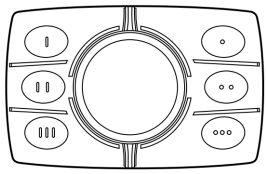
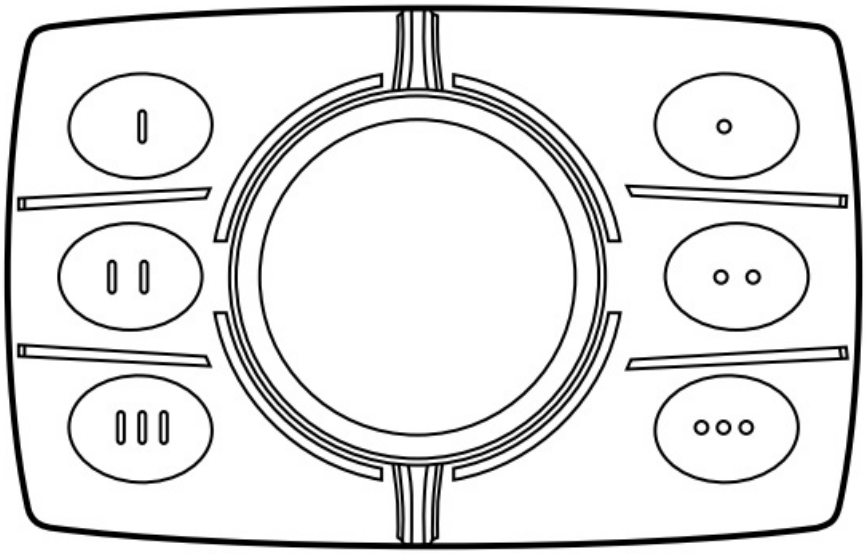


ifm CR1300 Pushbutton Module Instruction Manual

ifm CR1300 Pushbutton Module



Contents

Preliminary note

Technical data, approvals, accessories and further information at www.ifm.com.

Symbols used

Instruction
> Reaction, result
[…] Designation of keys, buttons or indications
→ Cross-reference

 Important note Non-compliance may result in malfunction or interference.

 Information Supplementary note

 **WARNING!**
Warning of serious personal injury.
Death or serious irreversible injuries may result.

 **CAUTION!**
Warning of personal injury.
Slight reversible injuries may result.

NOTE!
Warning of damage to property.

Safety instructions

- The unit described is a subcomponent for integration into a system. The system architect is responsible for the safety of the system. The system architect undertakes to perform a risk assessment and to create documentation in accordance with legal and normative requirements to be provided to the operator and user of the system. This documentation must contain all necessary information and safety instructions for the operator, the user and, if applicable, for any service personnel authorised by the architect of the system.
- Read this document before setting up the product and keep it during the entire service life.
- The product must be suitable for the corresponding applications and environmental conditions without any restrictions.
- Only use the product for its intended purpose(→ 3 Functions and features)
- If the operating instructions or the technical data are not adhered to, personal injury and/or damage to property may occur.
- In case of malfunctions of the unit, please contact the manufacturer. Tampering with the unit is not allowed.
- Installation, electrical connection, set-up, programming, configuration, operation and maintenance of the product must be carried out by personnel qualified and authorised for the respective activity.
- Protect units, connectors and cables against damage.
- Replace damaged units, otherwise the technical data and safety will be impaired.

Functions and features

The ecomatPanel is only intended and set up for connection to ecomatDisplays.
Communication takes place via the special ifm interface or via a free CAN interface. Integration into a system is carried out via J1939.

 **WARNING!**
Deterioration of the safety function
> Possible hazard for people or installations
The unit is not approved for safety-related tasks in the field of operator protection.

► Only use the unit within the limits of the technical data.

Function

Overview of the common characteristics

- Rotary button with turn, tilt and push function
- 6 programmable function keys with RGB background illumination for night design
- Plastic housing for panel mounting and surface mounting in the cabin
- CAN interface with SAE J 1939 protocol

Distinctive features

	CR1300	CR1301
Rotary button with turn, tilt and push function	●	●
Function keys (number)	6	6
Segmented LED ring for rotary button	–	●

● = available

Mounting

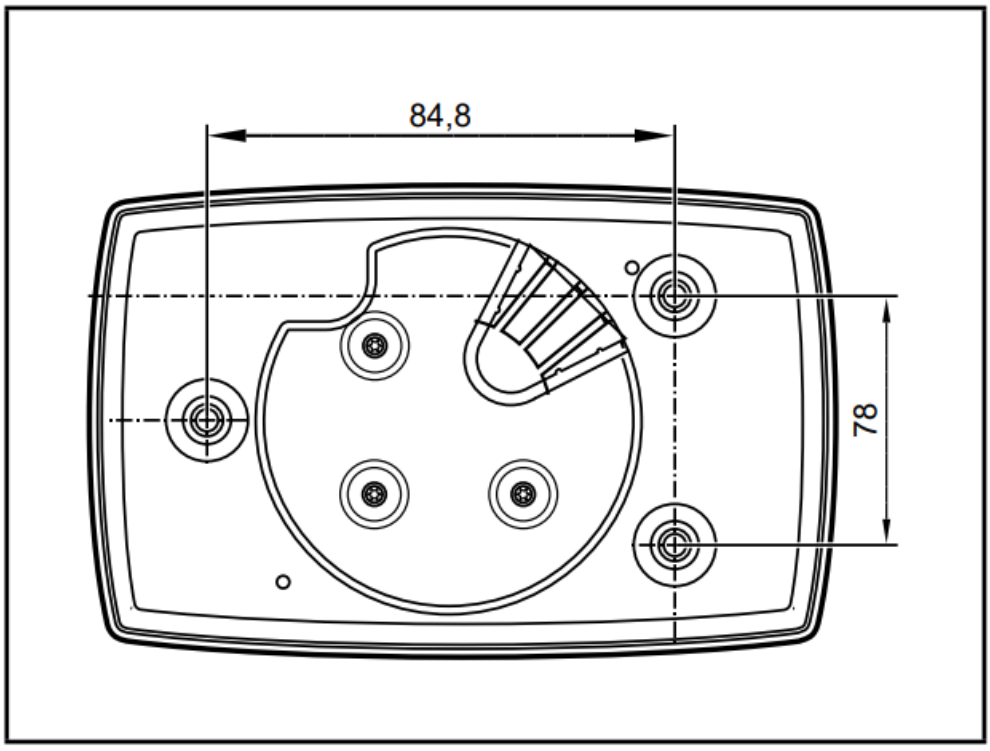
Mounting accessories

The unit is supplied without mounting accessories.
You can find more information about the available accessories at: www.ifm.com

General installation instructions

Location for mounting accessories

The back of the unit has been prepared for fixing the mounting accessories.



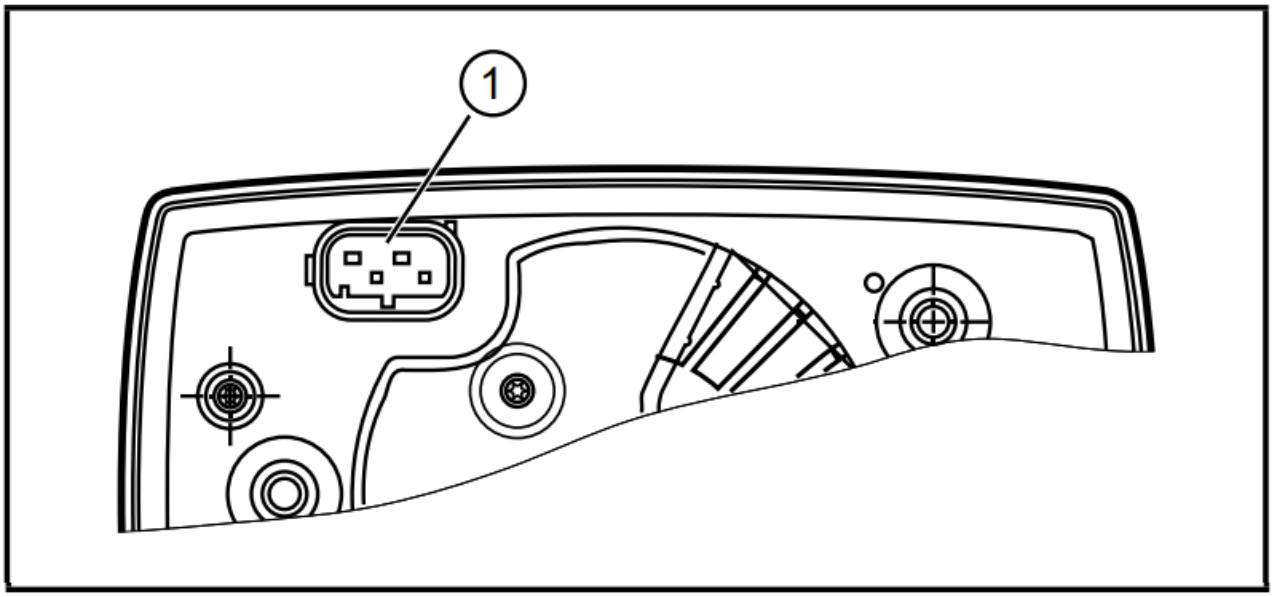
Location for mounting accessories (back of the unit)
Usable M6 thread depth: ≤ 18 mm

Electrical connection

Connection accessories

You can find more information about the available accessories at: www.ifm.com

General wiring information



1: Supply, CAN
4-pin Tyco MQS connector (back of the unit)

Wrong connection may cause damage to the unit.
► Observe the safety instructions.

The short-circuit / reverse polarity protection of the unit applies to the operating voltage connections.
► Basically lay all supply and signal cables separately.
► Lay supply and signal cables away from the device using the shortest possible route.
► All connected cables must be provided with a strain relief.

Cover all unused connectors

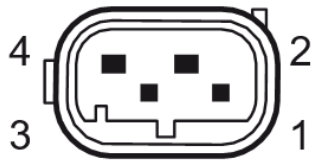
Moisture penetrating through unused or unprotected connectors may destroy the unit.
► Cover unused connectors with protective caps.

Fuses

► To protect the unit use fuses for the operating voltages.

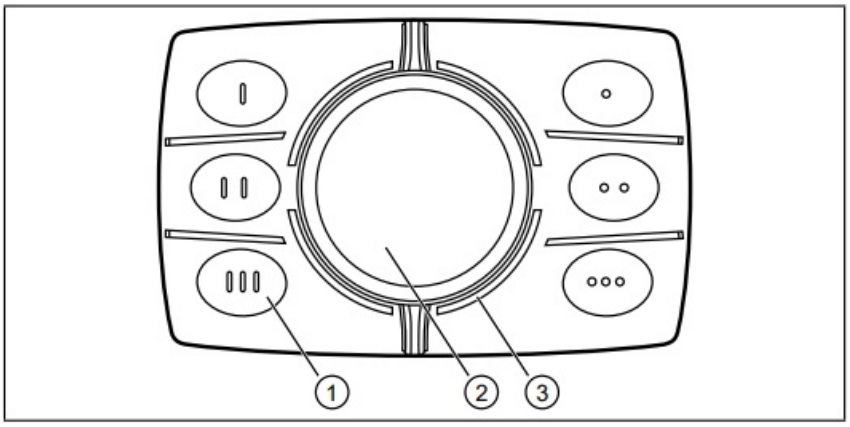
Designation	Potential	Connector 1	Fuse
Operating voltage	9…32 V DC	Pin 4	max? 2 A

Terminal designation to DIN 72552
Operating voltage and CAN interface

Tyco MQS connector (4-pole)		Pin	Potential
	CAN interface	1	CAN_L
		2	CAN_H
	Operating voltage	3	GND
		4	9…32 V DC

CAN Interface: 2.0 A/B, ISO 11898; Default 250 kbit/s
CAN protocol: SAE J1939

Operating and display elements



1: 6 freely programmable function keys with RGB background illumination
2: Rotary button with turn, tilt and push function
3: Segmented LED ring (only CR1301)

Operation

Communication is compatible with the CAN SAE J1939 standard.

- 250 kBaud CAN baud rate
- Transmission speed of the keys cyclically every 30 ms
- Dynamic addressing via J1939 possible
- The display elements keep the status of the last message.

CAN messages for the keys

CAN identifier: 0x10FF6487(default)
J1939 PGN: 0xFF64
J1939 priority: 0x4

CAN message (J1939)	Description	Value
KeyPad_J1939_I Drive_1 Byte address: Byte 1, bit 0	Status key 1	0 = key not pressed 1 = key pressed
KeyPad_J1939_I Drive_2 Byte address: Byte 1, bit 2	Status key 2	0 = key not pressed 1 = key pressed
KeyPad_J1939_I Drive_3 Byte address: Byte 1, bit 4	Status key 3	0 = key not pressed 1 = key pressed
KeyPad_J1939_I Drive_4 Byte address: Byte 1, bit 6	Status key 4	0 = key not pressed 1 = key pressed
KeyPad_J1939_I Drive_5 Byte address: Byte 2, bit 0	Status key 5	0 = key not pressed 1 = key pressed
KeyPad_J1939_I Drive_6 Byte address: Byte 2, bit 2	Status key 6	0 = key not pressed 1 = key pressed

CAN messages for the rotary button

CAN identifier: 0x10FF6487(default)
J1939 PGN: 0xFF64
J1939 priority: 0x4

CAN message (J1939)	Description	Value
KeyPad_J1939_I Drive_EncVal Byte address: Byte 3	Number of steps that the rotary button has been turned since the last query	0…24 24 = one full turn
KeyPad_J1939_I Drive_EncDir byte address: Byte 3, bit 5	Rotational direction	0 = clockwise 1 = anti-clockwise
KeyPad_J1939_I Drive_Enter Byte address: Byte 3, bit 6	Rotary button pressed	0 = rotary button not pressed 1 = rotary button pressed
KeyPad_J1939_I Drive_Left Byte address: Byte 4, bit 0	Rotary button tilted to the left	0 = rotary button not tilted 1 = rotary button tilted
KeyPad_J1939_I Drive_Right Byte address: Byte 4, bit 2	Rotary button tilted to the right	0 = rotary button not tilted 1 = rotary button tilted
KeyPad_J1939_I Drive_Up Byte address: Byte 4, bit 4	Rotary button tilted upwards	0 = rotary button not tilted 1 = rotary button tilted
KeyPad_J1939_I Drive_Down Byte address: Byte 4, bit 6	Rotary button tilted downwards	0 = rotary button not tilted 1 = rotary button tilted

CAN messages for the illumination

All CAN messages for the illumination have a data length of 8 bytes and a value range of 0…255.

CAN message (J1939)	Byte 1	Byte 2	Byte 3	Byte 4	Byte 5	Byte 6	Byte 7	Byte 8
LIGHT_J1939_BUTTON1_2_ INTENSITY CAN ID: 0x18FF7587(default) **J1939 PGN:** 0xFF75 **J1939 priority:** 0x06	key 1			key 2				
	R	G	B	R	G	B	FF	FF
LIGHT_J1939_BUTTON3_4_ INTENSITY CAN ID: 0x18FF7687(default) **J1939 PGN:** 0xFF76 **J1939 priority:** 0x06	key 3			key 4				
	R	G	B	R	G	B	FF	FF
LIGHT_J1939_BUTTON5_6_ INTENSITY CAN ID: 0x18FF7787(default) **J1939 PGN:** 0xFF77 **J1939 priority:** 0x06	key 5			key 6				
	R	G	B	R	G	B	FF	FF
LIGHT_J1939_CORONA1_2_ INTENSITY (only CR1301) **CAN ID**: 0x18FF7887(default) **J1939 PGN:** 0xFF78 **J1939 priority:** 0x06	LED segment 1			LED segment 2				
	R	G	B	R	G	B	FF	FF
LIGHT_J1939_CORONA3_4_ INTENSITY (only CR1301) **CAN ID**: 0x18FF7987(default) **J1939 PGN:** 0xFF79 **J1939 priority:** 0x06	LED segment 3			LED segment 4				
	R	G	B	R	G	B	FF	FF

Example: Trigger key 1 and key 2 to light orange

CAN message (J1939)	Byte 1	Byte 2	Byte 3	Byte 4	Byte 5	Byte 6	Byte 7	Byte 8
Example CAN message ID: 16x18FF7587	key 1			key 2				
	R	G	B	R	G	B	FF	FF
ifm orange (255 R, 110 G, 0 B)	255	110	0	255	110	0	255	255

Maintenance, repair and disposal

The unit is maintenance-free.
► Do not open the housing as the unit does not contain any components which can be maintained by the user. The unit must only be repaired by the manufacturer.
► Clean the unit using a dry cloth.
► Dispose of the unit in accordance with the national environmental regulations.

Approvals/standards

Test standards, regulations, the EU declaration of conformity and approvals can be found at: **www.ifm.com**

Documents / Resources

	ifm CR1300 Pushbutton Module [pdf] Instruction Manual CR1300 Pushbutton Module, CR1300, Pushbutton Module, Module

References

- Manual-Hub.com - Free PDF manuals!
- User Manual