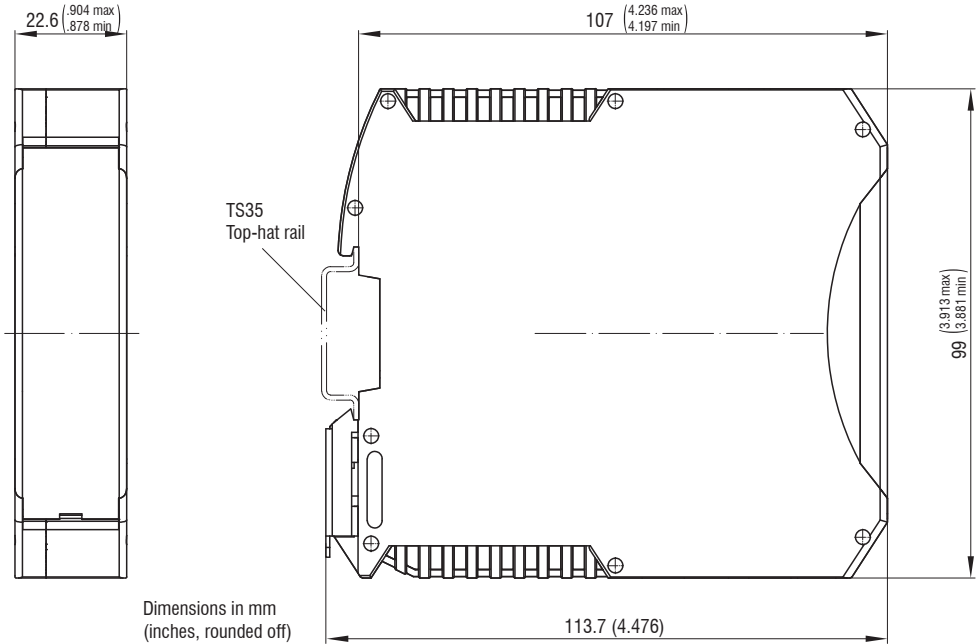
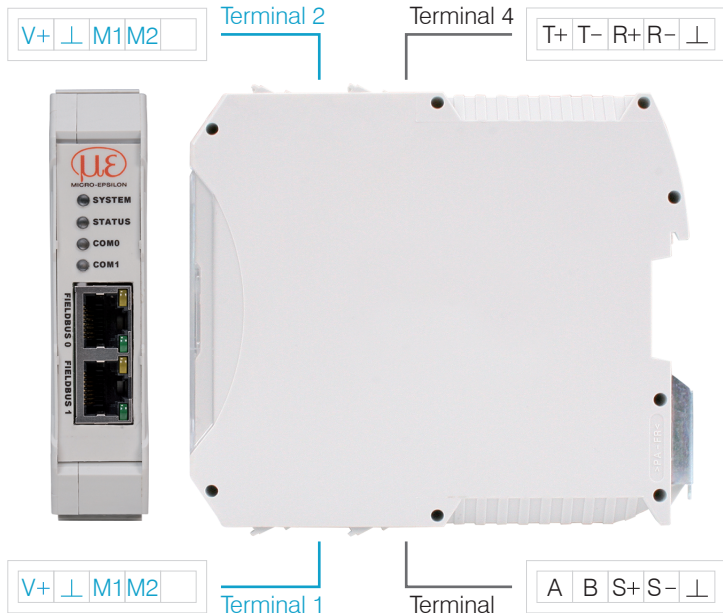


## Installation and Assembly

Ensure careful handling during installation and operation.



## Pin Assignment



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

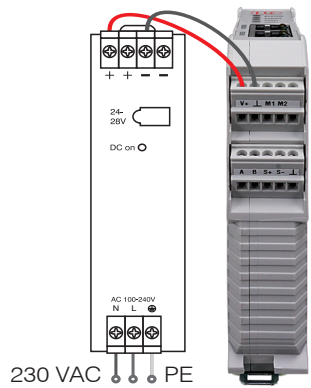
1) If the distance between IF2035-PROFINET and the sensor/controller is long, a separate supply for the sensor/controller may be advisable.

## 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.

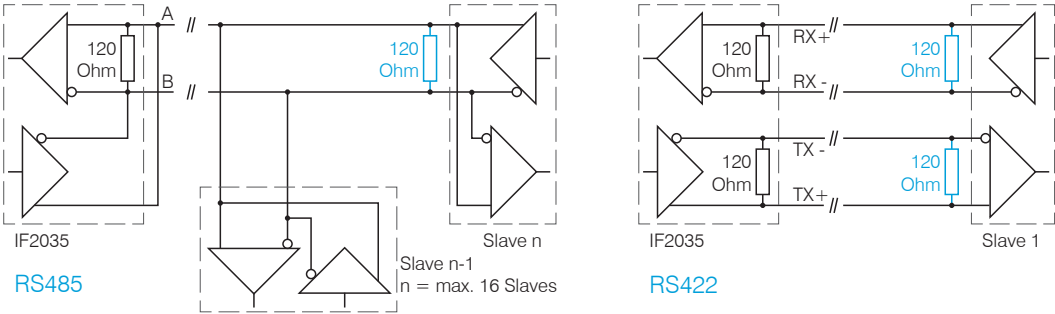
➡ Connect the inputs V+ and ⊥ on terminal 1 to a voltage supply. Maximum cable length 3 m.

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



## Cable Termination at Interface

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.

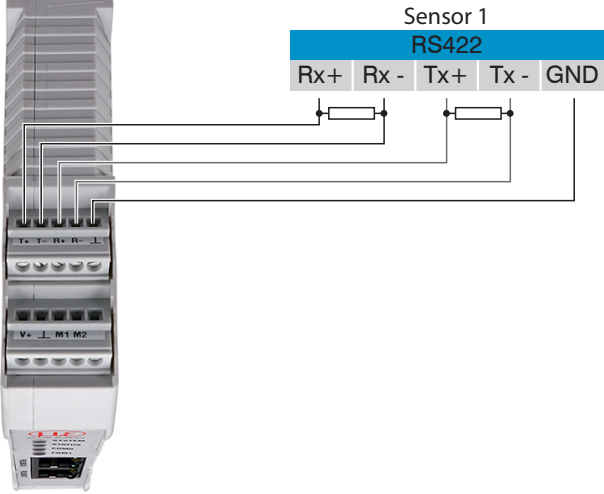


## Maximum number of sensors/controllers

The IF2035 only supports a limited number of sensors/controllers.

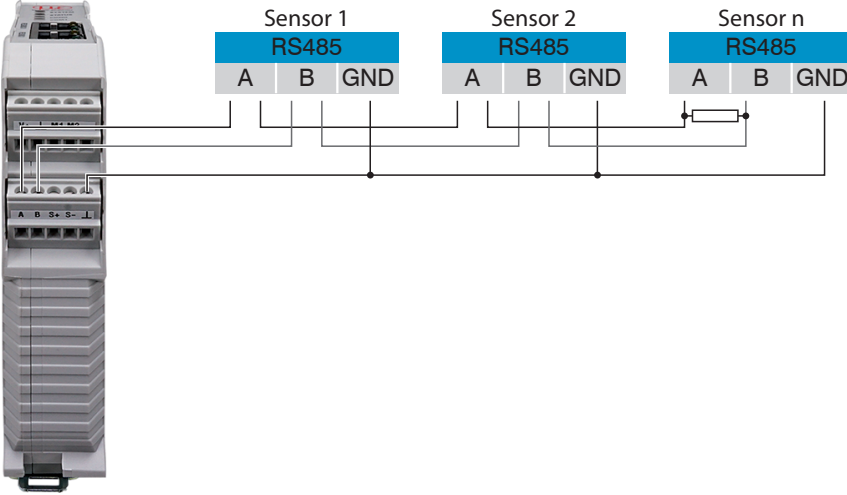
## Sensors/controllers with RS422

The IF2035 supports a sensor or controller with RS422, full duplex.



## Sensors/controllers with RS485

The IF2035 supports up to 32 sensors or controllers with RS485, half-duplex.



The more sensors/controllers are connected to an IF2035, the lower the actual polling rate of the output values of a single sensor/controller to the PLC.

## RS485 Address Setting

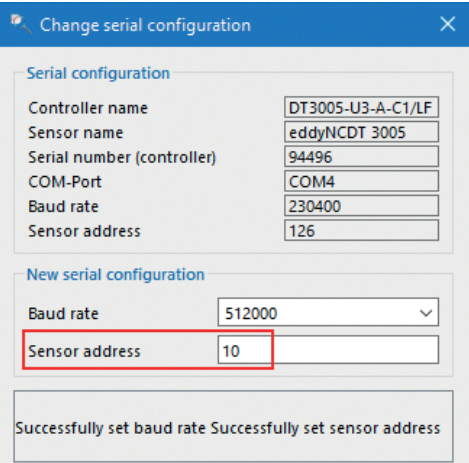
The IF2035 supports up to 32 connected sensors/controllers. The individual addresses of the sensors/controllers must be assigned before they are connected to the IF2035. Each address may only be assigned once.

Valid addresses are addresses 1 to 126 inclusive.

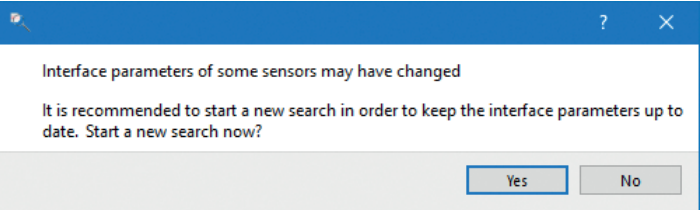
sensorTOOL is a documented PC software package with which you can adjust a sensor/controller as well as visualize and document measurement data.

You can find this program online at <https://www.micro-epsilon.com/download/software/sensorTOOL.exe>.

To set an address, enter the desired address in the Sensor address field and then confirm by clicking on the Apply button.



If the Change serial configuration window is then closed, the following message appears:



## Intended Use

The IF2035-PROFINET 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



## Setup Guide IF2035-PROFINET

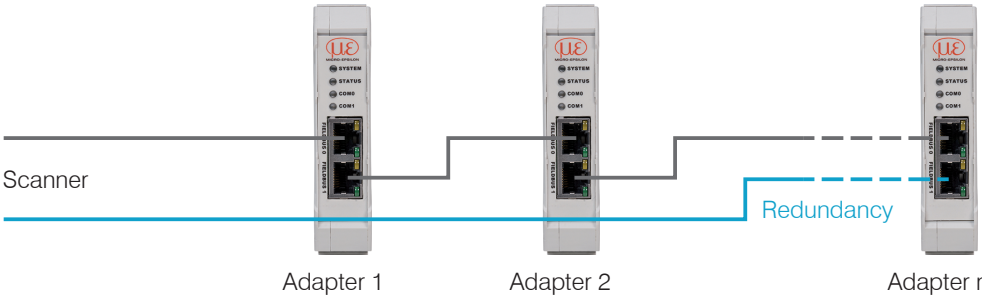
Connection Options

Sensor/ Controller	Cable	RS485	RS422	Cable	Sensor/ Controller
ACC5703	PCx/8-M12			SC2471-x/RS422/OE	IFD242x, IFD246x
DT3005	PCx/5-M12			Direct or PCF1420-x/I/U	ILD1x20
DT3020	PCx/8-M12			PC1700-x/OE	ILD1750
DT6120	SCAC3/6			PC1900-x/OE	ILD19x0
INC5701	PCx/8-M12			PC2300-x/OE	ILD2300
MSC7xxx	PC7400-6/4			PC2250-x	ILR2250
DTD	PC5/5-IWT			SC2471-x/RS422/OE	IMS54xx, IMS56xx
				SC2471-x/RS422/OE	IMS5200, IMS5420
				CAB-M12-8P-St-ge	MFA-7/14/21/28
				PC/SC2520-x	ODC2520
				PC/SC2700-x	ODC2700

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.

Quick Guide

GSDML File

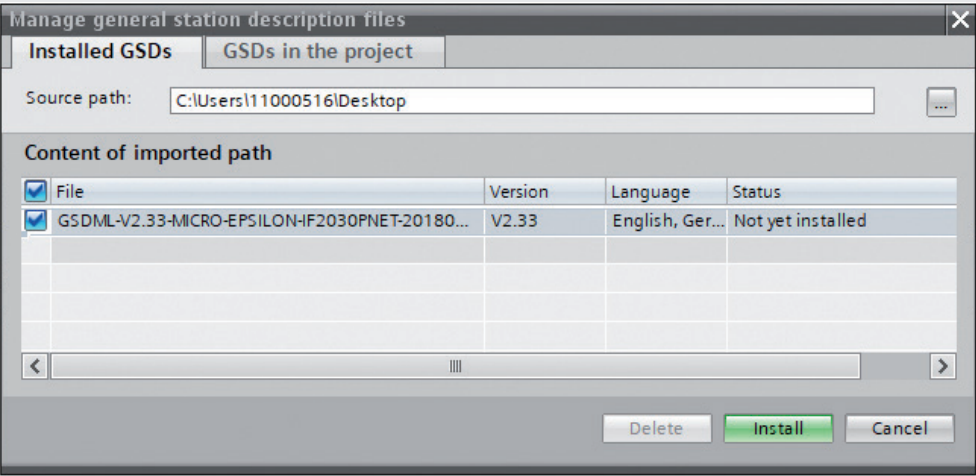
The GSDML file contains information about a PROFINET device. This file is needed for the PROFINET controller and must be integrated into the corresponding configuration software.

The current version is available at:

<https://www.micro-epsilon.com/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.



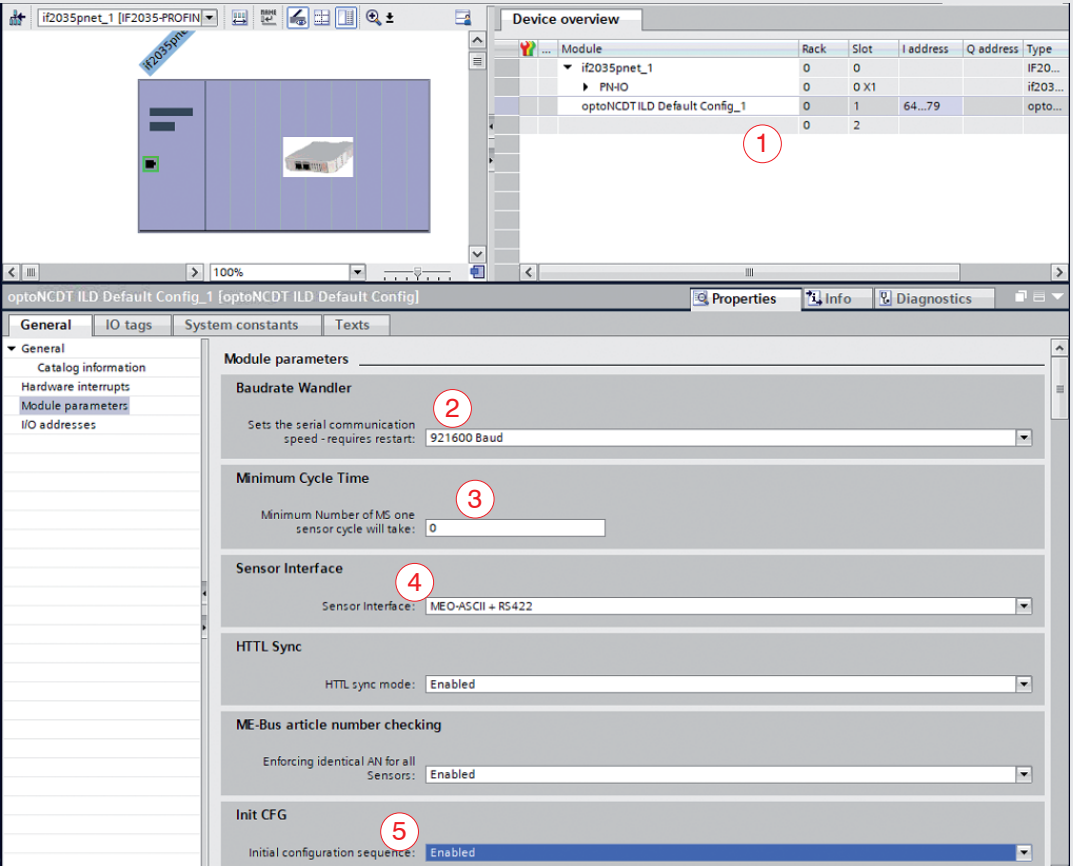
IP Address, Network Name

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.com/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 INC5701 MSC7401/MSC7x02/DTD
2: MEO-ASCII + RS422	IFD242x/IFD246x ILD1220/ILD1320/ILD1420/ ILD1750/ILD1900/ILD2300 IMS54xx/IMS56xx MFA-7/14/21/28 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	4 ms
	ODC2520	0
32 Byte	MSC7x02	10 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.

You can find more information about the sensor in the operating instructions.

They are available online at:

<https://www.micro-epsilon.com/download-file/man--IF2035-PROFINET--en.pdf>

