

8 Channels IM Module

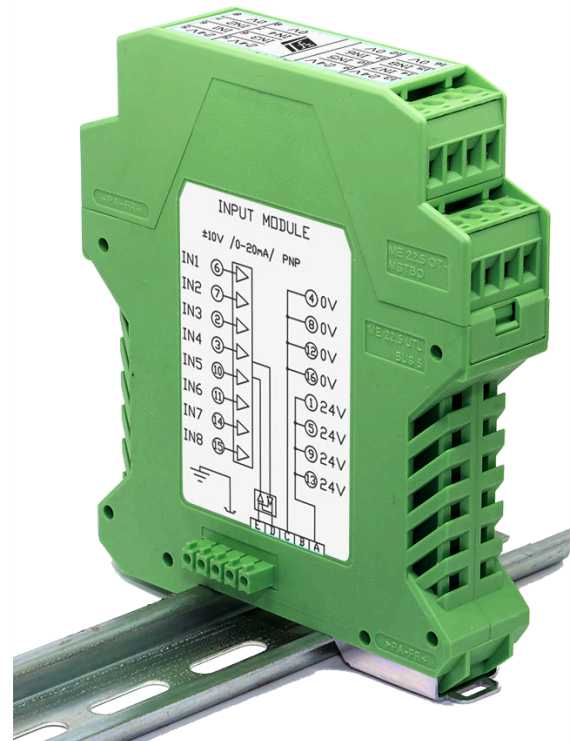
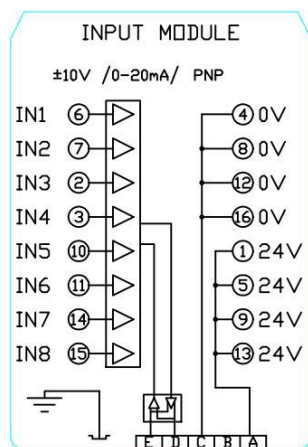
With configurable 16-bits analog inputs

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 _{CC} | Power supply | 21.6 | 24 | 26.4 | V _{DC} |
| I _{IN} | Current | | 25 | | mA |
| - | protected from inverted polarities | | | | |

Communication

RS-485, half duplex, with proprietary protocol

| Name | Description | Min | Typ. | Max | Unit |
|-------------------|---------------|------|--------|------|------|
| B _{RATE} | 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 mm² 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 Ω |
| 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 Ω |
| Step | Resolution | | 16 | | bits |
| Noise | Measurement noise, peak to peak | | TBD | | mV |
| F_{SAMPLE} | Sampling frequency | | 125 | | Hz |
| V_{IN} | Analog input mode | -30 | | 30 | V |
| V_{SAT} | Saturation value | | ± 12.8 | | V |

Analog 0-20mA

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

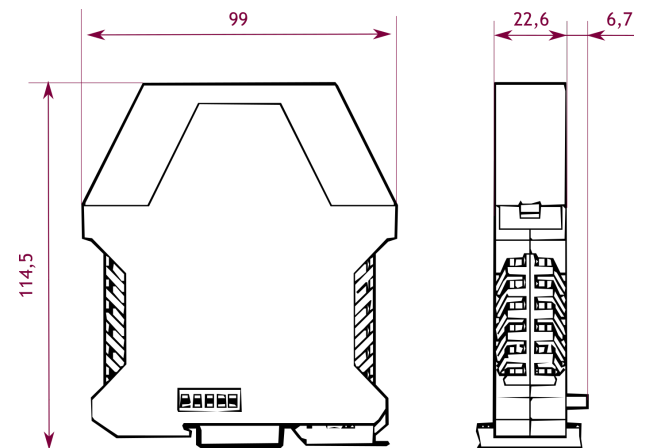
Offset and gain settings

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 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 |