

CDF600-2201 Fieldbus module



Module for integrating a SICK identification sensor into PROFINET IO networks

SICK
Sensor Intelligence.



Correct use

The CDF600-2201 fieldbus module is used exclusively to integrate a single identification sensor as an IO device in PROFINET IO networks. It provides a dual port switch for the fieldbus for the assembly of a line topology, for example. The electrical connections for the power supply and PROFINET IO are designed as AIDA-compliant push-pull plug connectors (AIDA = Automation Initiative of German Automobile Manufacturers).

In terms of data technology, the fieldbus module and identification sensor (referred to as the ID sensor below) represent an IO device (field device) on the bus; they communicate with one another via a serial data interface (RS-232). One fieldbus module is required for each ID sensor on the PROFINET IO network.

The fieldbus module currently supports the following ID sensors:

In proxy mode:

- CLV61x FIELDBUS bar code scanner as well as CLV62x to CLV65x (other ID sensors on request)

In gateway mode:

- Other SICK ID sensors that do not yet support proxy mode, e.g., CLV69x bar code scanners, LECTOR®62x

and LECTOR®65x image-based code readers, as well as RFH62x, RFH63x (HF) and RFU62x, RFU63x (UHF) RFID interrogators.

- SICK IDM1xx and IDM2xx hand-held scanners.
- Any sensors with RS-232 interface and suitable data format and data transmission rate.

The fieldbus module can be used at an ambient temperature range of -35 °C to $+50\text{ °C}$.

Correct use also includes compliance with all information in these operating instructions and the supplementary [CDF600-220x Fieldbus Module Technical Information](#) (no. 8015924).

About this document

These operating instructions will help you to assemble a CDF600-2201 fieldbus module in the ambient temperature range from 0 °C to $+50\text{ °C}$ quickly and easily and establish an electrical connection between it and the ID sensor, fieldbus and local trigger sensor (if there is one). The operating mode of the fieldbus module is set via its mechanical control element.

The CDF600-2201 fieldbus module is referred to in the following sections simply as “fieldbus module”.

Supplementary and other applicable documents

More detailed information about the electrical installation and configuration of the fieldbus module is available in the [CDF600-220x Fieldbus Module Technical Information](#) (no. 8015924). This document describes:

- The suppression of ground potential equalization currents in applications with widely distributed systems
- The use of the fieldbus module together with a heatable ID sensor that supports proxy mode in the deep-freeze range up to -35 °C
- The integration of the fieldbus module in the IO controller
- Proxy mode: The procedure for configuring the fieldbus module with the SOPAS ET configuration software of the ID sensor supporting proxy mode or through the IO controller with the help of modules from the GSDML file
- Gateway mode: The connection and configuration of the hand-held scanner by means of controlled scanning of the corresponding bar code

Information about PROFINET IO-related configuration is also available in the SOPAS ET configuration software's online help function for the relevant proxy ID sensor.

The CDF600-220x Fieldbus Module Technical Information is available as a PDF on the product site of the fieldbus module on the web: www.sick.com/CDF600-2.

PDF visualizing software such as Adobe Reader is required to view documents in PDF format on a PC (get.adobe.com/reader).

Safety information

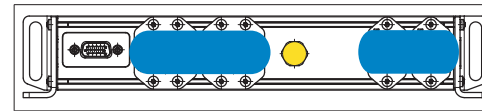
- This chapter is dedicated to the safety of commissioning personnel and personnel operating the system in which the fieldbus module is integrated.
- Read these operating instructions carefully before commis-

sioning the fieldbus module in order to familiarize yourself with the device and its physical controls and status indicators. The operating instructions are a component part of the device and must be kept in the immediate vicinity of the fieldbus module where they can be accessed at all times.

- Protect the fieldbus module from moisture and dust, when the side panel covering the USB interface and the rotary coding switch is open. In this state, the module does not conform to a specified IP enclosure rating.

To safeguard the IP 65 enclosure rating in active operation, the following requirements must be met:

- The side panel covering the USB interface and rotary encoding switch must be screwed tight to the device.
- The M12 connection (“EXT.IN 1”) is fitted with a yellow protective plug that is completely screwed-on when not in use (e.g., in delivery condition).
- Any unused AIDA connections are covered as appropriate, e.g., by snap-in protective caps no. 5327762 (“POWER”) or 5326204 (“P1 and P2 PROFINET IO”). The seal on the D-Sub HD female connector (DEVICE connection) must be present; both the screws for the D-Sub plug connector must be fastened tight.



CDF600-2201: Screwable protective plugs (yellow) and self-adhesive disposable covers (blue) as on delivery.

- Opening the fieldbus module housing that is screwed tight with the profiles will invalidate any warranty claims against SICK AG. For further warranty provisions, see the General Terms and Conditions of SICK AG, e.g., on the delivery note of the fieldbus module.
- Data integrity: SICK AG uses standardized data interfaces, such as standard IP technology, in its products. The emphasis here is on the availability of products and their features. SICK AG always assumes that the integrity and the confidentiality of the data and rights which are affected by the use of these products will be ensured by the customer. In all cases, appropriate security measures, such as network separation, firewalls, virus protection, and patch management, must be taken by the customer on the basis of the situation in question.

Commissioning and configuration

Scope of delivery

- Fieldbus module with yellow protective plugs on the M12 connection and blue, self-adhesive disposable covers on the paired AIDA connections. Without connecting cables.
- Printed operating instructions in German (no. 8016852) and English (no. 8016853). Possibly available in other languages as a PDF on the product site of the fieldbus module on the web: www.sick.com/CDF600-2.
- Possible optionally ordered accessories (cables, trigger

sensors, etc.)

- The GSDML files required for the ID sensors are available on the product site of the fieldbus module on the web

Operating principle of the fieldbus module (overview)

On PROFINET IO, the fieldbus module functions as an IO device. It can be operated by any PROFINET IO controller that conforms to the relevant standards (e.g., PLC).

The fieldbus module operates as a proxy for a SICK identification sensor from the IDpro device families. For the IO controller, only the ID sensor is visible here.

Alternatively, the fieldbus module can operate as a gateway for a sensor that is only gateway-compatible if it is outputting data and has a serial data interface (RS-232). In this case, for the IO controller, only the fieldbus module is visible.

As a proxy, the fieldbus module loads the device description for its parameters from the ID sensor on system startup. The ID sensor must be capable of supporting the fieldbus module when it is functioning as a proxy. Communication takes place via the serial AUX interface of the ID sensor (RS-232).

The fieldbus module also saves the parameter set of the ID sensor that supports proxy mode to its internal parameter memory; this makes the replacement process easier if the ID sensor should fail.

As a gateway for ID sensors that support gateway mode, the fieldbus module transmits data telegrams framed with STX and ETX. These telegrams are received at its serial data interface, that can be set to 9.6 kBd or 57.6 kBd.

The ID sensor that supports proxy mode receives external object trigger signals via the PROFINET IO or locally e.g., from a trigger sensor via the switching input of the fieldbus module.

Eight LEDs (six of which are defined as specified by the PNO) indicate the statuses of the fieldbus module, switching input, diagnosed system/bus errors as well as the PROFINET IO activity.

Step 1: Mounting

Equipment required

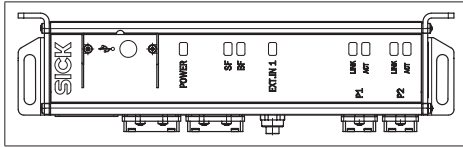
- Two cylinder head screws (M6) for mounting; screw length dependent on fixing base (wall thickness). Max. tightening torque 5 Nm + 1.

Mounting requirements

- The permissible ambient conditions for the operation of the fieldbus module must be observed (e.g., temperature, ground potential → see “Technical data”, page 5 and “Step 2: Electrical installation”, page 2).
- Shock- and vibration-free mounting
- The device must only be mounted by inserting two screws into the elongated drill holes.
- Stable mounting equipment with sufficient load-bearing capacity and appropriate dimensions for the fieldbus module. The module has been optimized for mounting on standard frame profiles. Weight 690 g (without cables).

Dimension drawing → see "Device layout", page 4.

- Required switching space across the electrical connections approx. 300 mm, access to USB interface and rotary encoding switch: approx. 400 mm.
- Clear view of the transparent panels on the rotary encoding switch and the optical indicators.
- In order to achieve electromagnetic-compatible mounting, a continuous metallic connection must be established with the housing.



1. Use the two elongated drill holes to mount the fieldbus module in the lugs of the cover or the bar on the side. Ideally, the fieldbus module should be mounted in a horizontal or vertical position, so that the writing on the rotary encoding switches reads correctly when viewed by the user.
2. Mount the ID sensor and align it with the codes/transponders to be identified as indicated in the corresponding operating instructions. The operating instructions of the relevant ID sensor are available on the corresponding product site on the web, e.g., for the CLV61x bar code scanner at www.sick.com/CLV61x.

Step 2: Electrical installation

- **Only skilled electricians with appropriate training and qualifications are permitted to perform electrical installation.**
- **Standard safety requirements must be met when working in electrical systems.**
- Electrical connections between the fieldbus module and other devices may only be made or separated when there is no power to the system. Otherwise, the devices may be damaged.
- Where connecting cables with one end open are concerned, make sure that bare wire ends are not touching (risk of short circuit when the supply voltage is switched on) Wires must be appropriately insulated from each other.
- Wire cross sections of the supply cable from the customer's power system for the fieldbus module should be designed and protected in accordance with the applicable standards. Insert a separate, external 16 A fuse at the start of the supply cable to protect the fieldbus module (and the ID sensor connected to it).
- All circuits to be connected to the fieldbus module must be designed as SELV circuits (SELV = Safety Extra Low Voltage).

a DANGER

Risk of injury and damage caused by electrical current!

The CDF600-2201 fieldbus module is designed for operation in a system with proficient grounding of all connected

devices and mounting surfaces to the same ground potential. Incorrect grounding of the fieldbus module can result in equipotential bonding currents between the fieldbus module and other grounded devices in the system. This can lead to hazardous voltages being applied to metal housing, cause devices to malfunction or sustain irreparable damage and damage the cable shield as a result of heat rise, causing cables to set alight.

- Only skilled electricians should be permitted to carry out work on the electrical system.
- Ensure that the ground potential is the same at all grounding points.
- If the cable insulation is damaged, disconnect the power supply immediately and have the damage repaired.

See [CDF600-220x Fieldbus Module Technical Information](#) (no. 8015924), available on the product site on the web (www.sick.com/CDF600-2) for suggested courses of action for eliminating hazards.

1. In order to install the desired application, wire the fieldbus module as appropriate for the ID sensor type with the help of the optional pre-assembled SICK cables as shown in the block diagram. The cables are only included as accessories in the delivery of the module if they are ordered separately. The part number varies by type for the required M12 adapter cable to D-Sub HD ("DEVICE" connection) for the ID sensor that supports proxy mode with Ethernet interface. It should, for example, be taken from the operating instructions or product information for the ID sensor on the corresponding online product page.

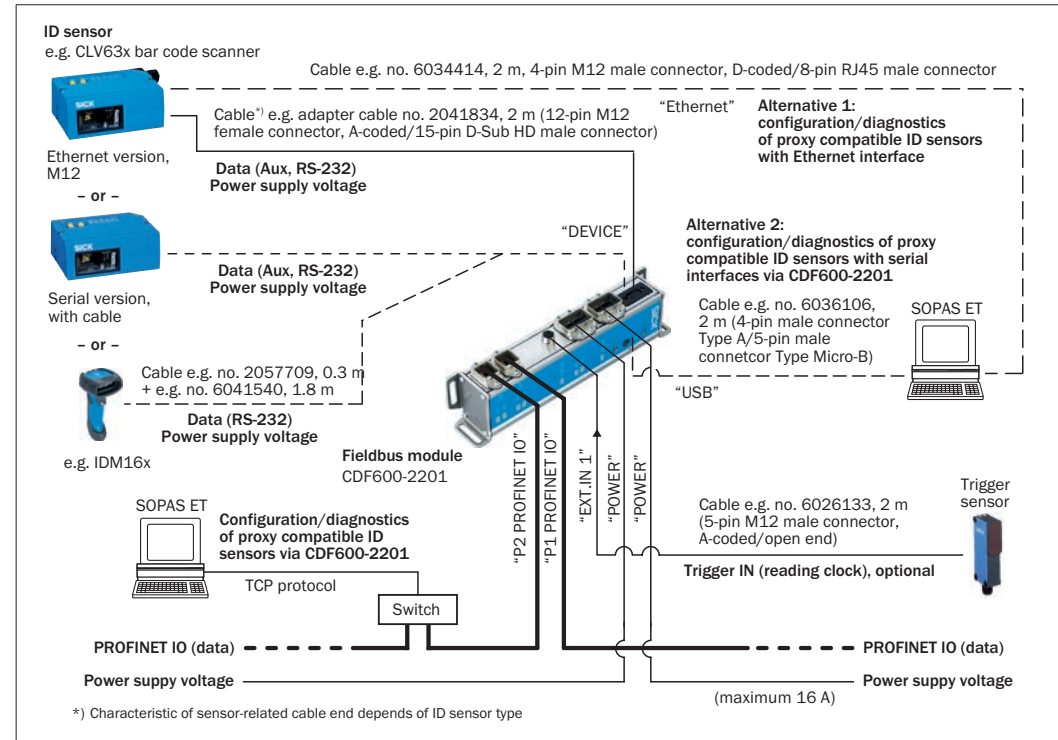
Cable types and lengths:

- Screened connection cable between fieldbus module and ID sensor that supports proxy mode < 5 m as an RS-232 interface is used between fieldbus module and ID sensor for data transmission.
2. Prepare and protect the supply voltage for the fieldbus module. The level of the supply voltage for the unit consisting of fieldbus module and ID sensor is dependent on the connected sensor, see → "CDF600-2201-relevant specifications of ID sensors", page 3. The fieldbus module provides a supply voltage range of DC 10 V to DC 30 V. The supply voltage is also applied to the connected ID sensor. The power supply and all connected signals must comply with the regulations for extra-low voltages with safe separation (SELV) according to EN 61010.

Power output of the power source:

The fieldbus module itself consumes < 5 W power (without ID sensor and trigger sensor).

The additional power consumed by the ID sensor and trigger sensor (if there is one) connected to the fieldbus module varies by type. The power output of the power supply unit must be designed for a maximum total current of 16 A for all consumers (IO devices) in the PROFINET IO segment in question.



Block diagram: CDF600-2201 fieldbus module connected to CLV6xx bar code scanner/IDM16x hand-held scanner (example)

NOTE

Risk of damage caused by electrical current!

The supply voltage at the DEVICE connection is not short-circuit-protected. If the "POWER" LED no longer lights up following a short-circuit between pin 1 and pin 5, the device must be sent to SICK Service so that its functionality can be re-established.

3. Do **not** connect the supply voltage yet.

CDF600-2201-relevant specifications of ID sensors

ID sensor	Supply voltage	Power consumption ¹⁾	Firmware version
ID sensors that support proxy mode			
CLV61x FIELDDBUS	DC 10 V ... 30 V	2.8 W, typical	V. 1.21
CLV62x	DC 10 V ... 30 V	Max. 4.5 W	V. 5.26
CLV63x Line/grid	DC 18 V ... 30 V	5 W, typical	
CLV63x Line with SwSP	DC 18 V ... 30 V	6 W, typical	
CLV64x Line/grid	DC 18 V ... 30 V	5 W, typical	
CLV64x Line with SwSP	DC 18 V ... 30 V	6.5 W, typical	
CLV65x Line	DC 18 V ... 30 V	8.5 W, typical	
CLV65x Line with SwSP	DC 18 V ... 30 V	9.5 W, typical	
CLV63x ... 65x, for heating in addition ²⁾	DC 24 V ± 10%	Electronics type-specific, see above, heating max. 30 W	
CLV69x ³⁾ line	DC 18 V ... 30 V	15 W, typical	On request ⁶⁾
CLV69x ³⁾ Line with SwSP	DC 18 V ... 30 V	17 W, typical	On request ⁶⁾
LECTOR®62x	DC 10 V ... 30 V	3 W, typical	On request ⁶⁾
RFH62x	DC 10 V ... 30 V	Max. 5 W	On request ⁶⁾
RFH63x	DC 10 V ... 30 V	Max. 8 W	On request ⁶⁾
RFU62x	DC 10 V ... 30 V ⁴⁾	8 W, typical ⁵⁾	On request ⁶⁾
RFU63x	DC 12 V ... 30 V	< 20 W, typical	On request ⁶⁾
ID sensors that support gateway mode			
IDM16x Wired	Converter DC 24 V/5 V	1.15 W, typical	-
IDM16x Bluetooth	Converter DC 24 V/5 V	3.5 W, typical	-
IDM26x Wired	Converter DC 24 V/5 V	1.68 W, typical	-
LECTOR®65x	DC 24 V ± 20%	20 W, typical	-

1) Switching output without load.
Power consumption of the fieldbus module additionally < 5 W.

2) For connection diagram see [CDF600-220x Fieldbus Module Technical Information](#) (no. 8015924).

3) No configuration options via configuration module in the GSDML file.

4) DC 20 V to 30 V when using the RFU62x-101x at ambient temperatures between -20 °C and -40 °C.

5) Additional 12 W max. between -20 °C and -40 °C.

6) Devices can, however, be connected to the fieldbus module as sensors that support gateway mode.

Line with SwSP = Line scanner with oscillating mirror

Other ID sensors on request

Step 3: Configuration

a. Overview of the configuration process

- Set operating mode of the fieldbus module using the "Mode" rotary encoding switch.
- Integrate the fieldbus module in the IO controller.
- Configure data communication in the fieldbus.
- Only ID sensors that support proxy mode:
Use the SOPAS ET configuration software to set further functions of the fieldbus module.

b. Setting the operating mode in the fieldbus module

- Open the side cover by unscrewing the two screws (⊗) (→ see "Device layout", page 4). You can now access the "Mode" rotary encoding switch.



- Set the operating mode with the rotary encoding switch.
Position 0:
Fieldbus module operates as a proxy for an ID sensor (e.g., bar code scanners from the CLV6xx product family).
Position 2 and 4:
Fieldbus module operates as a gateway for an ID sensor that supports gateway mode (e.g., hand-held scanner); data transmission rate dependent on switch setting. List of modes that can be configured → see section "Mode" rotary encoding switch (hexadecimal-coded)", page 3. The new setting is applied on the fieldbus module when the supply voltage is switched on. Changes to the settings of the rotary encoding switch after the power supply has been switched on are not applied in data communication initially; however, the "POWER" LED flashes cyclically 2 times.
To apply a change to the operating mode to the fieldbus module, restart both the fieldbus module and the ID sensor. In order to do this, switch off the supply voltage for the fieldbus module and switch it on again.

c. Configuring the fieldbus module (resume here for ID sensor that supports proxy mode)

The SOPAS ET configuration software for SICK identification sensors is used as standard for the commissioning and further configuration of the fieldbus module with the ID sensor that supports proxy mode connected to it.

The configuration of the fieldbus module is integrated in the menu of the respective ID sensor that supports proxy mode.

Installing and starting the configuration software

- Download and install the latest version of the SOPAS ET configuration software, as well as current device description files (*.sdd), from the online product page for the software:
www.sick.com/SOPAS_ET
by following the instructions provided there.

Connect the PC to the fieldbus module and switch on devices

- Connect the PC (switched-off) as follows:
 - Serial version of the ID sensor that supports proxy mode with fixed connecting cable (serial data interfaces only):
Use a data cable (no. 6036106, 2 m) to connect the USB interface 9 of the fieldbus module to the PC interface (USB).
 - Ethernet version of the ID sensor that supports proxy mode:
Use a data cable (e.g., no. 6034414, 2 m) to connect the Ethernet interface of the ID sensor to the Ethernet network of the PC.
- Switch on the supply voltage (DC 10 V ... DC 30 V) prepared by the user and selected according to the table, for the fieldbus module with the connected ID sensor. Following initialization of the fieldbus module and while attempting to establish communication with the ID sensor, the green "POWER" LED flashes. Once communication has been established and the fieldbus module is ready for operation, the "POWER" LED lights up steady. Meaning of LEDs → see "Optical status indicators", page 4.
- Switch on PC and start configuration software via the "SOPAS" option. Path: Start > Programs > SICK > SOPAS Engineering Tool > SOPAS.
- Start communication with the ID sensor with SOPAS ET as described in the operating instructions for the connected ID sensor that supports proxy mode. In order to do this, select the desired communication interface for searching in the connection wizard.
For the remaining steps in the process of configuring the connected ID sensor, see [CDF600-220x Fieldbus Module Technical Information](#) (no. 8015924).

d. Integrating the ID sensor in the IO controller and configuring data communication on the fieldbus

This section provides a brief overview of the general procedure. This is discussed in depth with regard to the ID sensor in the [CDF600-220x Fieldbus Module Technical Information](#) (no. 8015924).

Important!

The required GSDML files are available on the product site of the fieldbus module on the web:
www.sick.com/CDF600-2.

ID sensor that supports proxy mode:

- Integrate the ID sensor as a new IO device in the IO controller (e.g., PLC).
For this purpose, transfer the SICK sensor-specific GSDML file for the corresponding ID sensor to the device description database of the IO controller.
See [CDF600-220x Fieldbus Module Technical Information](#) (no. 8015924).
- Specify the object trigger source and the output format of the ID sensor for the fieldbus using SOPAS ET.

ID sensor that supports gateway mode:

- Integrate the fieldbus module as a new IO device in the IO controller master (e.g., PLC).
For this purpose, transfer the SICK-specific GSDML file for the fieldbus module to the device description database of the IO controller.
- IDM16x and IDM2xx hand-held scanners:**
Use the configuration codes to configure the hand-held scanner for the fieldbus module.
For more information, see → [CDF600-220x Fieldbus Module Technical Information](#) (no. 8015924).
- Any ID sensor with RS-232 interface:**
Connect RS-232 interface to pin 2, 3, 5 of the fieldbus module (DEVICE connection).
Set communication parameters to:
- Datarstring framing: STX and ETX
- Data format: 8 databits, no parity, 1 stop bit
- Data transmission rate: 9.6 kBd or 57.6 kBd according to the selected position, 4 or 2, of the "Mode" rotary encoding switch.

"Mode" rotary encoding switch (hexadecimal-coded)

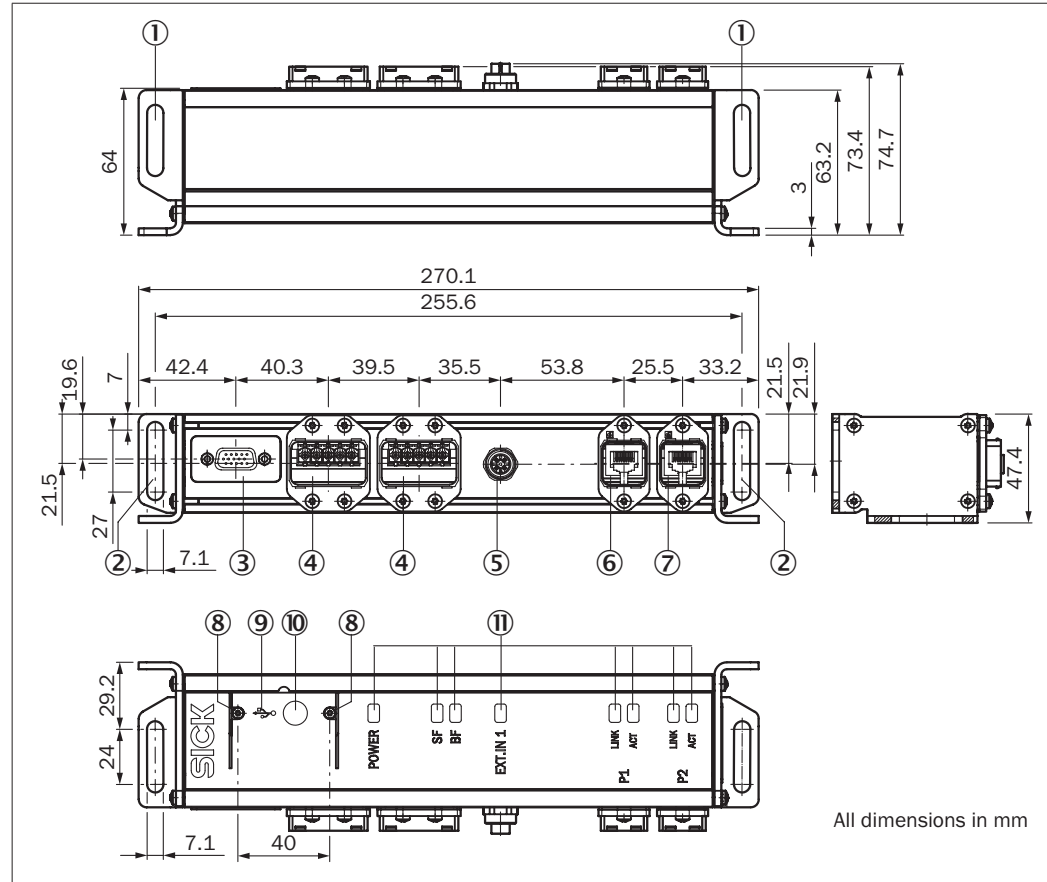
Operating mode and communication mode for ID sensor to be connected.

Position	Operating mode/Functions
Proxy mode for ID sensor that supports proxy mode	
0	Operation with ID sensor that supports proxy mode. CDF600 communication mode (factory default). Parameter cloning for ID sensor. Configuration with parameterization modules of GSDML file possible via IO controller.
1	Reserved for future use.
Gateway mode for ID sensor that supports gateway mode	
2	Operation with ID sensor that supports gateway mode. The fieldbus module operates as a gateway. CDF600 communication mode. Data transmission rate between ID sensor and fieldbus module: 57.6 kBd.
3	Reserved for future use.
4	As position 2, but data transmission rate between ID sensor and fieldbus module: 9.6 kBd.
5	Reserved for future use.
Additional functions	
6 ... D	Reserved for future use.
E	Operation for firmware update ¹⁾ of fieldbus module. No communication with PROFINET IO.
F	Transparent operation ²⁾ of the fieldbus module for firmware update of ID sensor. No communication with PROFINET IO.

1) All LEDs flash at the same time.
2) Data transmission rate 57.6 kBd.
"POWER" LED flashes cyclically 3 times.

Device description

Device layout



CDF600-2201: Sectional views and dimensions

Legend:

- ① Elongated mounting hole, 24 mm, unpainted (2 x), for mounting
- ② Elongated mounting hole, 27 mm, unpainted (2 x), alternative for mounting
- ③ "DEVICE" connection, 15-pin D-Sub HD female connector with seal
- ④ "POWER" connection, 5-pin power male connector (2 x), push-pull AIDA-compliant
- ⑤ "EXT.IN 1" connection, 5-pin M12 female connector, A-coded
- ⑥ "P1 PROFINET IO" connection, 8-pin RJ45 female connector, push-pull AIDA-compliant
- ⑦ "P2 PROFINET IO" connection, 8-pin RJ45 female connector, push-pull AIDA-compliant
- ⑧ Screw (Torx T8), captive (2 x), for hinged cover
- ⑨ "USB" connection, 5-pin micro-B female connector, for configuration and diagnostics, behind screw-mounted cover
- ⑩ "Mode" rotary encoding switch, for operating mode, behind screw-mounted cover
- ⑪ LED (8 x), status indicator (POWER, SF, BF, EXT. IN 1, P1 LNK, P1 ACT, P2 LNK, P2 ACT)

Optical status indicators

Display	LED	Status	Status
POWER	-	OFF	Fieldbus module without supply voltage
		Green	Flashes cyclically Sequence: Once: Only in operating mode 0 (proxy): Following startup, the fieldbus module searches for the ID sensor that supports proxy mode. Twice: The position of the rotary coding switch "Mode" was changed during operation. This has no influence on active operation. Following a restart, the fieldbus module then works in the operating mode that the new position of the rotary encoding switch presents. 3 times: "Transparent operation" operating mode of the fieldbus module for firmware update in the ID sensor. No communication with PROFINET IO. 4 times: Internal error. Firmware version of the ID sensor that supports proxy mode is not compatible with that of the fieldbus module. Contact SICK Service.
		Green	ON Fieldbus module ready following start and initialization. Operating mode 0 (proxy): Communication established with ID sensor that supports proxy mode. The fieldbus module is operational. Operating mode 2 or 4 (gateway): The fieldbus module is operational.
EXT.IN 1	-	OFF	No power supply to external input 1 ^{*)}
		Yellow	ON Power supply to external input 1 ^{*)}
SF	-	OFF	Fieldbus module without internal error
		Red	ON Operating mode 0 (proxy): Following startup, the fieldbus module searches for the ID sensor that supports proxy mode
BF	-	OFF	Data exchange between fieldbus module (slave) and IO controller via PROFINET IO possible.
		Red	ON No connection between fieldbus module (slave) and IO controller. Possible causes: - No electrical connection between fieldbus module and PROFINET IO - IO controller switched off/cannot be reached
		Red	Flashes cyclically Frequency 0.5 Hz Possible causes: - Parameterization error on IO controller (e.g., incorrect ID for IO device), no data exchange - Error on IO controller affecting configuration with modules, no data exchange
P1 LNK/ACT	-	OFF	Fieldbus module not connected to any active network; no data traffic possible
P1 LNK		Green	ON Fieldbus module connected with active network, e.g., with an Ethernet switch (switched-on)
P1 ACT		Orange	ON LED flickers when the fieldbus module is sending or receiving data
P2 LNK/ACT	-	OFF	Fieldbus module not connected to any active network; no data traffic possible
P2 LNK		Green	ON Fieldbus module connected with active network, e.g., with an Ethernet switch (switched-on)
P2 ACT		Orange	ON LED flickers when the fieldbus module is sending or receiving data

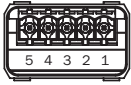
SF = system failure, BF = bus failure

*) Regardless of the logic assigned to the input via the SOPAS ET configuration software of the ID sensor.

● = illuminated; ● = flashing

Overview of pin assignments and wire colors (cables)

1. POWER connection (supply voltage)

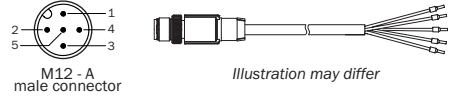


Pin	Signal	Function
1	L 1	Supply voltage (DC 10 V ... DC 30 V)
2	N 1	Ground
3	L 2	Supply voltage (DC 10 V ... DC 30 V)
4	N 2	Ground
5	FE	Functional earth

Pin assignment of the 5-pin POWER male connector, push-pull AIDA-compliant

2. EXT.IN 1 connection (digital switching input)

Cable no. 6026133 (2 m)



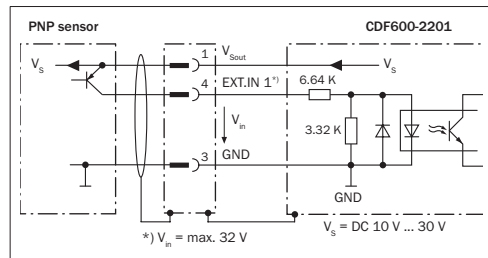
M12 - A male connector

Illustration may differ

Pin	Signal	Function	Wire color
1	DC 24 V _{out}	Supply voltage OUT (DC 10 V ... DC 30 V). Max. 400 mA	Brown
2	N.C.	-	White
3	GND	Supply voltage ground	Blue
4	EXT.IN 1 LED	External input 1	Black
5	N.C.	-	Green+yellow

Pin assignment of the 5-pin M12 male connector EXT.IN1 (A-coded), straight, to the cable and wire colors of the open cable end

Wiring of the "EXT.IN 1" switching input




Example wiring of the "EXT.IN 1" switching input

Characteristic	Description
Switching behavior	Power at the input starts the assigned function in the ID sensor that supports proxy mode (default: level active high, debounce 10 ms)
Properties	Can be wired, e.g., to current sourcing output of a trigger sensor
Electrical values	Low: $ V_{in} \leq 2 \text{ V}; I_{in} \leq 0.3 \text{ mA}$ High: $6 \text{ V} \leq V_{in} \leq 32 \text{ V}; 0.7 \text{ mA} \leq I_{in} \leq 5 \text{ mA}$
"EXT.IN 1" LED	Low: OFF High: ON

Specifications of the "EXT.IN 1" switching input


3. P1 and P2 PROFINET IO connections



Pin	Signal	Function
1	TD+	Sender+
2	TD-	Sender-
3	RD+	Receiver+
6	RD-	Receiver-
4, 5, 7, 8	N.C.	-

Pin assignment of both 8-pin RJ45 P1 and P2 PROFINET IO female connectors, push-pull AIDA-compliant

4. DEVICE connection



Pin	Signal	Function
1	DC 24 V _{out}	Supply voltage OUT (DC 10 V ... 30 V), Permissible output current dependent on ambient temperatures: Max. 2 A between -35 °C and +40 °C, max. 1.7 A between +40 °C and +50 °C
2	TxD (AUX)	RS-232, sender
3	RxD (AUX)	RS-232, receiver
4	N.C.	-
5	GND	Supply voltage ground
6 ... 15	N.C.	-

Pin assignment of the DEVICE 15-pin D-Sub HD female connector

Technical data

Model name	CDF600-2201 (no. 1063390)
Function	Proxy or gateway for PROFINET IO networks
Supported SICK identification sensors	ID sensors that support proxy mode: CLV61x FIELDBUS bar code scanner as well as CLV62x to CLV65x Others on request ID sensors that support gateway mode: CLV69x bar code scanner, LECTOR®62x and LECTOR®65x image-based code readers, RFH620, RFH630 (HF) and RFU62x, RFU63x (UHF) RFID interrogators IDM1xx and IDM2xx hand-held scanners
Station type	Slave
Supported communication modes	Dependent on sensor type, see CDF600-220x Fieldbus Module Technical Information (no. 8015924) In operating mode 0 (proxy): CDF600 mode with handshake, CDF600 mode without handshake In operating mode 2 or 4 (gateway): CDF600 mode without handshake
PROFINET IO data interface	2-port Ethernet in accordance with IEEE 802.3 (data transmission rate 100 Mbit/s, full-duplex transmission, 2-port switch, auto negotiation, auto crossover). Maximum data length limited to 4,000 bytes by communication mode (fragmentation protocol).
AUX data interface (DEVICE connection)	Serial (RS-232), 57.6 kBd or 9.6 kBd, for data communication with the ID sensor
USB data interface	USB 2.0 for configuration and diagnostics
Digital switching outputs	1 x $V_{in} = \text{max. } 32 \text{ V}$, can be wired, e.g., with PNP output of a trigger sensor
Digital switching outputs	-
Optical indicators	8 x LED
Parameter cloning	Integrated (configuration data of the connected ID sensor that supports proxy mode)
Electrical connections	1 x 15-pin D-Sub HD female connector (DEVICE), with seal 2 x 5-pin power male connectors (POWER), push-pull AIDA-compliant 1 x 5-pin, M12 female connector (EXT. IN 1), A-coded 2 x 8-pin RJ45 female connectors (P1 and P2 PROFINET IO), push-pull AIDA-compliant 1 x USB female connector, type micro B (covered) ¹⁾
Supply voltage IN (L1/L2)	DC 10 V ... 30 V, reverse polarity protected. Voltage range may be restricted by connected ID sensor → see "CDF600-2201-relevant specifications of ID sensors", page 3 Power supply unit: SELV according to EN 61010 Supply cable protection max. 16 A
Total input current	Max. 16 A
Supply voltage OUT (DEVICE)	As supply voltage IN, not short-circuit-protected
Output current to ID sensor (DEVICE)	Dependent on ambient temperature, max. 2A (reduced current at temperatures higher than +40 °C)
"External input 1" output current	Max. 400 mA
Fieldbus module power consumption	< 5 W (no ID sensor connected, switching input "EXT.IN 1" not connected)
Fieldbus module current consumption	Max. 250 mA
Housing/Housing color	Non-varnished cast aluminum, light-blue labeling film (RAL 5012)
Electrical Safety	IEC 61010-1:2010 + Cor.:2011
Enclosure rating	IP 65, acc. to DIN EN 60068-2-17: 1995-05 ²⁾
Electrical protection class	III
Dimensions	270.1 mm x 74.7 mm x 47.4 mm (without connected cables)
Weight	690 g (without cables)
Electromagnetic compatibility (EMC)	Radiated emission: Acc. to IEC 61000-6-4:2018-02 Electromagnetic immunity: Acc. to EN 61000-6-2:2005-08
Vibration resistance/Shock resistance	According to DIN EN 60068-2-6: 2008-10/ According to DIN EN 60068-2-27: 2010-02
Ambient temperature	Operation: -35 °C ... +50 °C / Storage: -35 °C ... +70 °C
Permissible relative air humidity	Max 90 %, non-condensing
Mark of conformity	CE, UL 60950-1

1) For configuration and diagnostics only.

2) Under the following conditions: Use of a SICK scanner standard connecting cable for the ID sensor, the plug connections are fixed for connected cables. Unused connections are fitted with yellow protective plugs (M12) or mounted and engaged protective caps (push-pull AIDA-compliant).

For detailed technical specifications, see the [Online data sheet](#) on the product site on the web (www.sick.com/CDF600-2).

Parameter cloning (ID sensor that supports proxy mode only)

In the same way as the optional CMC600 parameter memory module (which can be installed in the CDB and CDM connection modules), the CDF600-2201 fieldbus module provides an external parameter memory for the ID sensor that supports proxy mode. When the parameter values in the connected ID sensor are permanently saved (proxy mode 0), the fieldbus module also stores a copy of this parameter set in its parameter memory.

This makes it easier to exchange the ID sensor in the event of device failure because the new device of the same type automatically loads the parameter set from the parameter memory of the fieldbus module. This means that manual configuration is not required. In the event of device failure, the ID sensor that supports proxy mode copies its parameter set automatically following initialization into the empty parameter memory of the exchanged, connected fieldbus module of the same type.

Maintenance and care

With the exception of cleaning the transparent panels covering the rotary encoding switch and the 8 status indicators, the CDF600-2201 fieldbus module is maintenance-free in operation.

- In contaminated environments, the side cover with the circular transparent panel covering the rotary encoding switch and the transparent panels covering the status indicators should be cleaned from time to time. Use a soft cloth dipped in a mild cleaning agent for this purpose.

Transport and storage

Transport and store the fieldbus module in the original packaging, with protective plugs and caps completely screwed-on. Do not store outdoors. To ensure that any residual moisture present can escape, do not store the devices in airtight containers. Do not expose to aggressive media (e.g., solvents). Storage conditions: Dry, dust-free, no direct sunlight, as little vibration as possible, storage temperature -35 °C to $+70\text{ °C}$, relative humidity max. 90 % (non-condensing).

Repairs

Repair work on the fieldbus modules may only be performed by qualified and authorized service personnel from SICK AG.

Disassembly and disposal

Any fieldbus module which can no longer be used at the end of the product life cycle must be disposed of in an environmentally friendly manner in accordance with the respective applicable country-specific waste disposal regulations. As they are categorized as electronic waste, fieldbus modules must never be disposed of with household waste. SICK AG does not currently take back devices that are no longer fit for use.

Sources for Obtaining Additional Information

The following sources of additional information about the CDF600-2201 fieldbus module, its optional accessories, and SICK identification sensors are available in electronic format on the corresponding SICK product pages on the web:

CDF600-2201 fieldbus module www.sick.com/CDF600-2

- Detailed technical specifications (online data sheet)
- EC declarations of conformity
- Dimensional drawing and 3D CAD dimension models in various electronic formats
- Suitable accessories (including cables, trigger sensors)
- CDF600-2201 fieldbus module operating instructions in German (no. 8016852) and English (no. 8016853), in other languages if required
- CDF600-220x Fieldbus Module Technical Information in German (no. 8015923) and English (no. 8015924)
- GSDML files for the ID sensors/the fieldbus module for integration in the IO controller
- Ordering information in the identification solutions product catalog

SICK ID sensors that support proxy mode:

e.g., **CLV61x bar code scanner**
www.sick.com/CLV61x

- Operating instructions

SICK ID sensors that support gateway mode:

e.g., **RFU62x RFID interrogator**
www.sick.com/RFU62x

- Operating instructions

e.g., hand-held scanners:

1D hand-held scanners
www.sick.com/IDM140
www.sick.com/IDM160

2D hand-held scanners
www.sick.com/IDM240
www.sick.com/IDM260

- Operating instructions for IDM1xx and IDM2xx hand-held scanners

Support is also available from your sales partner: www.sick.com/worldwide.