

## 8 Channels IM Module

With configurable 16-bits analog inputs

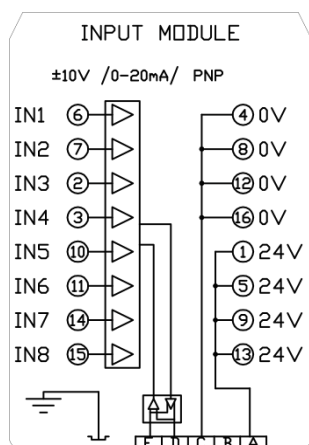
The IM module is designed to add analog signals in TFX data acquisition chain. Inputs are configurable in order to accept different signals :

- $\pm 10V$
- 0-20mA
- PNP

Max sampling rate : 100Hz

(8 channels measured each 10ms)

Pin allocation - as described on module's sticker



Input channels are grouped by two on four removable connectors. Ground is connected to DIN rail.

### Input mode configuration

- Remove internal jumpers for  $\pm 10V$  uniquely
- Plug signal inputs
- Calibrate inputs with aDDa-V software

### Electrical specifications

Name	Description	Min	Typ.	Max	Unit
V <sub>CC</sub>	Power supply	21.6	24	26.4	V <sub>DC</sub>
I <sub>IN</sub>	Current		25		mA
-	protected from inverted polarities				

### Communication

RS-485, half duplex, with proprietary protocol

Name	Description	Min	Typ.	Max	Unit
B <sub>RATE</sub>	Transfer rate		38 400		bps
Address	Local address	0x10	0x18	0xEF	

### Main Pinning

Pin	Name	Description
1,5,9,13	24V	Positive power
4,8,12,16	0V	Reference potential
6,7,2,3,10,11,14,15	IN1..8	Voltage or current inputs

For 0.2 - 2.5 mm<sup>2</sup> wires (AWG 24 - 12)

### Bus Pinning

Pin	Name	Description
A	24V	Positive power
B	nc	Not used
C	0V	Reference potential
D	D-	RS485 Differential communication, negative polarity
E	D+	RS485 Differential communication, positive polarity
Shield	Ground	Through DIN Rail

## Input Specifications

### PNP mode

Name	Description	Min	Typ	Max	Unit
$R_{IN}$	Input Impedance		56		k $\Omega$
$F_{SAMPLE}$	Sampling frequency		125		Hz
$V_{IN}$	Analog input mode	0		30	V
$V_{HIGH}$	Voltage detection level		4		V

### Analog $\pm 10V$

Name	Description	Min	Typ	Max	Unit
$R_{IN}$	Input Impedance		56		k $\Omega$
Step	Resolution		16		bits
Noise	Measurement noise, peak to peak		4		mV
$F_{SAMPLE}$	Sampling frequency		125		Hz
$V_{IN}$	Analog input mode	-30		30	V
$V_{SAT}$	Saturation value		$\pm 12.8$		V

### Analog 0-20mA

Name	Description	Min	Typ	Max	Unit
$R_{IN}$	Input Impedance		220		$\Omega$
Step	Resolution		16		bits
Noise	Measurement noise, peak to peak		8		mA
$F_{SAMPLE}$	Sampling frequency		125		Hz
$I_{IN}$	Analog input mode	-58		58	mA
$I_{SAT}$	Saturation value		$\pm 30$		mA

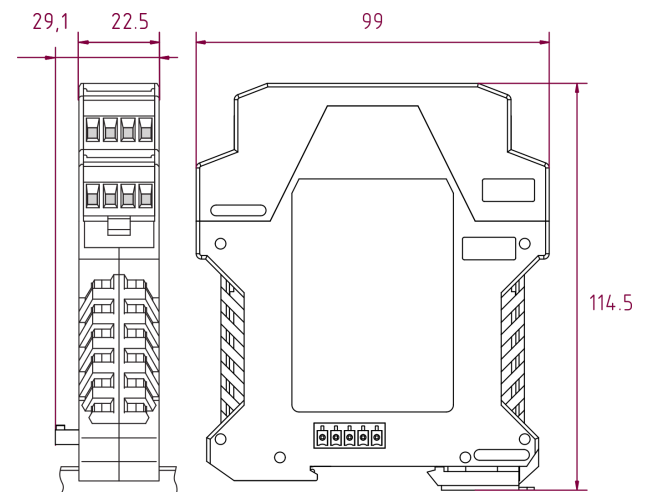
## Offset and gain settings

Analog inputs are internally converted in user's unit by applying an offset and a gain on the signal:

$$Input\ Signal = (Signal\ (V\ or\ mA) + Offset) \times Gain$$

Input calibration can be performed with the calibration assistant on aDDa-V software.

## Module size



## Package Content

- 1 IM module
- 4 - 4 pins Phoenix Contact MSTBT 2,5/4 plugs

## Accessories

- Replacement plug
- Cap plug for bus connector

## Product code

Code	Description
218.IM	Analog Module