

Mobrey™ MCU900 Series 4–20 mA + HART Compatible Controller

Quick Start Guide for Installation



HART
COMMUNICATION PROTOCOL

⚠ WARNING

Failure to follow safe installation guidelines could result in death or serious injury

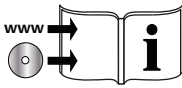
- The Mobrey MCU900 Series control unit (“control unit”) must not be installed in a hazardous area. The control unit can be connected to transmitters that are installed in a hazardous area
- Use the control unit only as specified in this guide and the product reference manual. Refer to the Mobrey MCU900 Series Reference Manual (Document IP2030/RM) and Mobrey MCU900 Series Safety Manual (Document IP2030/SI) for more instructions
- The control unit must be installed, connected, commissioned, operated, and maintained by suitably qualified personnel only, observing national and local requirements that may apply

Electrical shock could cause death or serious injury

- Make sure that the control unit is not powered when removing the terminal cover and making terminal connections
- If the control unit is installed in a high voltage environment and a fault condition or installation error occurs, high voltage may be present on leads and terminals

Symbols used in this guide

Document Number



- Refer to numbered document on the supplied CD-ROM or on the Mobrey brand pages at www.emersonprocess.com for further information.
- An electronic device with Adobe Acrobat software installed is needed to view the document contents.



- A default configuration for a control unit as shipped from the factory.



- Switch on/off power only to the control unit.

Required equipment

Standard tools e.g. screwdrivers and wire strippers/cutters.

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Installation: Wall-mount (IP65) Unit

Note

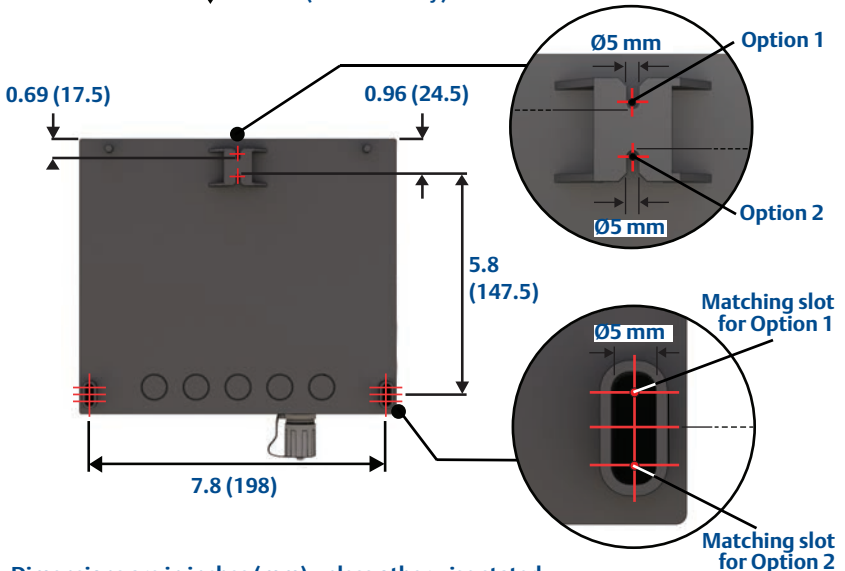
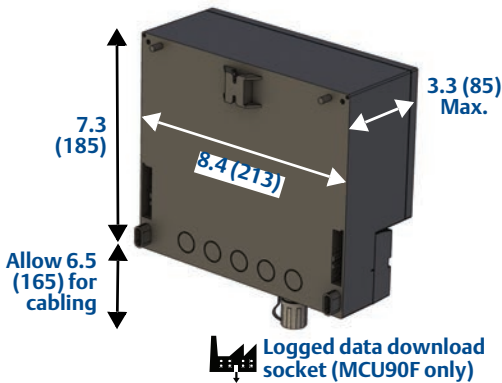
- The control unit must only be installed in a non-hazardous area (ordinary location), but it can be connected to transmitters installed in hazardous (classified) areas.

Mounting the (IP65) control unit

- The **wall-mount** control unit (IP65 box) is for inside or outside, but requires protection from direct sunlight, flooding, and heavy rain.



For safety, the wall or other mounting structure should support four times the 1.4 kg (mains power) or 1.0 kg (DC power) mass of the unit



Note: Dimensions are in inches (mm) unless otherwise stated.

Make the electrical connections

Wall-mount (IP65 box) cable glands and blanking/stopping plugs

1. Remove the terminal cover



MCU901/MCU902



MCU90F



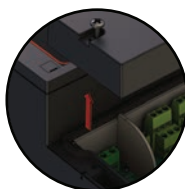
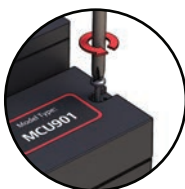
Power off
control unit

Remove all transit
caps if they are fitted

Do not remove the
pre-fitted RS232 socket



Undo 2 x terminal cover screws



2. Fit cable glands (*supplied*) in the pre-drilled holes ready for cabling
3. Fit blanking/stopping plugs (*supplied*) in the unused holes

Cable glands (as supplied)



Blanking/stopping plugs (as supplied)



Wall-mount (IP65 box) power supply connections

1. Connect the mains 115/230 Vac or 24 Vdc supply (depending on the control unit):

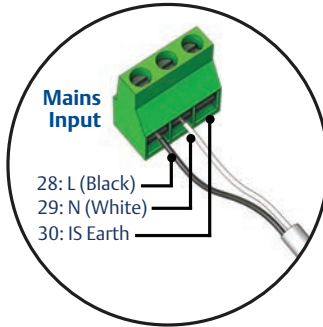


Always switch off the power when doing these connections



Terminal 30 must be connected to an Intrinsically Safe Earth/Ground if the transmitter (wired to Terminals 1 and 2) is in a hazardous area

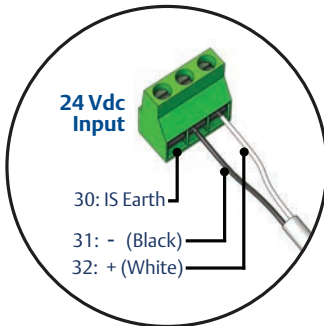
On a mains-powered unit:



Set the voltage selection switch to 115 or 230 Vac



On a 24 Vdc-powered unit:

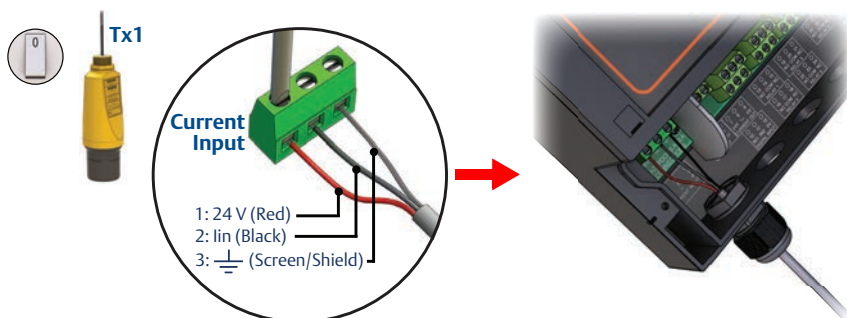


Note

- Laws and standards for electrical wiring vary from country to country. The colors shown for the flexible cable wiring shown in this QIG are for the United States of America. It is very important to check the local regulations for electrical wiring involving mains/wall power. If you have any doubts at all, get help from a qualified electrician.

Wall-mount (IP65 box) current input (transmitter) connections

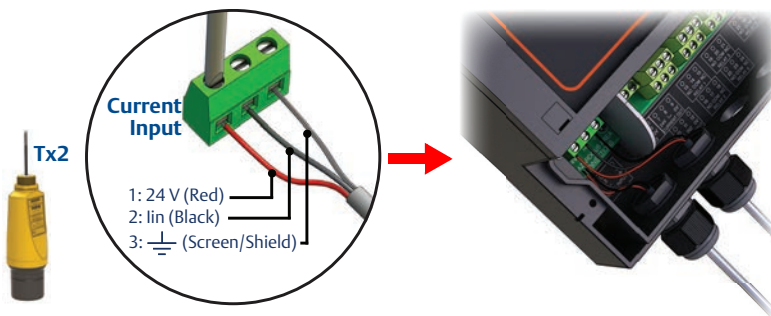
1. Connect the *single* 4–20 mA or HART transmitter (to a MCU901 or MCU90F) or the *first* of two HART transmitters (to a MCU902 only):



2. Power on, and respond to on-screen prompts until a measurement is displayed.
3. Connect the *second* HART transmitter (**to a MCU902 only**):



- a. Disconnect the *first* transmitter and then connect the *second* transmitter

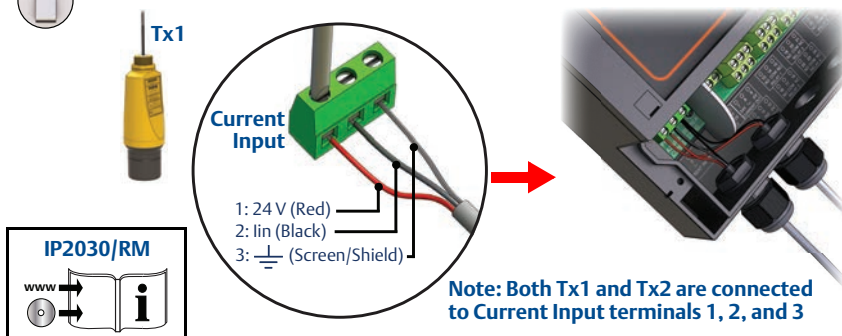


- b. Power on, and respond to on-screen prompts until a measurement is displayed.

4. Re-connect the *first* HART transmitter (**to a MCU902 only**):



- a. Connect the first transmitter again (do not disconnect the second transmitter).



- b. Power on, and respond to on-screen prompts until a measurement is displayed.

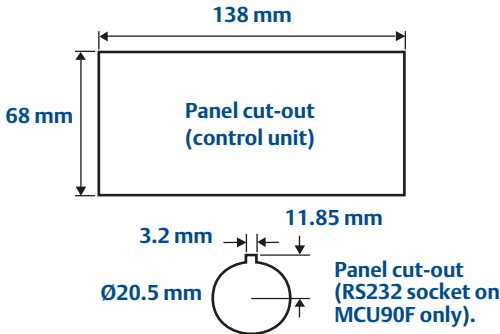
Installation: Panel-mount Unit

Mounting the control unit in a panel

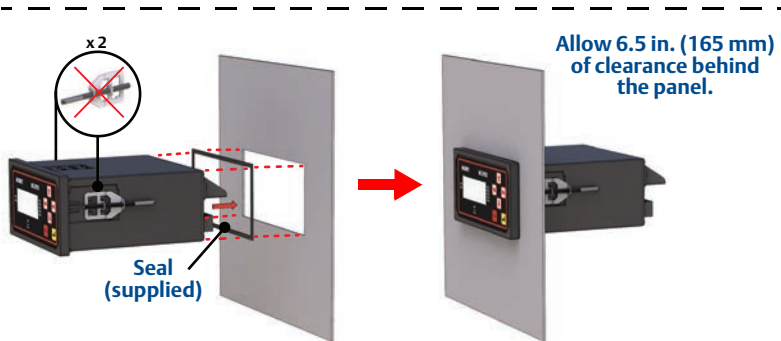
- The **panel-mount** control unit is a standard DIN size, designed for direct mounting in a control room panel. It requires a weatherproof environment



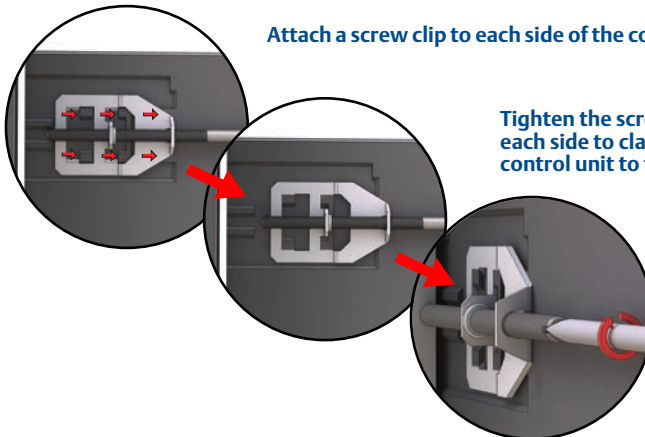
For safety, the panel should be strong enough to support the 1.2 kg (mains power) or 0.8 kg (DC power) mass of the unit.



The panel (not supplied) can have a thickness of 1.5 to 10 mm.



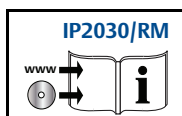
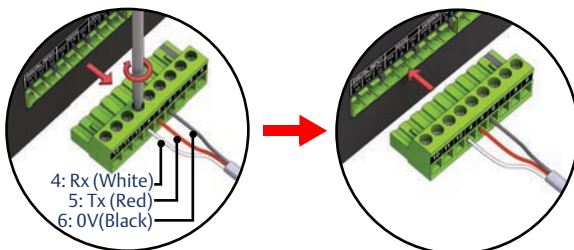
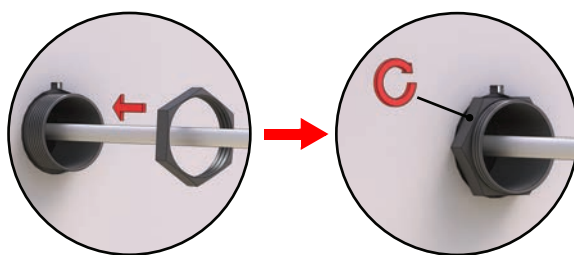
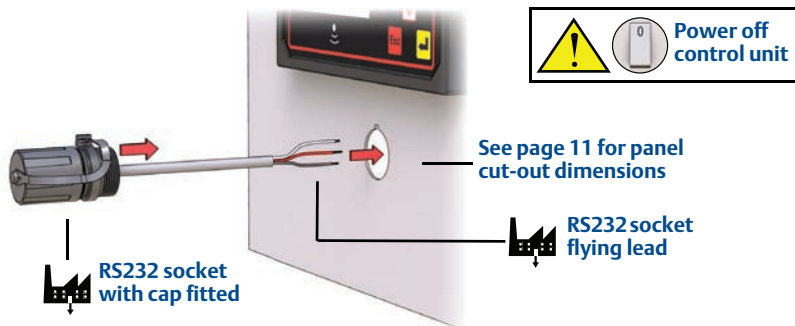
Attach a screw clip to each side of the control unit.



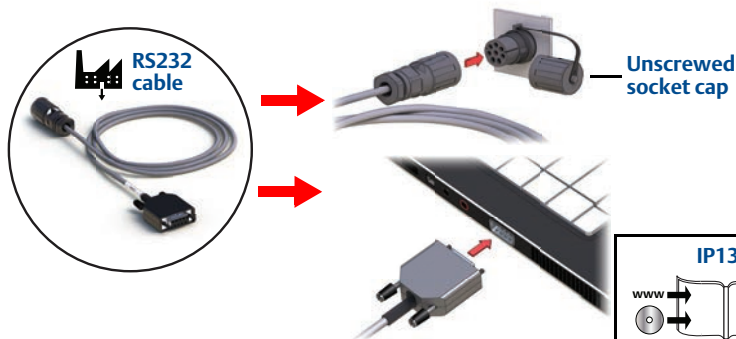
Tighten the screw on each side to clamp the control unit to the panel.

Make the electrical connections

- A logged data download (RS232) socket is supplied with the Mobrey MCU90F panel-mount unit. (The socket is factory-fitted and pre-wired on wall-mount units)



- When there is data to be downloaded using Mobrey LOG-VIEW or other software, connect the RS232 cable supplied with the socket

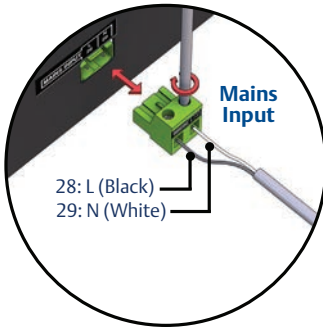


Panel-mount power supply connections

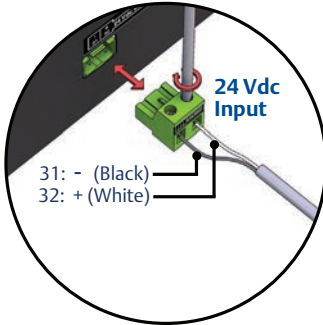
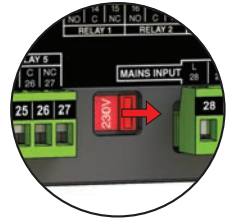
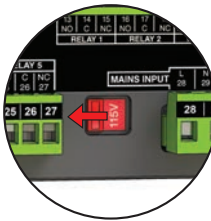
1. Connect the mains 115/230 Vac or 24 Vdc supply (depending on the control unit):



Always switch off the power when making these connections



On a mains-powered unit, set the voltage selection switch to 115 or 230 Vac



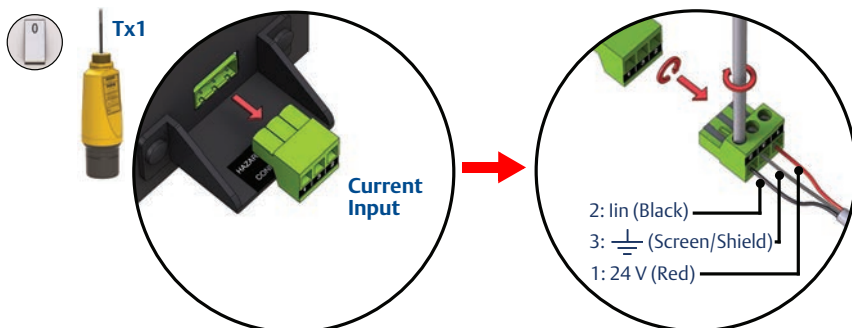
Terminal 30 must be connected to an Intrinsically Safe Earth/Ground if the transmitter (wired to Terminals 1 and 2) is in a hazardous area

Note

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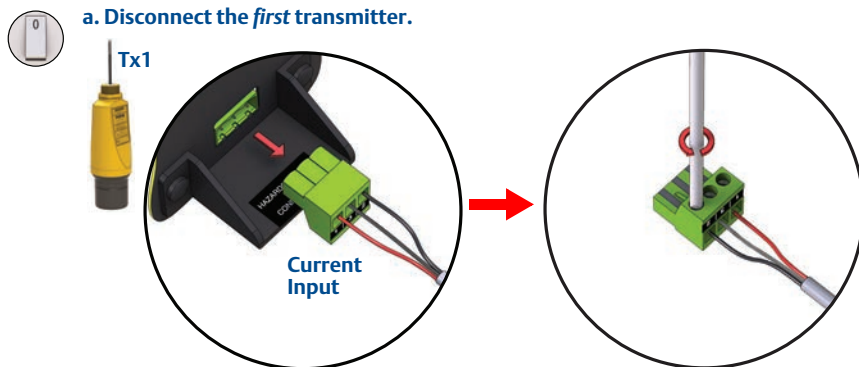
Panel-mount current input (transmitter) connections

1. Connect the *single* 4–20 mA or HART transmitter (to a MCU901 or MCU90F) or the *first* of two HART transmitters (to a MCU902 only):

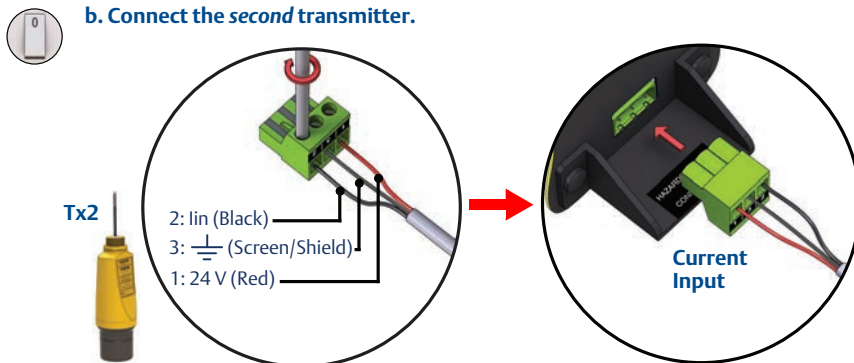


2. Power on, and respond to on-screen prompts until a measurement is displayed.
3. Connect the *second* HART transmitter (to a Mobrey MCU902 only):

a. Disconnect the *first* transmitter.

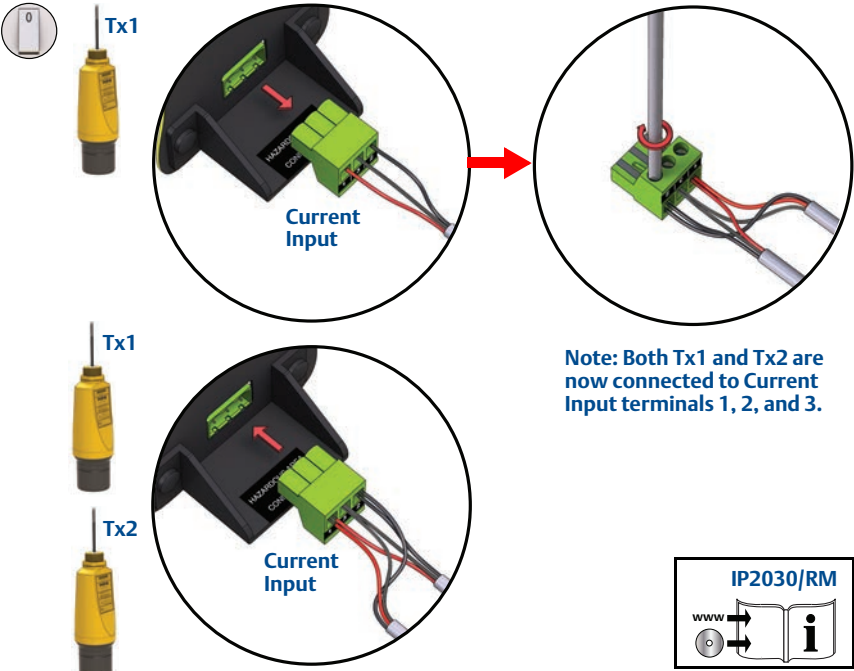


b. Connect the *second* transmitter.



- c. Power on, and respond to on-screen prompts until a measurement is displayed.

4. Re-connect the *first* HART transmitter (to a Mobrey MCU902 only):
- a. Connect the *first* transmitter again (do not disconnect the second transmitter).



- b. Power on, and respond to on-screen prompts until a measurement is displayed.

含有China RoHS管控物质超过最大浓度限值的部件型号列表 Mobrey MCU900
List of Mobrey MCU900 Parts with China RoHS Concentration above MCVs

部件名称 Part Name	有害物质 / Hazardous Substances					
	铅 Lead (Pb)	汞 Mercury (Hg)	镉 Cadmium (Cd)	六价铬 Hexavalent Chromium (Cr +6)	多溴联苯 Polybrominated biphenyls (PBB)	多溴联苯醚 Polybrominated diphenyl ethers (PBDE)
电子组件 Electronics Assembly	X	O	O	O	O	O
壳体组件 Housing Assembly	O	O	O	O	O	O
传感器组件 Sensor Assembly	O	O	O	O	O	O

本表格系依据SJ/T11364的规定而制作。
This table is proposed in accordance with the provision of SJ/T11364.

O: 意为该部件的所有均质材料中该有害物质的含量均低于GB/T 26572所规定的限量要求。
O: Indicate that said hazardous substance in all of the homogeneous materials for this part is below the limit requirement of GB/T 26572.

X: 意为在该部件所使用的均质材料里，至少有一类均质材料中该有害物质的含量高于GB/T 26572所规定的限量要求。
X: Indicate that said hazardous substance contained in at least one of the homogeneous materials used for this part is above the limit requirement of GB/T 26572.

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