



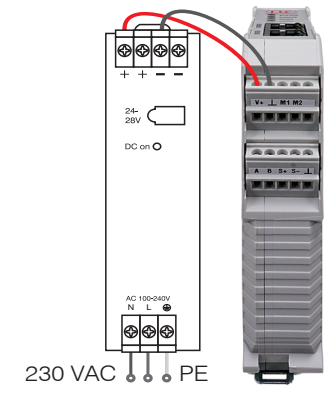
| Sensor/ Controller | Cable |
|--------------------|-------|
| C-Box Analog       |       |
| IFD242x, IFD246x   |       |
| ILD1x20            |       |
| ILD1750            |       |
| ILD19x0            |       |
| ILD2300            |       |
| ILR2250            |       |
| IMS54xx, IMS56xx   |       |
| MFA-7/14/21/28     |       |
| ODC2520            |       |

| RS485                   | RS422 |
|-------------------------|-------|
| Direct                  |       |
| SC2471-x/RS422/OE       |       |
| Direct or PCF1420-x/I/U |       |
| PC1700-x/OE             |       |
| PC1900-x/OE             |       |
| PC2300-x/OE             |       |
| PC2250-x                |       |
| SC2471-x/RS422/OE       |       |
| CAB-M12-8P-St-ge        |       |
| PC/SC2520-x             |       |



### Connection Options

| Sensor/ Controller | Cable      |
|--------------------|------------|
| DT6120             | SCAC3/6    |
| INC5701            | PCx/8-M12  |
| MSC7xxx            | PC7400-6/4 |
| DTD                | PC5/5-IWT  |



### Supply Voltage

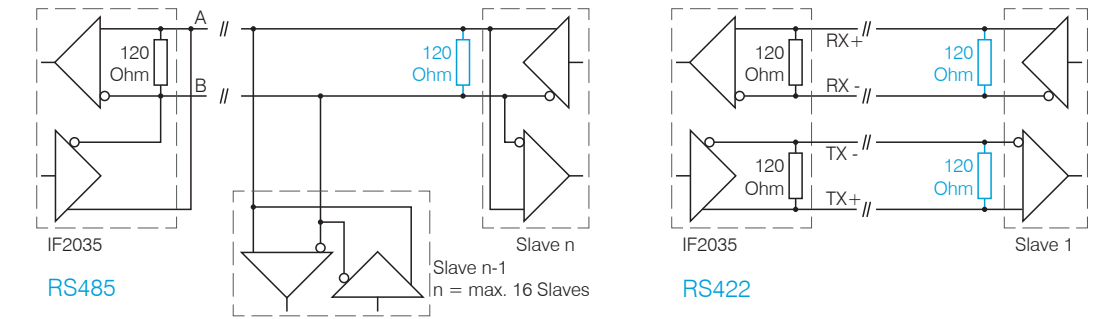
The supply voltage is daisy-chained from the supply port (terminal 1) to the sensor port (terminal 2), i.e., the supply voltage must match that of the sensor. Positive voltage must be between 9 V and 36 V.

➔ Connect the inputs  $V+$  and  $\perp$  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

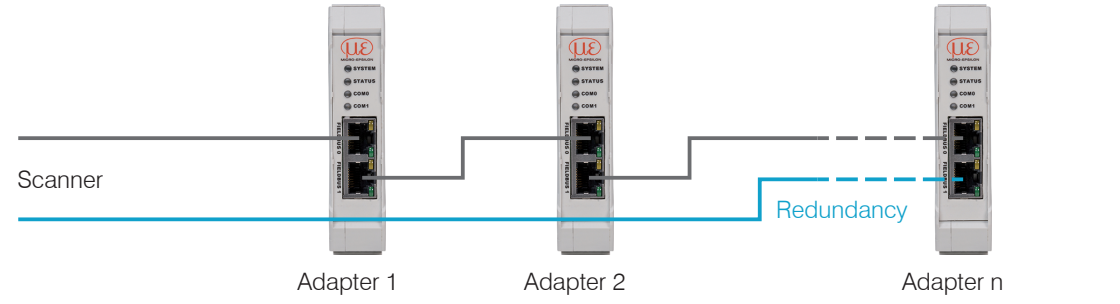
Ensure correct cable termination for an RS485 bus or RS422 bus! The IF2035-PROFINET works as a master for both interfaces; internally, a 120 Ohm terminating resistor has already been permanently incorporated. The IF2035-PROFINET should be at the bus start.



The length of the cable between IF2035-PROFINET and sensor/controller is 10 m at most. Because of the PCx/8-M12 cable, the sensor supply for INC5701 sensors is possible only via the IF2035-PROFINET.

### 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.

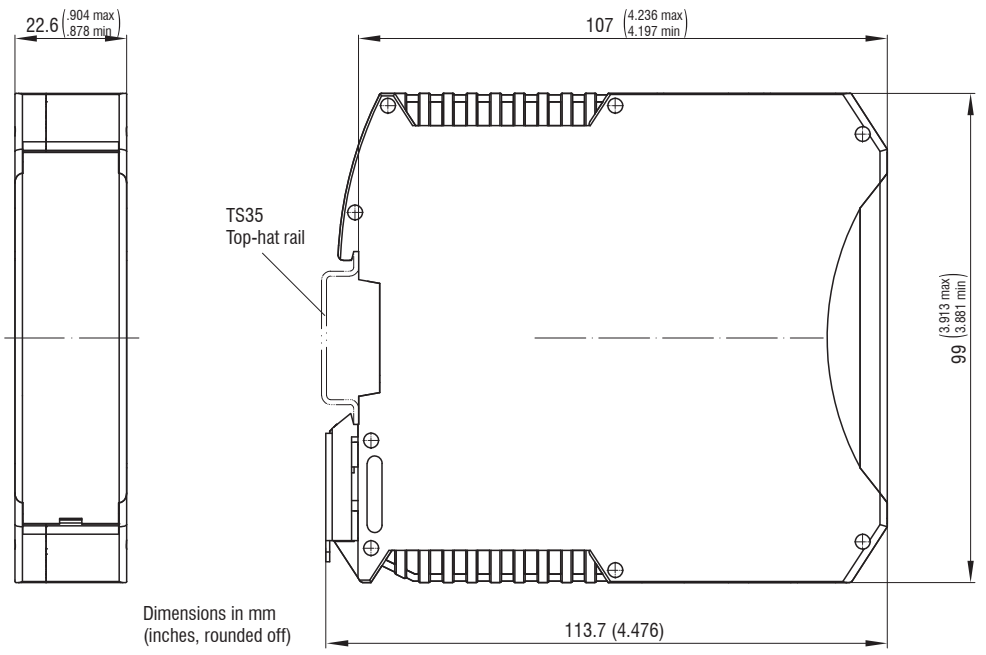
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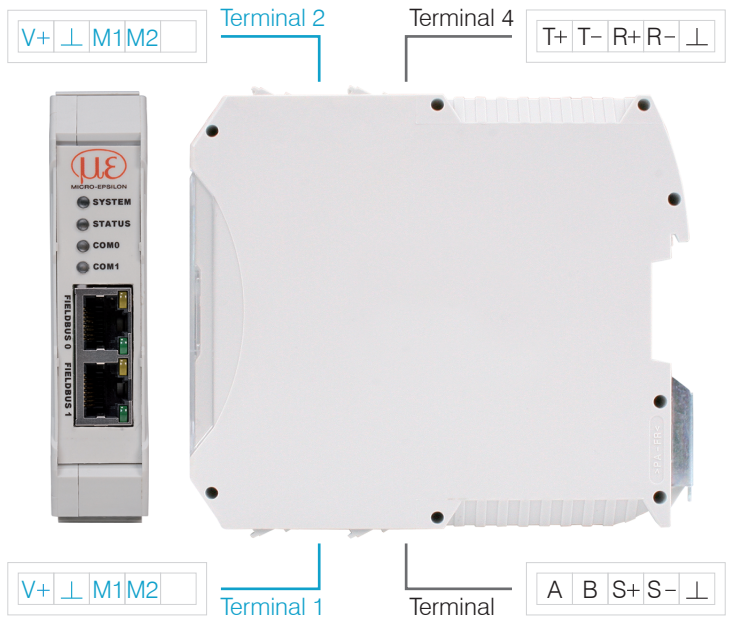


### Installation and Assembly

Ensure careful handling during installation and operation.



### Pin Assignment



| Terminal 2                           |                             |
|--------------------------------------|-----------------------------|
| V+                                   | Supply voltage <sup>1</sup> |
| $\perp$                              | Ground for supply voltage   |
| M1                                   | Multifunction input 1       |
| M2                                   | Multifunction input 2       |
| Terminal 1 connections daisy-chained |                             |

| Terminal 1                           |                             |
|--------------------------------------|-----------------------------|
| V+                                   | Supply voltage <sup>1</sup> |
| $\perp$                              | Ground for supply voltage   |
| M1                                   | Multifunction input 1       |
| M2                                   | Multifunction input 2       |
| Terminal 2 connections daisy-chained |                             |

1) If the distance between IF2035-PROFINET and the sensor/controller is long, a separate supply for the sensor/controller may be advisable.

| Terminal 4 |   |
|------------|---|
| T+         | RS422 Tx+   |
| T-         | RS422 Tx-   |
| R+         | RS422 Rx+   |
| R-         | RS422 Rx-   |
| $\perp$    | Ground <sup>2</sup> e.g., for RS422 shield connection |

| Terminal 3 |   |
|------------|---|
| A          | RS485 A   |
| B          | RS485 B   |
| S+         | Synchronization output +                              |
| S-         | Synchronization output -                              |
| $\perp$    | Ground <sup>2</sup> e.g., for RS485 shield connection |

2) Internally connected to supply ground

## Quick Guide

### GSDML File

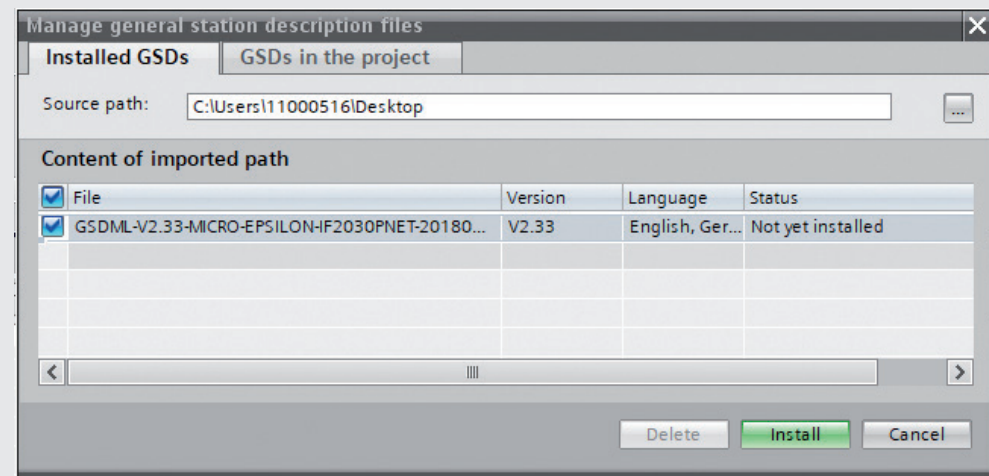
The GSDML file contains information about a PROFINET device. This file is needed for the PROFINET controller and must be integrated into the corresponding configuration software.

The current version is available at:

<https://www.micro-epsilon.de/download/software/IF2035-GSDML-XML.zip>

➔ Import the GSDML file. To do so, in the Extras > Manage device description files (DDF) menu, select the path for the file <GSDML-V2.43-MICRO-EPSILON-IF-2035PNET-xxx.xml>.

➔ Click the Install button.



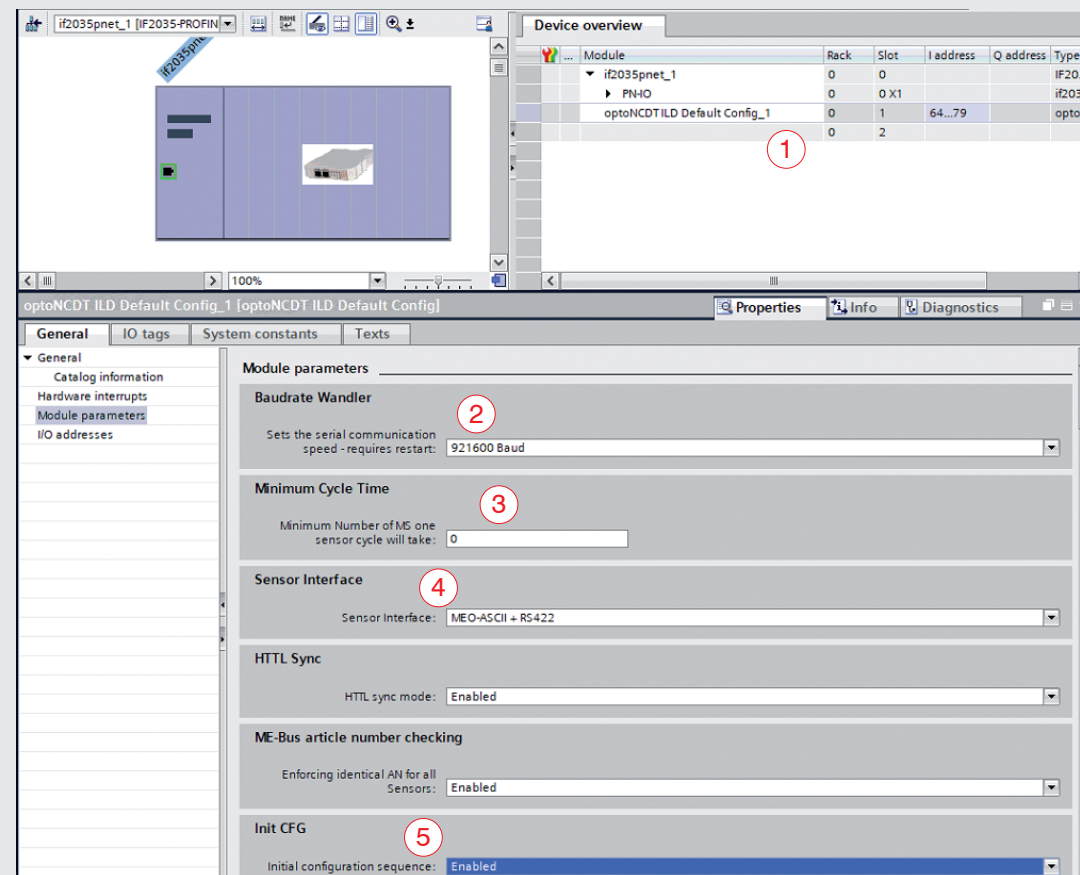
### IP Address, Network Name

The IF2035-PROFINET has no IP address and no network name by default. These settings must be made in the PLC programming environment (e.g. TIA Portal or PRONETA).

In program examples the parameters baud rate, input width, sensor interface, minimum cycle time are set appropriately. The current version is available at:

<https://www.micro-epsilon.de/download/software/IF203x-PNET-standard-example-library.zip>

## Example: Configuring the Sensor Interface



Module integration with the TIA Portal software

### Parameter Section/Description

- 1 Number of data bytes, see Data Format section
- 2 Baud rate
- 3 Minimum cycle time, see Data Format section
- 4 Sensor interface, see Configuring the Sensor Interface section
- 5 Init CFG, see IP Address section, network name

**i** Please note the instructions for applying a project, see the *Completion, Applying a Project* section.

## Configuring the Sensor Interface

Only sensors (controllers) that support the ME sensor protocol can be connected via RS485/RS422, see Connection Options section.

| Protocol                      | Sensor/controller   |
|-------------------------------|---|
| 0: ME-Bus + RS485             | DT6120<br>INC5701<br>MSC7401/MSC7x02/DTD  |
| 2: MEO-ASCII + RS422          | C-Box analog<br>IFD242x/IFD246x<br>ILD1220/ILD1320/ILD1420/ ILD1750/ILD1900/ILD2300<br>IMS54xx/IMS56xx<br>MFA-7/14/21/28<br>ODC2250 |
| 3: MEO-ASCII + RS422 - 32 bit | ILR2250, IMC5xx0  |

### Baud Rate

The baud rate at the sensor/controller and in the hardware configuration of the IF2035-PROFINET must match. There is no automatic baud rate matching between IF2035-EtherCAT and the connected sensor (controller). Details about the default baud rate can be found in the individual operating instructions of the respective sensor/controller.

### Data Format

All configuration parameters and data are transmitted from the IF2035 in Little Endian format. The IF2035 converts a sensor-specific protocol into a uniform 4-byte data format.

| No. of data bytes | Sensor/controller                                | Minimum Cycle Time |
|-------------------|--|--------------------|
| 16 byte           | DT6120   | 0                  |
|                   | ILD1220/ILD1320/ILD1420/ ILD1750/ILD1900/ILD2300 | 0                  |
|                   | ILR2250  | 50 ms              |
|                   | IMC5xx0  | 0                  |
|                   | MSC7401/DTD                                      | 2 ms               |
| 32 byte           | ODC2520  | 0                  |
|                   | C-Box analog                                     | 0                  |
|                   | MSC7x02  | 2 ms               |
|                   | INC5701  | 0                  |
|                   | IFC242x  | 0                  |

## Completion, Transferring a Project

After setting all parameters, the configuration must be transferred once to the module via the Initial configuration sequence.

Proceed as follows:

➔ Set the Init CFG (5) to Enabled.

➔ Transfer the project to the controller and the IF2035-PROFINET

➔ Set the Init CFG (5) to Disabled.