ACM200

Accessory Communication Module

METTLER TOLEDO

ACM200
Accessory Communication Module

METTLER TOLEDO Service

Essential Services for Dependable Performance of Your ACM200 Accessory Communication Module

Congratulations on choosing the quality and precision of METTLER TOLEDO. Proper use of your new equipment according to this Manual and regular calibration and maintenance by our factory-trained service team ensures dependable and accurate operation, protecting your investment. Contact us about a service agreement tailored to your needs and budget. Further information is available at www.mt.com/service.

There are several important ways to ensure you maximize the performance of your investment:

1. **Register your product**: We invite you to register your product at www.mt.com/productregistration so we can contact you about enhancements, updates and important notifications concerning your product.

2. **Contact METTLER TOLEDO for service**: The value of a measurement is proportional to its accuracy – an out of specification scale can diminish quality, reduce profits and increase liability. Timely service from METTLER TOLEDO will ensure accuracy and optimize uptime and equipment life.

   a. **Installation, Configuration, Integration and Training**: Our service representatives are factory-trained, weighing equipment experts. We make certain that your weighing equipment is ready for production in a cost effective and timely fashion and that personnel are trained for success.

   b. **Initial Calibration Documentation**: The installation environment and application requirements are unique for every industrial scale so performance must be tested and certified. Our calibration services and certificates document accuracy to ensure production quality and provide a quality system record of performance.

   c. **Periodic Calibration Maintenance**: A Calibration Service Agreement provides on-going confidence in your weighing process and documentation of compliance with requirements. We offer a variety of service plans that are scheduled to meet your needs and designed to fit your budget.

   d. **GWP® Verification**: A risk-based approach for managing weighing equipment allows for control and improvement of the entire measuring process, which ensures reproducible product quality and minimizes process costs. GWP (Good Weighing Practice), the science-based standard for efficient life-cycle management of weighing equipment, gives clear answers about how to specify, calibrate and ensure accuracy of weighing equipment, independent of make or brand.

FCC Notice

This device complies with Part 15 of the FCC Rules and the Radio Interference Requirements of the Canadian Department of Communications. Operation is subject to the following conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his or her expense.

- Declaration of Conformity is available at http://glo.mt.com/global/en/home/search/compliance.html/compliance/.

Safety Instructions

- READ this manual BEFORE operating or servicing this equipment and FOLLOW these instructions carefully.
- SAVE this manual for future reference.

⚡	⚠ **WARNING**
	PERMIT ONLY QUALIFIED PERSONNEL TO SERVICE THIS EQUIPMENT. EXERCISE CARE WHEN MAKING CHECKS, TESTS, AND ADJUSTMENTS THAT MUST BE MADE WITH POWER ON. FAILING TO OBSERVE THESE PRECAUTIONS CAN RESULT IN BODILY HARM.
💥	⚠ **CAUTION**
	THE ACM200 MAY ONLY BE INSTALLED ACCORDING TO THIS INSTALLATION MANUAL AND THE INSTALLATION MANUAL OF THE CORRESPONDING WEIGHING TERMINAL. **DO NOT SHORTEN INTERNAL SPACINGS.** **DO NOT OPEN INTERNAL CONNECTIONS.**
💥	⚠ **CAUTION**
	USE ONLY GENUINE METTLER TOLEDO ACCESSORIES AND CABLE ASSEMBLIES WITH THIS PRODUCT. USE OF ANAUTHORIZED OR COUNTERFEIT ACCESSORIES OR CABLE ASSEMBLIES MAY RESULT IN VOIDED WARRANTY, IMPROPER OR ERRONEOUS OPERATION OR DAMAGE TO PROPERTY (INCLUDING THE UNIT) AND PERSONAL INJURY.
💥	⚠ **CAUTION**
	ALWAYS DISCONNECT THE SYSTEM FROM THE POWER SUPPLY BEFORE COMMENCING MAINTENANCE WORK. DO NOT OPEN THE HOUSING AS LONG AS NON-INTRINSICALLY SAFE CIRCUITS ARE ENERGISED.
⚠	*NOTICE*
	OBSERVE PRECAUTIONS FOR HANDLING ELECTROSTATIC SENSITIVE DEVICES.

Disposal of Electrical and Electronic Equipment

In conformance with the European Directive 2012/19/EC on Waste Electrical and Electronic Equipment (WEEE) this device may not be disposed of in domestic waste. This also applies to countries outside the EU, per their specific requirements.

Please dispose of this product in accordance with local regulations at the collecting point specified for electrical and electronic equipment.

If you have any questions, please contact the responsible authority or the distributor from which you purchased this device.

Should this device be passed on to other parties (for private or professional use), the content of this regulation must also be related.

Thank you for your contribution to environmental protection.

Contents

1 Safety Instructions

The communication module ACM200 is part of an explosion-protected weighing system. It may only be installed and operated in the non-hazardous area. Particular care is required when using weighing in systems in hazardous areas. The code of practice is oriented to the "Safe Distribution" concept drawn up by METTLER TOLEDO.

1.1. Competence

- The weighing system may only be installed, maintained and repaired by authorised METTLER TOLEDO service personnel.

1.2. Ex approval

- No modifications may be made to the weighing system and no repair work may be performed on the modules. All system modules that are used must comply with the specifications contained in the installation instructions. Non-compliant equipment jeopardises the intrinsic safety of the system, cancels the "Ex" approval and renders any warranty or product liability claims null and void.

- The safety of the weighing system is only guaranteed when the weighing system is operated, installed and maintained in accordance with the respective instructions.

- Also comply with the following:
    o the instructions for the system modules
    o the regulations and standards in the respective country
    o the statutory requirement for electrical equipment installed in hazardous areas in the respective country
    o all instructions related to safety issued by the owner

- The explosion-protected weighing system must be checked to ensure compliance with the requirements for safety before being put into service for the first time, following any service work and every 3 years, at least.

1.3. Operation

- Avoid damage to the system components.

1.4.   Installation

- Only install or perform maintenance work on the weighing terminal in the hazardous zone if the necessary tools and any required protective clothing are provided.

- The certification papers (conformity certificates, manufacturer's declarations) must be present.

- Use only cables for intrinsically safe circuits in accordance with the applicable country-specific regulations and standards for the installation of an explosion-protected weighing system.

- Lay cables in such a way that they are protected from damage.

- Only route cables into the housing of the system modules via an approved, suitable earthing cable gland and ensure proper seating of the seals.

- If the weighing system is used in conjunction with an automatic or manual filling plant, all of the system modules must be equipped with a permanently wired emergency stop circuit, independent of the system circuit, in order to prevent personal in injury or damage to other items of equipment.

1.5.   Maintenance

- Always disconnect the system from the power supply before commencing maintenance work. Do not open the housing as long as non-intrinsically safe circuits are energised.

1.6.   Service

- Service technicians must have attended a product-specific course of training for hazardous-duty equipment.

- Service work should be performed outside hazardous zones wherever possible.

- To avoid accident and injury, furn the weighing system off and wait for at least 30 seconds before connecting or disconnecting cables to/from the printed circuit board.

- Only use the parts or modules specified in the spare parts list as replacements.

2   Overview

ACM200 is a communication module for the non-hazardous area, e.g. for connection of a PC in the non-hazardous area to an explosion-protected weighing system.

This Installation manual covers the following versions:

Table 2-1: ACM200 Versions

| Material Number	Base Model	Interfaces	Designation
22026695	ACM200-AC	RS232	To provide RS232 data interface
22026696		RS422/485	To provide RS422/RS485 data interface
22026697		CL20mA	To connect to an IDnet terminal
22026692	ACM200-DC	RS232	To provide RS232 data interface
22026693		RS422/485	To provide RS422/RS485 data interface
22026694		CL20mA	To connect to an IDnet terminal
30404410		RS422-Plug	To connect to a SICSpro terminal

2.1.   Hazardous Area Approvals

Table 2-2: ACM200 Hazardous Area Approvals
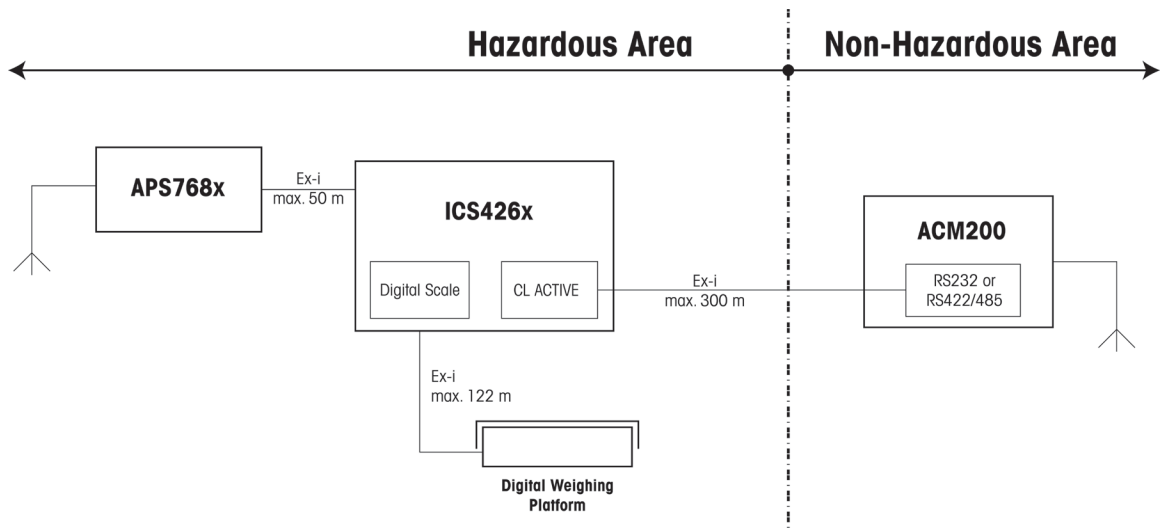
|	
FM - US/Canada	AIS Class I,II,III Division 1 Groups A, B, C, D, E, F, G
ATEX	II (2) G [Ex ib Gb] IIC II (2) D [Ex ib Db] IIIC
IECEx	[Ex ib Gb] IIC [Ex ib Db] IIIC
FM - US Cert. No. FM - Canada ATEX Cert. No. IECEx Cert. No.	FM17US0172 FM17CA0090 BVS 07 ATEX E 149 IECEx BVS 11.080

2.2. Typical Configurations

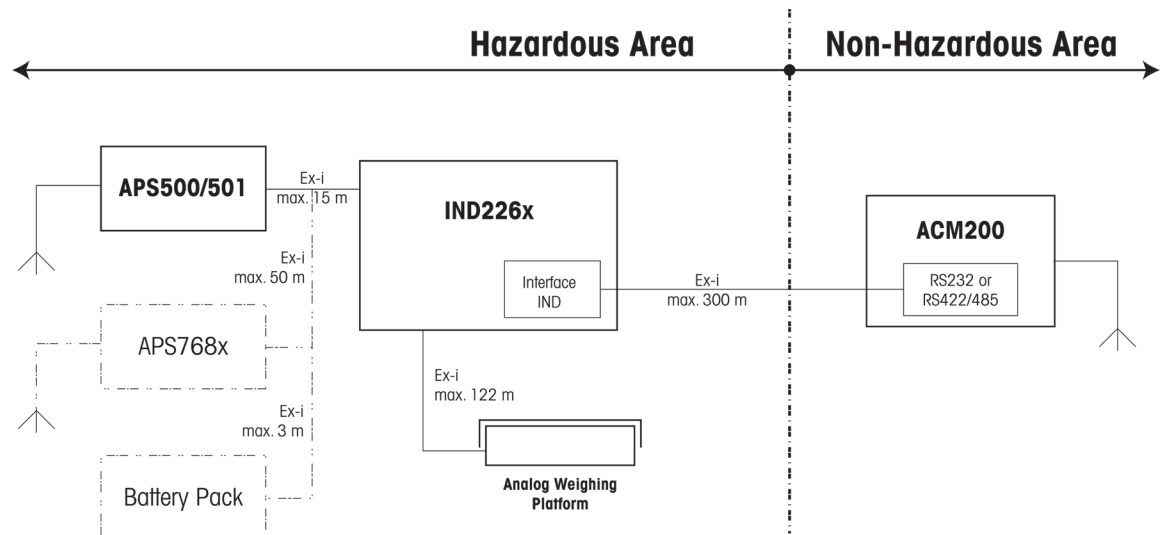### 2.2.1. Configuration with Weighing Terminal ICS466x
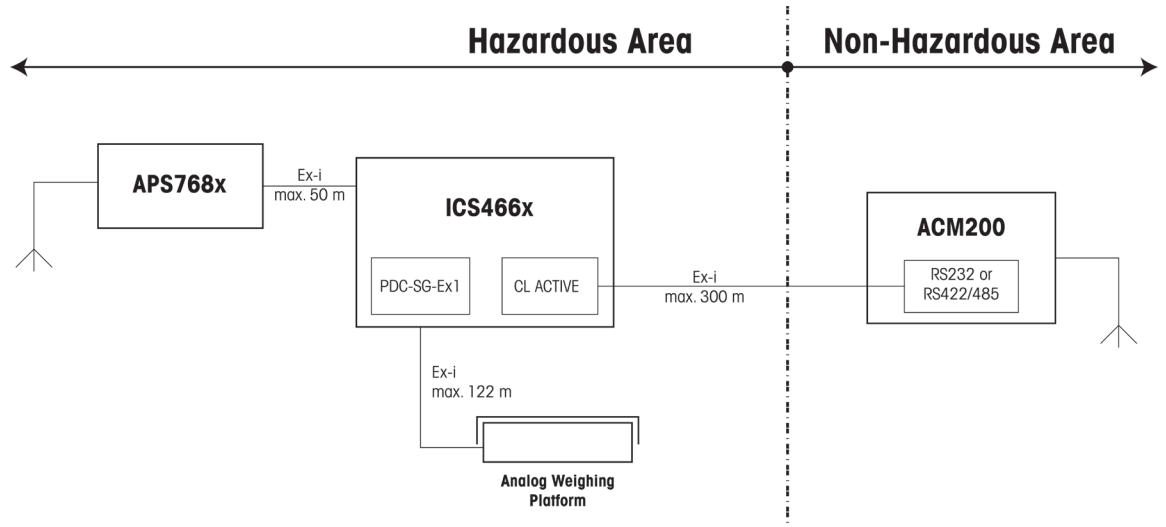
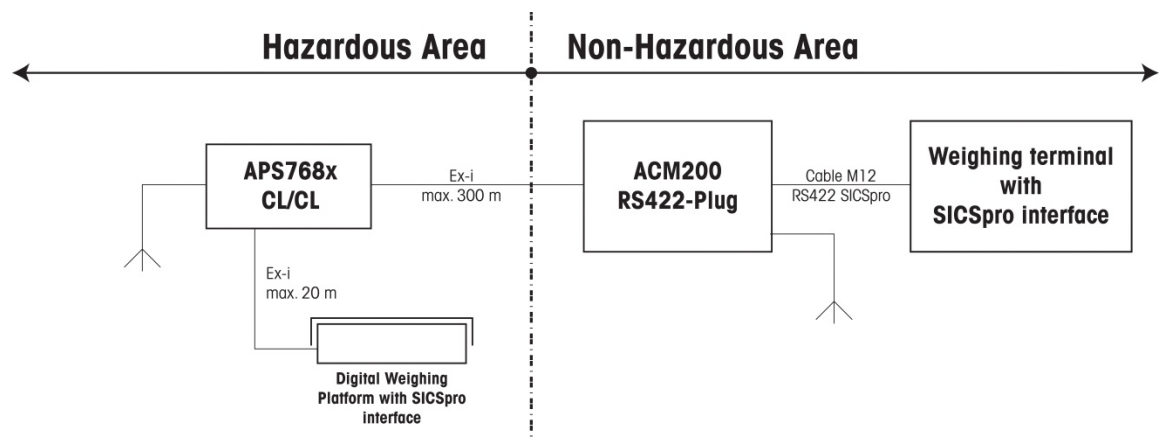### 2.2.2. Configuration with Weighing Terminal ICS426x

2.2.3. Configuration with Weighing Terminal IND256x
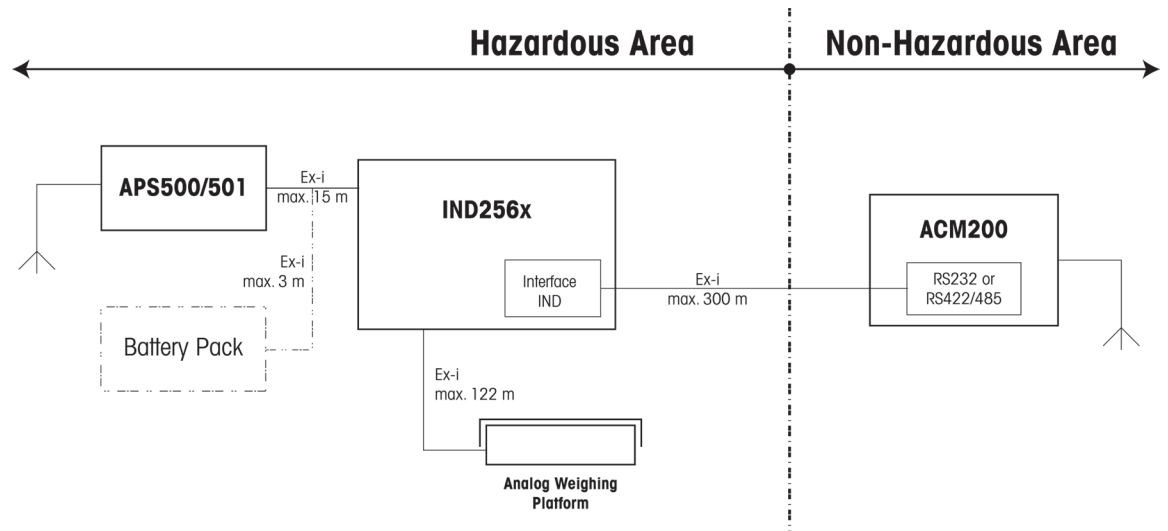
2.2.4. Configuration with Weighing Terminal IND226x (Discontinued March, 2021)

2.2.5. Configuration with Weighing Terminal in a Non-Hazardous Area, Using SICSpro

2.2.6. Configuration with Weighing Terminal in a Non-Hazardous Area, Using IDNet

Hazardous Area | **Non-Hazardous Area**

| APS768x CL/CL | Ex-i max. 300 m | ACM200 CL20mA | IDNet Cable | Weighing terminal with IDNet interface |

Ex-i max. 20 m

Digital Weighing Platform with IDNet interface

3 Installation

	⚠ **WARNING**
	THE ACM200 MAY ONLY BE INSTALLED ACCORDING TO THIS INSTALLATION MANUAL AND THE INSTALLATION MANUAL OF THE CORRESPONDING WEIGHING TERMINAL. DO NOT SHORTEN INTERNAL SPACINGS. DO NOT OPEN INTERNAL CONNECTIONS.
	⚠ **CAUTION**
	USE ONLY GENUINE METTLER TOLEDO ACCESSORIES AND CABLE ASSEMBLIES WITH THIS PRODUCT. USE OF ANAUTHORIZED OR COUNTERFEIT ACCESSORIES OR CABLE ASSEMBLIES MAY RESULT IN VOIDED WARRANTY, IMPROPER OR ERRONEOUS OPERATION OR DAMAGE TO PROPERTY (INCLUDING THE UNIT) AND PERSONAL INJURY.
	⚠ **CAUTION**
	ALWAYS DISCONNECT THE SYSTEM FROM THE POWER SUPPLY BEFORE COMMENCING MAINTENANCE WORK. DO NOT OPEN THE HOUSING AS LONG AS NON-INTRINSICALLY SAFE CIRCUITS ARE ENERGISED.

3.1. Setting up the ACM200

Set up the communication module ACM200 in the non-hazardous area. See the dimensional drawing in section 5.1.2. for drill-hole dimensions for fixed installation.

3.2. Customizing Connection Cables: ACM200

Customer-specific cables for intrinsically safe circuits must be customized as follows:

Cable	2 x 2 x 0.5 mm^2
Dimension A (Weighing Terminal)	60 mm (2.4″)
Dimension B (ACM200)	70 mm (2.8″)
Max. Length	300 m (1000 ft)

Wire end ferrules
with plastic collar,
crimp connection

Push sleeve over wires
and cable shielding

Earthing cable gland

A

Cable shielding

As per country-specific regulations
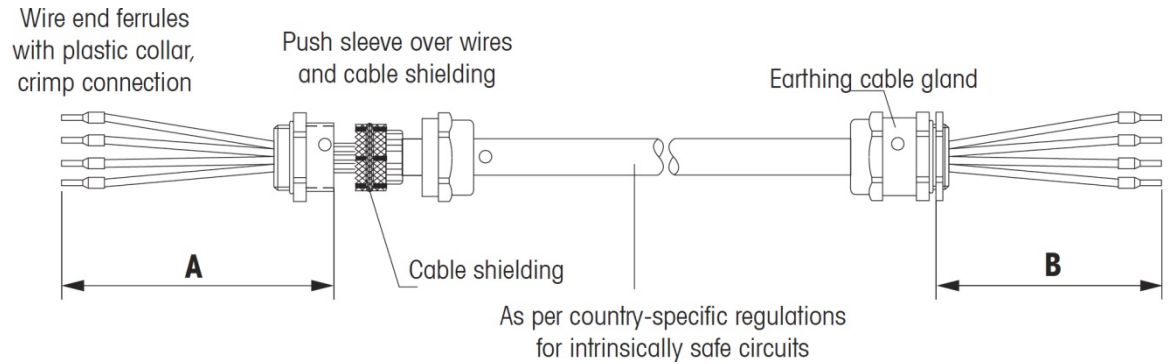for intrinsically safe circuits

B

Figure 3-1: Customizing Connection Cable

1. Cut cable to length and strip cable ends according to dimension A/B.

2. Shorten cable shielding on both sides to 10 mm (0.4").

3. Strip wire ends.

4. Crimp wire end ferrules onto wire ends with a crimping tool.

5. Push second rear section of earthing cable gland onto the cable.

6. Apply the cable shielding only to the weighing terminal end. To do so, push the sleeve over the wires and the cable shielding and fold over the cable shielding.

7. Push on front section of cable gland and screw onto rear section.

3.3. Configuring module ACM200-CL/RS422

3.3.1. Opening the housing

1. Pull the power plug (AC version) or disconnect the power supply (DC version).
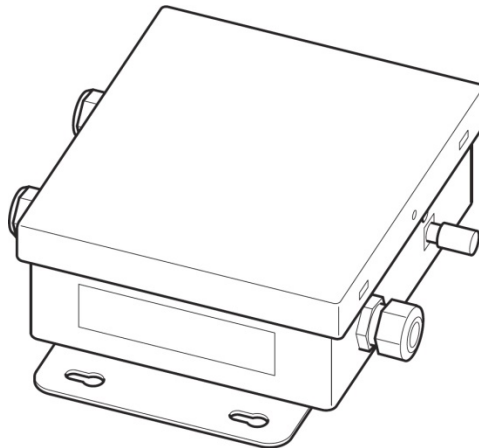

Figure 3-2: ACM200 Housing

2. Insert the tip of a flat-blade screwdriver into one of the two slots located on the bottom of the front panel assembly and gently push in toward the enclosure. A "pop" sound indicates when the cover is released.

3. If the clip does noi release easily, apply a small amount of force/pressure to the front cover of the ACM200 and repeat step 1.

4. Repeat Step 1 for the other slot.

5. With the two spring clips released, lift the bottom of the front panel firmly up and out until it completely clears the top edge of the bottom enclosure.

6. Squeeze the top of the front panel to the enclosure slightly and push upward to unsnap the two remaining clips, then lift the panel to clear them. The panel will swing down, hinged by two wire cables at the bottom.

3.3.2. Setting the Jumpers

Plug in the jumpers W1 to W5 as per table below.

Jumper Position	Meaning	Factory Setting Spare Part	Note
W2*	CL20mA interface	Plugged in	The transmission and reception loop operating mode can also be selected. Refer to section 3.3.3 or control drawing 72203677.
W3*	RS422 interface	-	A matching resistor W1 can also be set; refer to control drawing 72203677.
W4*	RS485 interface	-	Refer to control drawing 72203677.
W1	Matching resistor	Open, no matching resistor	Only for RS422/485, the matching resistor is required only on the last component of a field bus.
W5	Power supply	AC version: "12 V" position DC-RS422/485 version: "24V" position DC-CL20mA version: "24V" position DC-RS422-Plug version: "12V" position	With the wide-range power supply in use, it is necessary to insert the jumper in the "12V" position.

* Only set one position at a time

3.3.3. Selecting the CL Interface Operating Mode for the ACM200-CL/RS422

The CL interface of the optional module ACM200-CL/RS422 can be operated with either an active or passive transmission and reception loop.

Factory setting: **Passive transmission and reception loop**

1. Pull the power plug (AC version) or disconnect the power supply (DC version).

2. Open the housing cover of the ACM200.

3. Set the desired operating mode with the DIP switch K1 on the module ACM200-CL/RS422.

Table 3-1: Setting CL Interface Operating Mode

Operating Mode	K1-1	K1-2	K1-3	K1-4	K1-5	K1-6
TXD passive, RXD passive (factory setting)	on	on	off	off	off	off
TXD active, RXD active	off	off	on	on	on	on
TXD passive, RXD active	off	on	on	on	off	off
TXD active, RXD passive	on	off	off	off	on	on

3.3.4. Closing the Housing

Close the housing cover. Ensure correct position of the seal when doing so.

4 Servicing the ACM200

	⚠ **WARNING**
	DO NOT SHORTEN INTERNAL SPACINGS. DO NOT OPEN INTERNAL CONNECTIONS
	⚠ **WARNING**
	ALWAYS DISCONNECT THE SYSTEM FROM THE POWER SUPPLY BEFORE COMMENCING MAINTENANCE WORK. DO NOT OPEN THE HOUSING AS LONG AS NON-INTRINSICALLY SAFE CIRCUITS ARE ENERGIZED.

4.1. Checklists

4.1.1. Maintenance Checklist

4.1.1.1. Visual Inspection

Check condition of the following cables:

- Power cable ACM200

- Interface cable ACM200

- For verified systems: Check sealing

4.1.1.2. Function Check

Check the correctness of the cable assignment in accordance with the appropriate control drawing:

- Data transmission cable between terminal and ACM200

- Power cable ACM200

- Interface cable ACM200

- Connection cable mainboard ACM200 - power supply unit ACM200

- For verified systems: Check sealing and slide marks

4.1.2. Service Checklist

Carry out the following check procedure at the terminal and the weighing platform before troubleshooting and after servicing

- Check the weighing terminal connection cable und the supply cable.

- Check the data transmission, see instructions of the appropriate weighing terminal.

• Check whether all the cable connections are wired and fastened correctly.

4.1.2.1. Function Check

Check the correctness of the cable assignment in accordance with the appropriate control drawing:

• Data transmission cable between weighing terminal and ACM200

• Power cable ACM200

• Interface cable ACM200

• Connection cable mainboard ACM200 - power supply unit ACM200

• For verified systems: Check sealing and slide marks.

4.2. Troubleshooting

⚠ **WARNING**
DANGER OF ELECTRIC SHOCK. DE-ENERGIZE THE ACM200 BEFORE OPENING ITS ENCLOSURE.

4.2.1. Checking the ACM200 Mainboard

Figure 4-1: ACM200 Mainboard

Table 4-1: Plug Assignments

Plug	Connection
J1	RS232
J2	Power supply
J3	Intrinsically safe connection to terminal

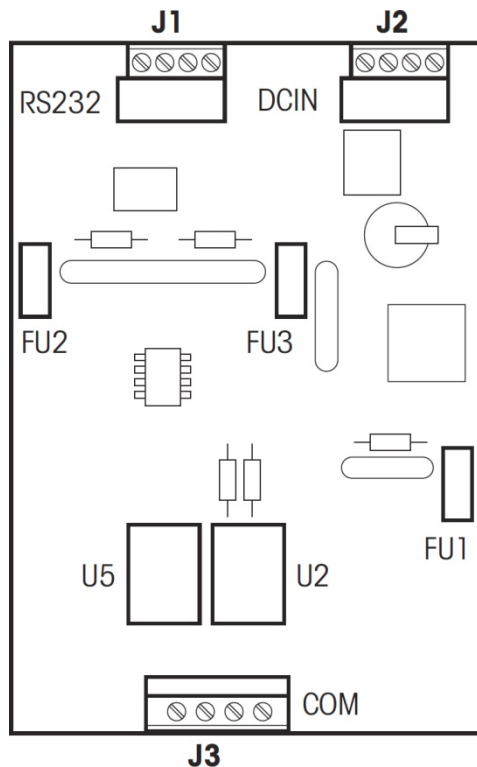1. Carry out a visual inspection whether the fuses FU1, FU2, FU3 are defective.

2. Test the fuses using an ohmmeter. When doing so, make sure that the coating of the fuses is not damaged. If R < 20 Ω, the fuse is in is in good order.

3. Carry out a visual inspection of the ICs U2 and U5 whether the soldering points are in good order.

4.2.2. Checking the Optional Interface Board ACM200-CL/RS422

Figure 4-2: ACM200 Optional Interface Board
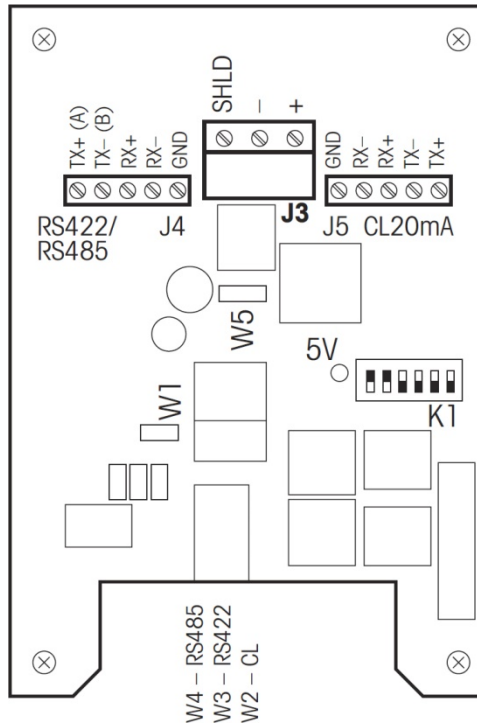
1. Carry out a visual inspection.

2. Check the input voltage at the connector J3.

Table 4-2: Measuring Input Voltage

Type	Measuring Point	Setpoint [V]	Jumper
ACM200-AC	Pin + / Pin -	10.8 … 13.2 V	W5 = "12 V"
ACM200-DC	Pin + / Pin -	20.4 … 26.4 V	W5 = "24 V"

3. Check the internal supply voltage.

Table 4-3: Measuring Internal Supply Voltage

Measuring Point	Setpoint [V]
+5 V test point for GND or the CL or RS interface	4.7 - 5.3 V

4.2.3. Checking the Function of the ACM200

	⚠ **WARNING**
	DANGER OF ELECTRIC SHOCK. CLOSE THE ACM200 ENCLOSURE BEFORE CARRYING OUT THE FUNCTION TEST

1. Remove the RS232 plug-in connection from J1.

2. Connect RxD and TxD in order to jumper J1.

3. Connect J3 to the weighing terminal using an intrinsically safe connection cable.

4. Close the cover of the ACM200.

5. Apply voltage to the ACM200.

6. Carry out the function test in Technician mode: see operating instructions of the appropriate weighing terminal.

■ With the ICS4_6x no function test can be performed.

If the same digits are shown in the display from the left and right, the mainboard is in order.

4.3. Faults and their Rectification

| Fault	Possible Cause	Rectification
No data transfer via the serial interface	Optional interface board ACM200-CL/RS422 is not connected, or is configured incorrectly	• Plug jumper W5 in accordance with device version • Carry out wiring and connection of the serial interfaces, per the control drawing • Check the interface connection (jumpers W1, W2 and W3) and correct if necessary
	Mainboard ACM defective	• Replace ACM200 mainboard
	Optional interface board ACM22-CL-RS422 defective	• Replace interface board ACM22-CL-RS422
No internal voltage 5 V DC detected	Power supply defective	• Check jumper W5 • Check the power supply wiring • AC version: replace the power supply

4.4. Spare Parts

4.4.1. Exploded Parts Diagram
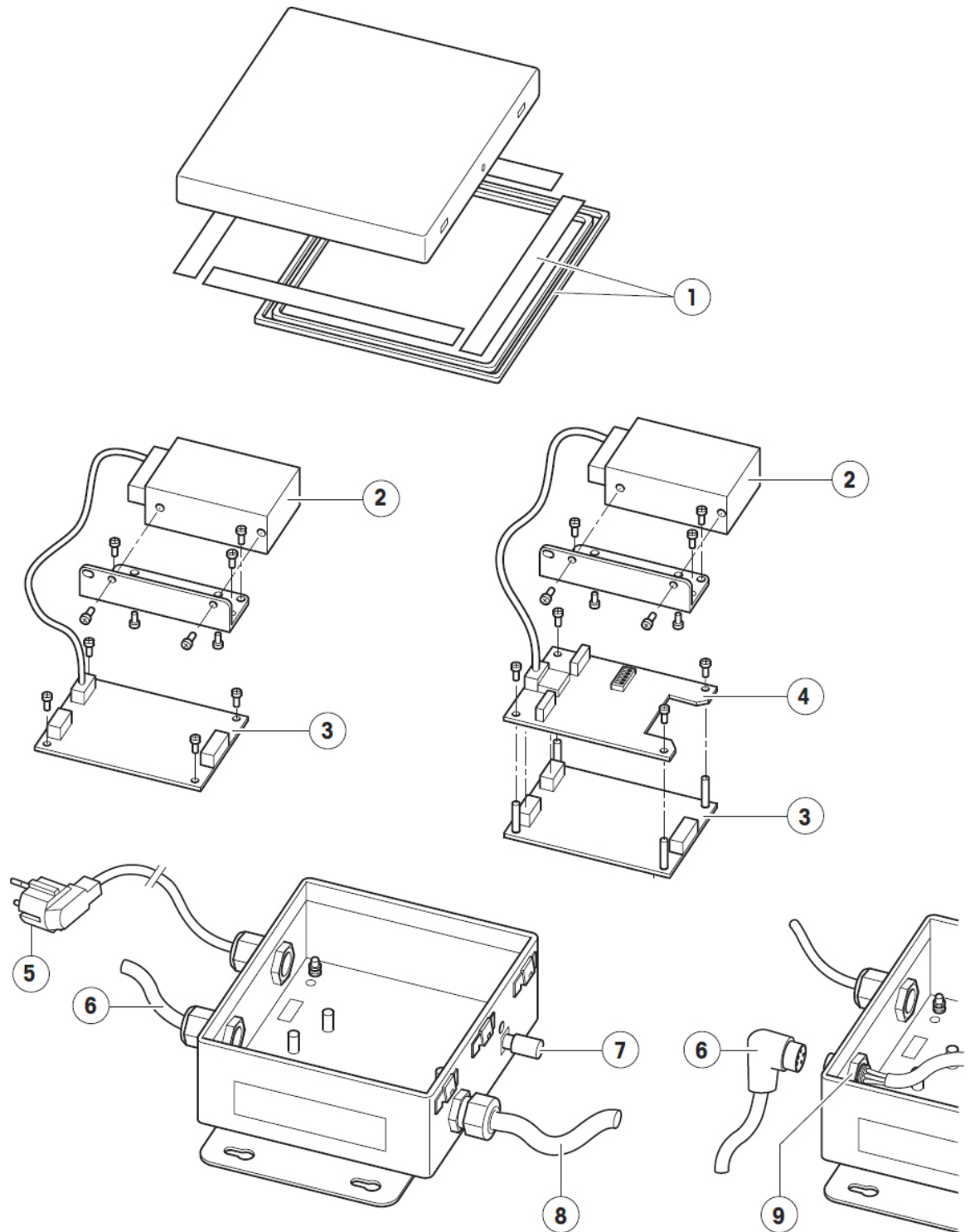
Figure 4-3: ACM200 Exploded Parts Diagram

4.4.2. Spare Parts List

Table 4-4: ACM200 Spare Parts

Item	Designation	Part Number
1	Housing seal	72 215 006
2	Wide range power supply unit	22 016 769
3	Mainboard ACM200	22 016 768
4	ACM200-CL/RS422 interface board (optional)	30 021 017
5	Power cable with plug EURO GB USA CH DK	 72 215 007 72 215 008 72 215 009 72 215 010 72 215 011
6	Interface cable RS232: 9 pin SubD, 10 m IDNet/CL: 10 pin round plug, open ends, 10m RS422-Plug: Cable M12 RS422 SICSpro 12/6P 0.5 m 2.5 m 5 m 10 m 20 m	 72 215 012 22 022 865 30 242 222 30 242 223 30 242 224 30 242 226 30 242 225
7	Mantle terminal, set 2.5 mm^2 and 4.0 mm^2	00 504 664
8	Ex-i connection cable: 2 x 2 x 0.5 mm^2, 10 m	72 215 013
9	M12 RS422 flange plug open wire, for ACM200-DC-RS422-Plug only	30 403 950

4.5.   Repairs

4.5.1.   Safety Notes

	⚠ **WARNING**
	DE-ENERGISE THE SYSTEM BEFORE OPENING THE DEVICE
	⚠ **CAUTION**
THE CLIP FASTENERS OF THE HOUSING COVER HAVE SHARP EDGES. DANGER OF INJURY. DO NOT TOUCH THE HOUSING COVER AF THE (SIX) CLIP IN FASTENERS IN ORDER TO AVOID CUTS TO FINGERS.	
	NOTICE
	ENSURE THAT YOU ARE EARTHED BEFORE TOUCHING ELECTRONIC COMPONENTS. ALWAYS PLACE ELECTRONIC COMPONENTS ON ANTISTATIC MATERIALS.

4.5.2. Replacing the ACM200 Mainboard

Open the ACM200; refer to section 3.3.1.

4.5.2.1. ACM200

1. Remove the plug-in connections J1, J2 and J3 from the mainboard.
2. Loosen the mounting screws and remove the mainboard.
3. Insert and screw down the new mainboard using stainless steel screws.
4. Reconnect the plug-in connections J1, J2 and J3.

4.5.2.2. ACM200 with ACM200-CL/RS422

1. Loosen the plug-in connections J3 at the interface board.
2. Unscrew the mounting screws and pull the interface board carefully out of the plug-in connection of the mainboard.
3. Remove the plug-in connections J1, J2 and J3 from the mainboard.
4. Loosen the mounting screws and remove the mainboard.
5. Insert and screw down the new mainboard using stainless steel screws.
6. Reconnect the plug-in connections J2 and J3.
7. Insert a new interface board and screw onto the stainless steel bolts using 4 screws.
8. Reconnect plug-in connection J3.

4.5.3. Replacing the Power Supply Unit

1. Open the ACM200; refer to section 3.3.1.
2. Dismantle the wide range power supply unit with clamp by removing the 3 screws from the housing base.
3. Separate the power supply unit by unscrewing 2 screws from the clamp.
4. Loosen the power supply unit screws and pull the power cable so that the screws at the connection terminals of the power supply unit can be opened using the screwdriver.
5. Remove the power cable and connection cable to the mainboard from the defective power supply unit and connect to the new power supply unit in accordance with the appropriate terminal diagram.
6. Mount the clamp with 2 screws to the power supply unit.
7. Pull the power cable and tighten the power cable screws again.
8. Fasten the clamp including power supply unit with 3 screws to the housing base.

4.5.4. Replacing the ACM200-CL-RS422 Interface Board

1. Open the ACM200, see Section 3.3.1.
2. Loosen the plug-in connections J3 at the interface board.
3. Remove the interface cable at the terminal block J4 or J5 respectively.

4. Unscrew the mounting screws and pull the interface board carefully out of the plug-in connection of the mainboard.

5. Insert a new interface board and screw onto the stainless steel bolts using 4 screws.

6. Remove the interface cable at the terminal block J4 or J5 respectively in accordance with the appropriate terminal diagram.

7. Set Jumper W5 in accordance with the device version (AC: position "12 V" DC: position 24 V).

8. Specify the interface type using one of the three jumpers W2, W3 or W4.

9. Check the setting of the DIP switch K1 at the CL20mA data interface (if jumper W2 is plugged), see installation instructions.

10. If necessary, set the matching resistor (jumper W1 closed) at the RS422/RS485 data interface (if jumpers W3 or W4 are closed).

11. Reconnect plug-in connection J3.

4.5.5. Replacing the RS422 Flange Plug at an ACM200-DC-RS422-Plug

1. Open the ACM200; refer to section 3.3.1.

2. Remove the data cable from the J3 and J4 terminal of the ACM200-CL/RS422 interface board.

3. Loosen the counter nut of the RS422 flange plug.

4. Remove the RS422 flange plug and insert the new RS422 flange plug.

5. Fasten the counter nut.

6. Connect the 6 wires to the J3 and J4 terminal of the ACM200-CL/RS422 interface board according to the following table.

Table 4-5: RS422 Flange Plug Wiring

J4		J3	
Signal	Color	Terminal	Color
TX+ (A)	Yellow	SHLD	
TX- (B)	Green	-	
RX+	Brown	+	Red
RX-	Orange		
GND	Black		

4.5.6. Closing the ACM200

Be sure to observe the following points when closing the ACM200:

• Ensure the correct positioning of the seals in the cover and at the earthing cable glands. Replace damaged seals.

• Connect all the connection cables in accordance with the appropriate terminal diagram and check them, see installation instructions of the weighing terminal.

• Close the ACM200 so that the cover latches in audibly at the 6 clip fasteners at the corners.

4.5.7.   Sealing the ACM200 in Connection with the Power Pack APS768x

In compulsory-certification operation the housing of the ACM200 has to be protected by sealing.

4.5.7.1.   With Paper Seal

1. Put housing cover in place. Ensure that the housing cover latches in audibly at the 6 clip fasteners in the corners.

2. Seal one of the slots above the clip fasteners with a paper seal.

4.5.7.2.   With Sealing Wire and Metal Seal

Sealing wire and metal seal are contained in the sealing kit ME-22020598.

1. Insert the sealing wire through the small hole in the cover of the ACM200 and the middle clip fastener.

2. Put housing cover in place. Ensure that the housing cover latches in audibly at the 6 clip fasteners in the corners.

3. Use a suitable tool TO apply the metal FO seal to both ends of the sealing wire.
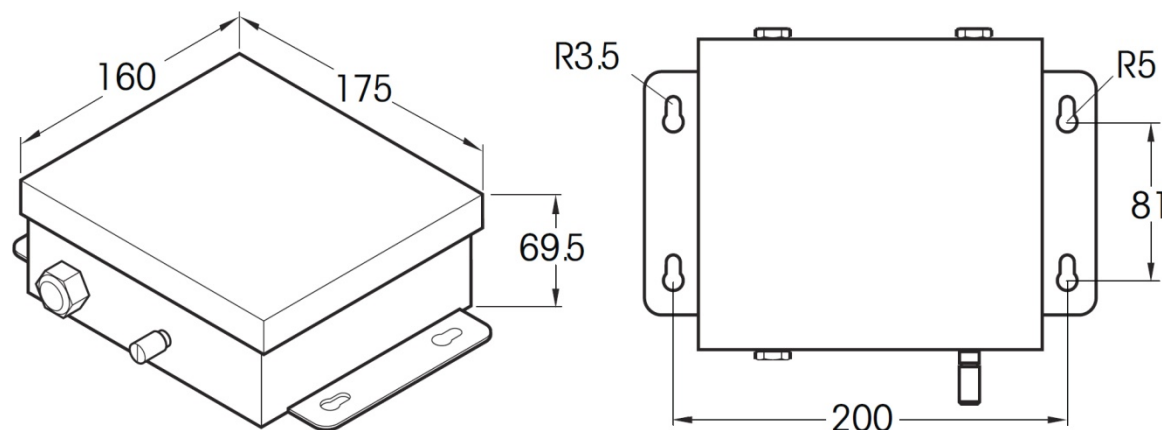
5 Technical Data

5.1. ACM200

5.1.1. Power Supply

ACM200-AC: 100-240 V AC, 50/60 Hz

ACM200-DC: 12 / 24 V DC, depending on W5 jumper. Refer to section 3.3.2.

5.1.2. Dimensions

5.2. CL20mA Interface, Module ACM200-CL/RS422

NOTICE
ALL SETTINGS MUST BE CONFIGURED IN THE APPROPRIATE WEIGHING TERMINAL.

Table 5-1: ACM200-CL/RS422 Settings

Type of interface	• 20 mA current loop, 2 transmission loops • Active or passive operation • Signal level 0: 20 mA • Signal level 1: 0 mA • Electrical isolation only in passive configuration and up to U = 30 AC, Û = 42 V, U = 60 V DC

Interface parameters (as settings used in the terminal)	Operating mode Full duplex Transmission type Bit serial, asynchronous Transmission code ASCII Data bits 7/8 Parity Even, odd, zero, one, none Baud rate 150. 300, 600, 1200, 2400, 4800, 9600, 19200
Transmission and/or reception loop passive	One external power source supplies the transmission and/or and/or reception loop L_{max} 30 mA U_{max} 27 V Voltage range 15 V (+10 % /-0 %) Current level 18 mA - 24 mA (high level) Edge steepness 2 - 20 mA/us To set operating mode, refer to section 3.3.3
Transmission and/or reception loop active	One internal power source supplies the transmission and/or reception loop Voltage 12 V DC Current Adjusted to +2 mA, for transmission and/or reception loop To set operating mode, refer to section 3.3.3
Cable	• Shielded. twisted pair • Line resistance ≤ 125 0/km • Line cross-section 2 0.14 mm- • Line capacity ≤ 130 nF/km • Max. 1000 m for baud rates up to 4800 baud • Max. 600 m for 9600 baud • Max. 300 m for 19200 baud

5.3.   Accessories

Accessory	Article Number
Ex-i connection cable, 4-wires, 2 x 2 x 0,5 mm^2, 10 m, with cable glands and bushes mounted	22 020 215
Ex-i connection cable, 4-wires, 2 x 2 x 0,5 mm^2, 100 m roll, without bushes and cable glands	22 016 791
Ex-i cable bushes (H0.5/13) for 4-wire cable, 0.5 mm^2, 100 pcs.	22 006 709
Cable glands M16 x 1.5 Eex e ll, 6 pcs	22 006 708
W&M Sealing kit for APS768x-ACM200	22 020 598

6 Control Drawings

For installation of an ACM200, refer to the following Control Drawings and Manuals:

Model	Control Drawing Number	Manuals
APS768x	22006397	Installation Manual 22021223
IND256x	3041414C/30426536B	Installation Manual 30491430
IND226x*	72203677	Installation Manual 72203958
IND560x	72191600	Installation Manual 64061929 Safety Instructions 30095698
ICS4_6x	22026630	Installation Manual 22026623

* Discontinued, March 2021

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