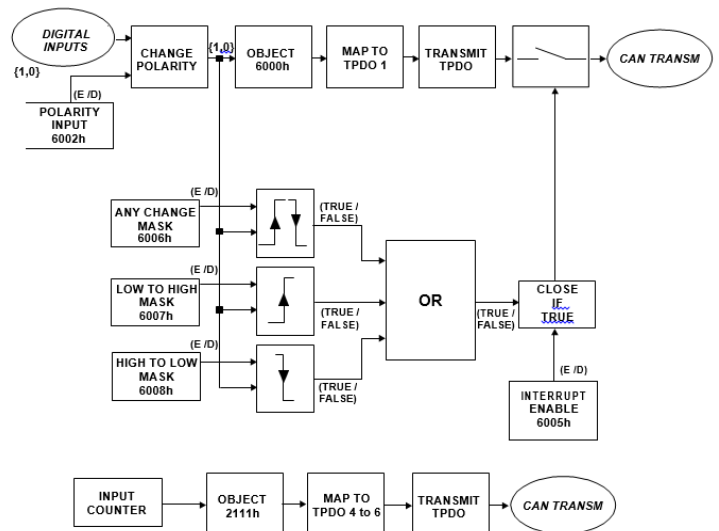
Inhibit Time.

This is the time when 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

10 Functional Diagram for Digital Inputs Transmission



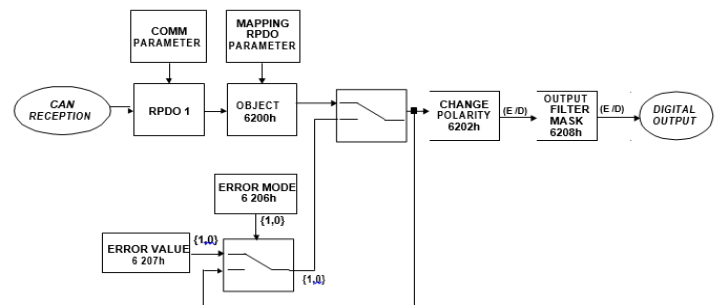
11 Interrupt Triggering TPDO Transmission

The digital inputs are processed and transferred to the object 6000h. The data associated with this object is moved to the 1st TPDO as a function of the mapping parameters set in the objects 1A00h. The communication parameters of TPDO are defined in the objects 1800h.

The system executes the Boolean operation OR between the values of the masks contained in the objects 6006h (any change mask), 6007h (low to high mask) and 6008h (high to low mask).

If the result of the operation OR is true, the transmission of the TPDO is performed only if the object 6005h has been enabled (value set as 1). When the digital inputs change to the logic state 1, the associated counter mapped into the object 2111h is incremented. The data associated with this object is moved to the TPDOs as a function of the mapping parameters set in the objects from 1801h up to 1803h. The communication parameters of TPDOs are defined in the objects from 1A01h up to 1A03h. To reset the value of the counter, write 0 in the Sub Index of the counter selected in the object 2111h.

12 Functional Diagram for Digital Outputs Operation



13 RPDO and Digital Outputs

The digital output settings coming from the CAN bus are transferred to the 1st RPDO object as a function of the mapping parameters set in the object 1600h. The communication parameters of RPDO are defined in the object 1400h. If there are no internal errors the information is processed as defined in the settings of the object 6202h (Change polarity output) and 6208h (Output filter mask) and transferred to the digital outputs of the device. If an internal error occurs and if the object 6206h is set as 0 all the output values are set as defined from the object 6207h (Error value), if the object 6206h is set as 255 all the output values are kept.

It is also possible to set a Safe value for the outputs using the object **Consumer Time** Sub index 1.

Linking this object to the generation of a Heartbeat by the device or from another node, if the transmission (Producer) or reception (Consumer) of this object is missed the outputs will be set as defined in the object 6206h.

Example with object Consumer Heartbeat Time: Master unit: node ID 1
Device node ID 3
Producer Heartbeat time Master: 500 ms (01F4 hex.)
Consumer Heartbeat time device: Node 1, 1000 ms (000103E8 hex.) Object 6206h = 0 (00 hex) – all the outputs in OFF.

If the Master unit does not send the Heartbeat on the line for 1000 ms, the outputs of the device will be set as defined in the object 6206h.

Example with object Producer Heartbeat Time: Master unit: node ID 1
Device node ID 3
Producer Heartbeat time Master: 500 ms (01F4 hex.) Object 6206h = 0 (00 hex) – all the outputs in OFF.
If the CAN line of the device is interrupted the outputs of the device will be set as defined in the object 6206h.

14 HE389DIQ516 Object Dictionary

Index	No. Sub-index	Name	Description	Object type	Default value	Access
0x1000	0	Device Type	Identifies the type of device (digital inputs & outputs) and its Device Profile (CiA 401)	Unsigned 32	0x00030191	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
	2	Predefined error field	Contains the list of the recent errors	Array	-----	----
0x1003	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 μ s	Unsigned 32	0x00000000	RW
0x1007	0	Synchronous window length	Defines the time window expressed as μ 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	"HE389DIQ516"	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
	5	Store parameters	Supports the saving of the parameters	Array	-----	----
0x1010	Sub Index 0	Max sub-index number	Contains the number of sub index supported	Unsigned 8	0x02	RO
	Sub Index 1	Save all parameters	Saves all the parameters	Unsigned 32	0x00000000	RW
Write the value 65766173 Hex, 1702257011 Decimal (ASCII "save") in sub-index to save data.						
	5	Restore default	Restore the default values of the parameters	Array	-----	----
0x1011	Sub Index 0	Max sub-index number	Contains the number of sub index supported	Unsigned 8	0x02	RO
	Sub Index 1	Restore all parameters	Restores all the parameters	Unsigned 32	0x00000000	RW
Write the value 64616F6C Hex, 1684107116 Decimal (ASCII "load") in sub-index to restore data. Type of reset caused at the restore of default: -restore of sub index 1 : Node reset						

Index	No. Sub-index	Name	Description	Object type	Default value	Access
0x1014	0	COB-ID Emergency Object (EMCY)	Defines the COB-ID of the Emergency Object	Unsigned 32	Node ID + 0x80	RW
	0	Inhibit time (EMCY)	Defines the inhibit time for the Emergency Object (multiple of 100 µs)	Unsigned 32	0x00000000	RW
0x1015	2	Consumer heartbeat time	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
0x1016	Sub Index 1	Consumer heartbeat time	Heartbeat time	Unsigned 32	0x00000000	RW
	0	Producer heartbeat time	Defines the heartbeat cycle time (multiple of 1 ms)	Unsigned 16	0x0000	RW
0x1017	5	Identity	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
0x1018	Sub Index 1	Vendor ID	Horner APG Unique code	Unsigned 32	0x00000044	RO
	Sub Index 2	Product code	HE389DIQ516 ID code	Unsigned 32	0x00000006	RO
0x1019	Sub Index 3	Revision number	Revision number	Unsigned 32	0x00000000	RO
	Sub Index 4	Serial number	Serial number code	Unsigned 32	0x00000000	RO
0x1020	2	Error behaviour	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
0x1021	Sub Index 1	Communication error	Defines the device condition for a communication error	Unsigned 8	0x00	RW
	3	Server SDO parameters	Describes the SDO communication channel for the node	Array	-----	----
0x1022	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
0x1023	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
	3	1st RPDO communication parameters	List of the parameters of the 1 st RPDO	Record	-----	----
0x1024	Sub Index 0	Max sub-index number	Contains the number of sub-index supported	Unsigned 8	0x02	RO
	Sub Index 1	COB ID	Defines the COB ID of the PDO	Unsigned 32	Node ID + 0x200	RO
0x1025	Sub Index 2	Transmission type	Defines the transmission type for the RPDO	Unsigned 8	0xFF	RW
	2	1st RPDO mapping parameters	List of mapping parameters of the 1 st RPDO	Array	-----	----
0x1026	Sub Index 0	Max sub-index number	Contains the number of sub-index supported	Unsigned 8	0x02	RW
	Sub Index 1	Mapped Object 1	Defines the 1 st object mapped into RPDO	Unsigned 32	0x62000108	RW

Index	No. Sub-index	Name	Description	Object type	Default value	Access
0x1800	5	1st TPDO communication parameters	List of the parameters of the 1 st TPDO	Record	-----	----
	Sub Index 0	Max sub-index number	Contains the number of sub-index supported	Unsigned 8	0x05	RO
	Sub Index 1	COB ID	Defines the COB ID of the PDO	Unsigned 32	Node ID + 0x180	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 μ s)	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
0x1801	5	4th TPDO communication parameters	List of the parameters of the 4 th TPDO	Record	-----	----
	Sub Index 0	Max sub-index number	Contains the number of sub-index supported	Unsigned 8	0x05	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 μ s)	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
0x1802	5	5th TPDO communication parameters	List of the parameters of the 5 th TPDO	Record	-----	----
	Sub Index 0	Max sub-index number	Contains the number of sub-index supported	Unsigned 8	0x05	RO
	Sub Index 1	COB ID	Defines the COB ID of the PDO	Unsigned 32	Node ID + 0x380	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 μ s)	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
0x1803	5	6th TPDO communication parameters	List of the parameters of the 6 th TPDO	Record	-----	----
	Sub Index 0	Max sub-index number	Contains the number of sub-index supported	Unsigned 8	0x05	RO
	Sub Index 1	COB ID	Defines the COB ID of the PDO	Unsigned 32	Node ID + 0x480	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 μ s)	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
0x1A00	2	1st TPDO mapping parameters	List of mapped parameters of the 1 st TPDO	Array	-----	----
	Sub Index 0	Number of mapped objects	Contains the number of sub-index supported	Unsigned 8	0x01	RO

Index	No. Sub-index	Name	Description	Object type	Default value	Access
0x1A01	3	4th TPDO mapping parameters	List of mapped parameters of the 4 th TPDO	Array	-----	----
	Sub Index 0	Number of mapped objects	Contains the number of sub-index supported	Unsigned 8	0x02	RO
	Sub Index 1	Mapped Object 1	Defines the 1 st object mapped into TPDO	Unsigned 32	0x21110120	RW
	Sub Index 2	Mapped Object 2	Defines the 2 nd object mapped into TPDO	Unsigned 32	0x21110220	RW
0x1A02	3	5th TPDO mapping parameters	List of mapped parameters of the 5 th TPDO	Array	-----	----
	Sub Index 0	Number of mapped objects	Contains the number of sub-index supported	Unsigned 8	0x02	RO
	Sub Index 1	Mapped Object 1	Defines the 1 st object mapped into TPDO	Unsigned 32	0x21110320	RW
	Sub Index 2	Mapped Object 2	Defines the 2 nd object mapped into TPDO	Unsigned 32	0x21110420	RW
0x1A03	3	6th TPDO mapping parameters	List of mapped parameters of the 6 th TPDO	Array	-----	----
	Sub Index 0	Number of mapped objects	Contains the number of sub-index supported	Unsigned 8	0x02	RO
	Sub Index 1	Mapped Object 1	Defines the 1 st object mapped into TPDO	Unsigned 32	0x21110520	RW
	Sub Index 2	Mapped Object 2	Defines the 2 nd object mapped into TPDO	Unsigned 32	0x21110620	RW
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). The values are programmable only from dip switch.						
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. The values are programmable only from dip switch.						
0x2111	9	Input Counter Value	Contains the value of 8 input counter available	Array	-----	----
	Sub Index 0	Max sub-index number	Contains the number of sub-index supported	Unsigned 8	0x08	RO
	Sub Index 1	Input 1 counter	Contains the value of the counter associated to the digital input 1	Unsigned 32	0x00000000	RW
	Sub Index 2	Input 2 counter	Contains the value of the counter associated to the digital input 2	Unsigned 32	0x00000000	RW
	Sub Index 3	Input 3 counter	Contains the value of the counter associated to the digital input 3	Unsigned 32	0x00000000	RW
	Sub Index 4	Input 4 counter	Contains the value of the counter associated to the digital input 4	Unsigned 32	0x00000000	RW
	Sub Index 5	Input 5 counter	Contains the value of the counter associated to the digital input 5	Unsigned 32	0x00000000	RW
	Sub Index 6	Input 6 counter	Contains the value of the counter associated to the digital input 6	Unsigned 32	0x00000000	RW
	Sub Index 7	Input 7 counter	Contains the value of the counter associated to the digital input 7	Unsigned 32	0x00000000	RW
	Sub Index 8	Input 8 counter	Contains the value of the counter associated to the digital input 8	Unsigned 32	0x00000000	RW

Index	No. Sub-index	Name	Description	Object type	Default value	Access
0x6000	2	Read Input 8 bit	Contains the measure of the Digital Input Channels	Array	-----	----
	Sub Index 0	Max sub-index number	Contains the number of sub-index supported	Unsigned 8	0x01	RO
	Sub Index 1	Digital Inputs 1 to 8	Digital input channel measure	Unsigned 8	0x00	RO
0x6002	2	Polarity Input 8 bit	Contains the settings of the polarity of each single input bit	Array	-----	----
	Sub Index 0	Max sub-index number	Contains the number of sub-index supported	Unsigned 8	0x01	RO
	Sub Index 1	Polarity bit 1 to 8	Digital input polarity settings 0=input not inverted; 1=input inverted	Unsigned 8	0x00	RW
0x6005	0	Global Interrupt Enable Digital	Allows to enable / disable the global interrupt behaviour 0 = global interrupt disabled 255 = global interrupt enabled	Unsigned 8	255	RW
0x6006	2	Interrupt Mask Any Change 8 bit	Defines which input port shall activate an interrupt on positive / negative edge detection	Array	-----	----
	Sub Index 0	Max sub-index number	Contains the number of sub-index supported	Unsigned 8	0x01	RO
	Sub Index 1	Mask bit 1 to 8	Mask bit settings 0=interrupt disable; 1=interrupt enabled	Unsigned 8	0xFF	RW
0x6007	2	Interrupt Mask Low-to-High 8 bit	Defines which input port shall activate an interrupt on positive edge detection	Array	-----	----
	Sub Index 0	Max sub-index number	Contains the number of sub-index supported	Unsigned 8	0x01	RO
	Sub Index 1	Mask bit 1 to 8	Mask bit settings 0=interrupt disable; 1=interrupt enabled	Unsigned 8	0x00	RW
0x6008	2	Interrupt Mask High-to-Low 8 bit	Defines which input port shall activate an interrupt on negative edge detection	Array	-----	----
	Sub Index 0	Max sub-index number	Contains the number of sub-index supported	Unsigned 8	0x01	RO
	Sub Index 1	Mask bit 1 to 8	Mask bit settings 0=interrupt disable; 1=interrupt enabled	Unsigned 8	0x00	RW
0x6200	2	Write Output bits	Contains the programming for the digital outputs bits	Array	-----	----
	Sub Index 0	Max sub-index number	Contains the number of sub-index supported	Unsigned 8	0x01	RO
	Sub Index 1	Digital Outputs 1 to 8	Digital output programming	Unsigned 8	0x00	WO
0x6202	2	Change Polarity Output bits	Contains the settings of the polarity of each single output bit	Array	-----	----
	Sub Index 0	Max sub-index number	Contains the number of sub-index supported	Unsigned 8	0x01	RO
	Sub Index 1	Polarity outputs 1 to 8	Digital outputs polarity settings 0=output not inverted; 1=output inverted	Unsigned 8	0x00	RW
0x6206	2	Error mode outputs 8 bits	Defines the condition of each output bit when an internal error occurs	Array	-----	----
	Sub Index 0	Max sub-index number	Contains the number of sub-index supported	Unsigned 8	0x01	RO
	Sub Index 1	Error mode outputs 1 to 8	Digital output condition 0=output value set as defined in object 6207 1=output value kept	Unsigned 8	0xFF	RW
0x6207	2	Error value outputs 8 bits	Defines the value of each output bit when an internal error occurs	Array	-----	----
	Sub Index 0	Max sub-index number	Contains the number of sub-index supported	Unsigned 8	0x01	RO
	Sub Index 1	Error value outputs 1 to 8	Digital output value 0 = output value set to 0 1 = output value set to 1	Unsigned 8	0x00	RW
0x6208	2	Filter Mask outputs 8 bits	Defines which output port will be set to the received out value	Array	-----	----
	Sub Index 0	Max sub-index number	Contains the number of sub-index supported	Unsigned 8	0x01	RO
	Sub Index 1	Mask outputs 1 to 8	Digital output enabled	Unsigned 8	0xFF	RW

15 Installation / safety

Warning: Remove power from the OCS controller, CAN port, and any peripheral equipment connected to this local system before adding or replacing this or any module.

- All applicable codes and standards should be followed in the installation of this product.
- Shielded, twisted-pair wiring should be used for best performance.
- Shields may be terminated at the module terminal strip.
- In severe applications, shields should be tied directly to the ground block within the panel.
- Use the following wire type or equivalent: Belden 8441.

For detailed installation and a [handy checklist](#) that covers panel box layout requirements and minimum clearances, refer to the hardware manual of the controller you are using.

When found on the product, the following symbols specify:



Warning: Electrical Shock Hazard.



Warning: Consult user documentation.

16 Technical support

Technical Support at the following locations:

North America:

Tel: 317 916-4274

Fax: 317 639-4279

Web: www.hornerautomation.com

Email: techspt@heapg.com

Europe:

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