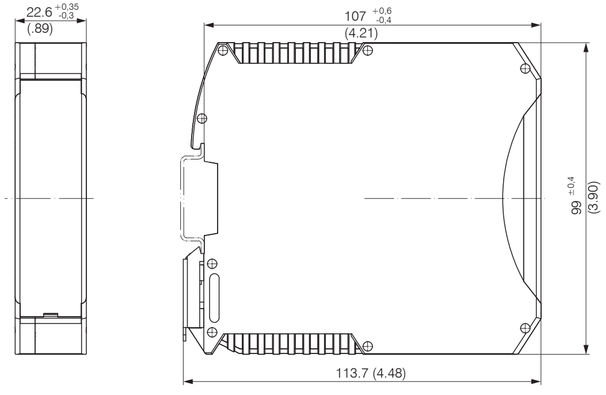
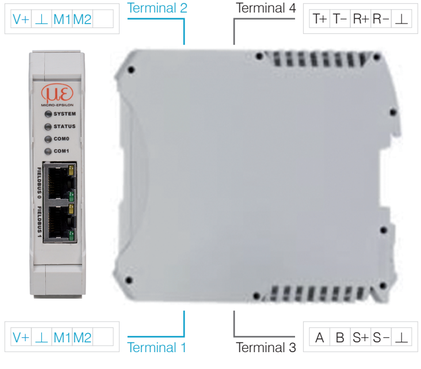
Installation and Assembly

i Ensure careful handling during installation and operation.



Pin Assignment



Terminal 2	
V+	Supply voltage [2]
⊥	Ground for supply voltage
M1	Multifunction input 1
M2	Multifunction input 2
Terminal 1 connections daisy-chained	

Terminal 4	
T+	RS422 Tx+
T-	RS422 Tx-
R+	RS422 Rx+
R-	RS422 Rx-
⊥	Ground [1] e.g., for RS422 shield connection

Terminal 1	
V+	Supply voltage
⊥	Ground for supply voltage
M1	Multifunction input 1
M2	Multifunction input 2
Terminal 2 connections daisy-chained	

Terminal 3	
A	RS485 A
B	RS485 B
S+	Synchronization output +
S-	Synchronization output -
⊥	Ground [1] e.g., for RS485 shield connection

1) Internally connected to supply ground

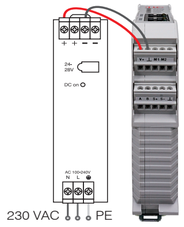
2) If the distance between IF2030/PNET and the sensor/controller is long, a separate supply for the sensor/controller may be advisable.

Supply Voltage

The supply voltage is daisy-chained from the supply port (terminal 1) to the sensor port (terminal 2), i.e., the supply voltage must match that of the sensor. Positive voltage must be between 9 V and 36 V.

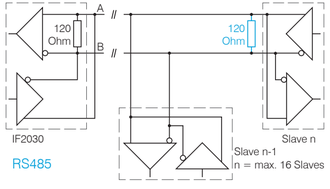
➡ Connect the inputs V+ and ⊥ on terminal 1 to a voltage supply. Maximum cable length 3 m.

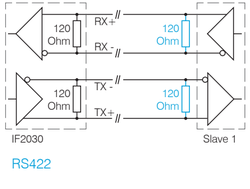
MICRO-EPSILON recommends using the optionally available power supply PS2020.



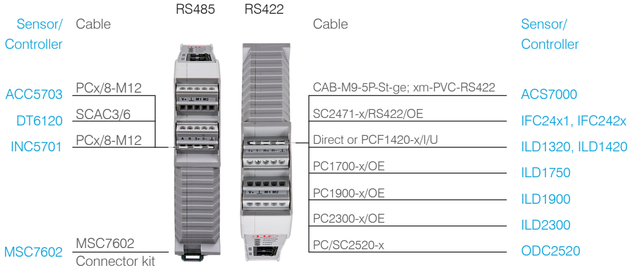
Cable Termination at Interface

i Ensure correct cable termination for an RS485 bus or RS422 bus! The IF2030/PNET works as a master for both interfaces; internally, a 120 Ohm terminating resistor has already been permanently incorporated. The IF2030/PNET should be at the bus start.





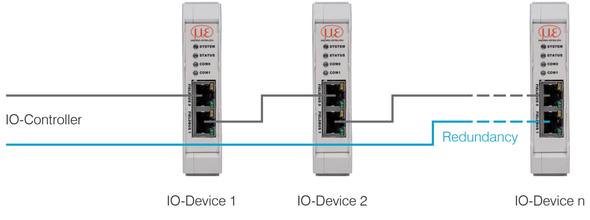
Connection Options



The length of the cable between IF2030/PNET and sensor/controller is 10 m at most. Because of the PCx/8-M12 cable, the sensor supply for ACC5703 and INC5701 sensors is possible only via the IF2030/PNET.

Standard Cabeling

During cabling, channel 0 of the IO controller is connected to the input port of the first IO device (slave device). The output port of the first slave device is connected to the input port of the next slave device, etc. The output port of the last slave device and channel 1 of the master device remain unused.



You achieve greater failsafe network performance if you implement an additional redundant connection (MRP = Media Redundancy Protocol) between the output port of the last slave device and channel 1 of the IO controller. IF2030 can participate in an MRP ring as a client; however, it cannot manage the ring. To achieve ring functionality, all participants must be configured as ring participants.

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MICRO-EPSILON

Assembly Instructions IF2030/PNET

Intended Use

The IF2030/PNET interface module is designed for use in industrial and laboratory applications. It is used to convert the internal MICRO-EPSILON sensor protocol (RS485, RS422) to Profinet.

The interface module must only be operated within the limits specified in the technical data. The interface module must be used in such a way that no persons are endangered or machines and other material goods are damaged in the event of malfunction or total failure of the sensor/controller. Take additional precautions for safety and damage prevention in case of safety-related applications.

Warnings

Connect the power supply and the display/output device according to the safety regulations for electrical equipment.
> Risk of injury
> Damage to or destruction of the interface module

The supply voltage must not exceed the specified limits.
> Damage to or destruction of the interface module

Avoid shocks and impacts to the interface module.
> Damage to or destruction of the interface module

Proper Environment

Protection class:	IP 20
Operating temperature:	0 ... +50 °C (+32 ... 122 °F)
Storage temperature:	-20 ... +70 °C (-4 ... +158 °F)
Humidity:	5 - 95% (non-condensing)
Ambient pressure:	Atmospheric pressure

Configuring the Sensor Interface

Only sensors (controllers) that support the ME sensor protocol can be connected via RS485/RS422.

Micro-Epsilon recommends selecting the corresponding sensor interface via the web interface of the sensor (controller).

Baud Rate

There is no automatic baud rate matching between IF2030/PNET and the connected sensor (controller). MICRO-EPSILON recommends selecting the corresponding baud rate via the web interface of the sensor (controller).

Data Format

All configuration parameters and data are transmitted in Little Endian format.

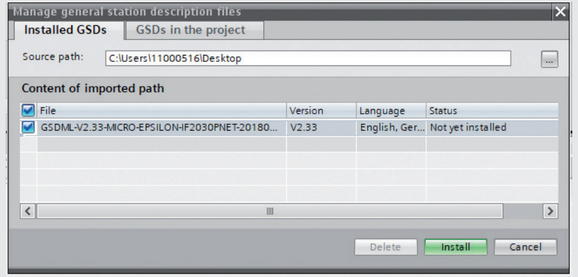
Sensors/controllers with RS485: cyclical data are transmitted via the fieldbus without change, i.e., as a binary block as described and supplied by the sensor.

Sensors/controllers with RS422: cyclical data are decoded, i.e., a 4th byte is added to the 3 bytes and then transmitted.

Integration into TIA Portal

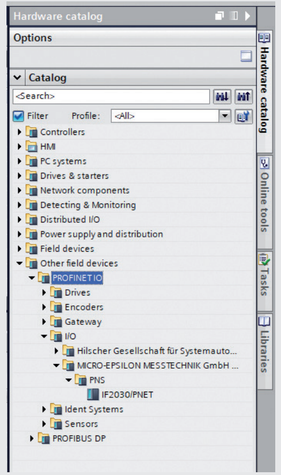
The GSDML file contains information about a PROFINET device. This file is needed for the PROFINET controller and must be integrated into the corresponding configuration software.

- Import the GSDML file. To do so, in the `Extras > Manage device description files (DDF)` menu, select the path for the file `<GSDML-Vx-MICRO-EPSILON-IF2030.xml>`.
- Click the `Install` button.

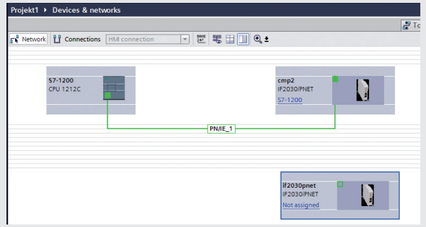


Add IF2030/PNET to the project.

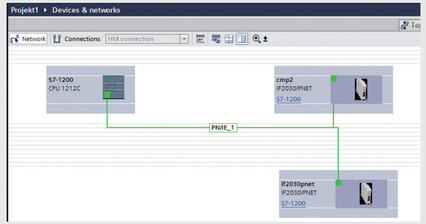
- Switch to the hardware catalog tab.
- n the More menu, select `Field devices > PROFINET IO > I/O > MICRO-EPSILON MESSTECHNIK GmbH > PNS > IF2030/PNET`.



- Drag `IF2030/PNET` into the project.



- Connect the green PN port in the device diagram to the PN network or to the PN connection of the SPS.



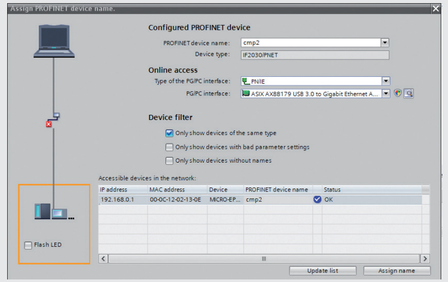
- Enter the device name for identification in the PN network.

Add modules to the device.

- Double-click the device.
- In the hardware catalog at right, first select the matching input module (the module is determined by the component and must match the one selected in TIA); drag it to the first free slot in the device overview.
- In the hardware catalog, select the base module `Basic settings` and drag it to the next free slot in the device overview.

Assign a name to the device.

- Right-click the device and select `Assign device name`.



Configure `Online access`.

- Click the `Update list` button.
- Select the device from the list.
- Click the `Assign name` button.