

Intrinsically Safe Power Supply Unit ISS 900



OPERATING INSTRUCTIONS

Reliable Measurement of Gas

STATUS JANUARY 2016



Note:

Unfortunately, paperwork does not automatically update itself but technical developments are constantly being made. Therefore, we reserve the right to change the descriptions and statements contained in our operating instructions without prior notice. However, you can conveniently download the most recent version of this manual (and those of other devices) from our website www.rmg.com.

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DESCRIPTION OF THE ISS 900	1
Intrinsically safe power supply unit ISS 900	1
Typical configuration of the EC 912 with the ISS 900.....	2
Functions of the ISS 900	2
Internal structure of the ISS 900	3
Parametrization of the X2 interface as RS 232	4
Parametrization of the X2 interface as RS 422	4
Layout print of circuit board	5
SAFETY INSTRUCTIONS	6
Instructions for the installer	7
Marking	7
Use	7
Installation and commissioning in areas subject to explosion hazards	7
Commissioning	8
Servicing, maintenance and troubleshooting	8
Removal	8
ANNEX	9
EC type examination certificate	9

CONTENTS

Description of the ISS 900

Intrinsically safe power supply unit ISS 900

The EC 900 family includes four device variants of which the Ex zone 1 devices can be operated in conjunction with the intrinsically safe power supply unit (Intrinsically Safe Supply) ISS 900.

There are two devices of the EC 900 family which can be operated without a CU (CU = communication unit). If no DSfG-B function, no current output and thus, no CU are required, the devices EC 911 und EC 912 will be appropriate for Ex zone 1 applications. The EC 911 is a purely battery-operated device with a limited life of the battery. If the operator wants to read out data and communicate with the device frequently, an external power supply unit has to make up for the disadvantages of the battery. Here the ISS 900 can be used.

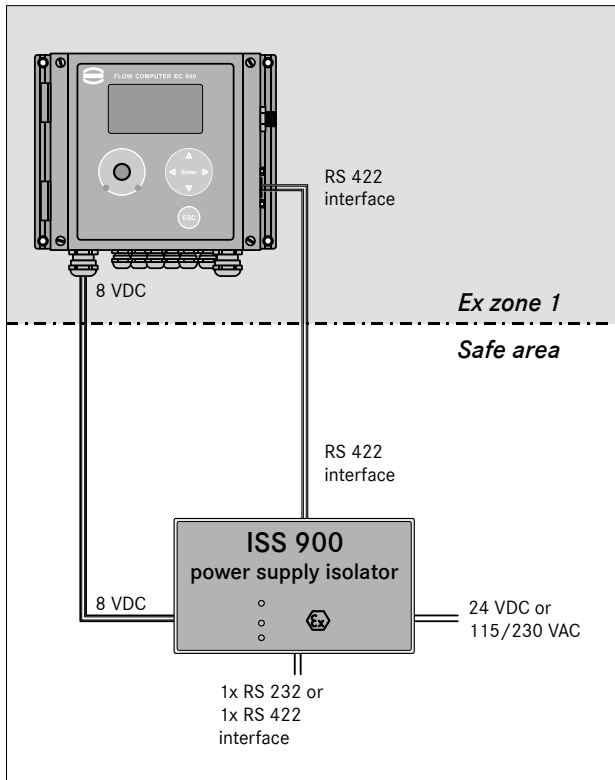
Then the typical configuration will be the following one:

Take an Ex zone 1 corrector = EC 911 = a battery-powered standalone device and connect it to an ISS 900. Then make a few changes of parameters and you'll have an EC 912.

EC 912 = externally powered device for Ex zone 1 **without CU, without DSfG-B, without current outputs, only MODBUS**

The ISS 900 includes only hardware circuits; there is no processor and no software.

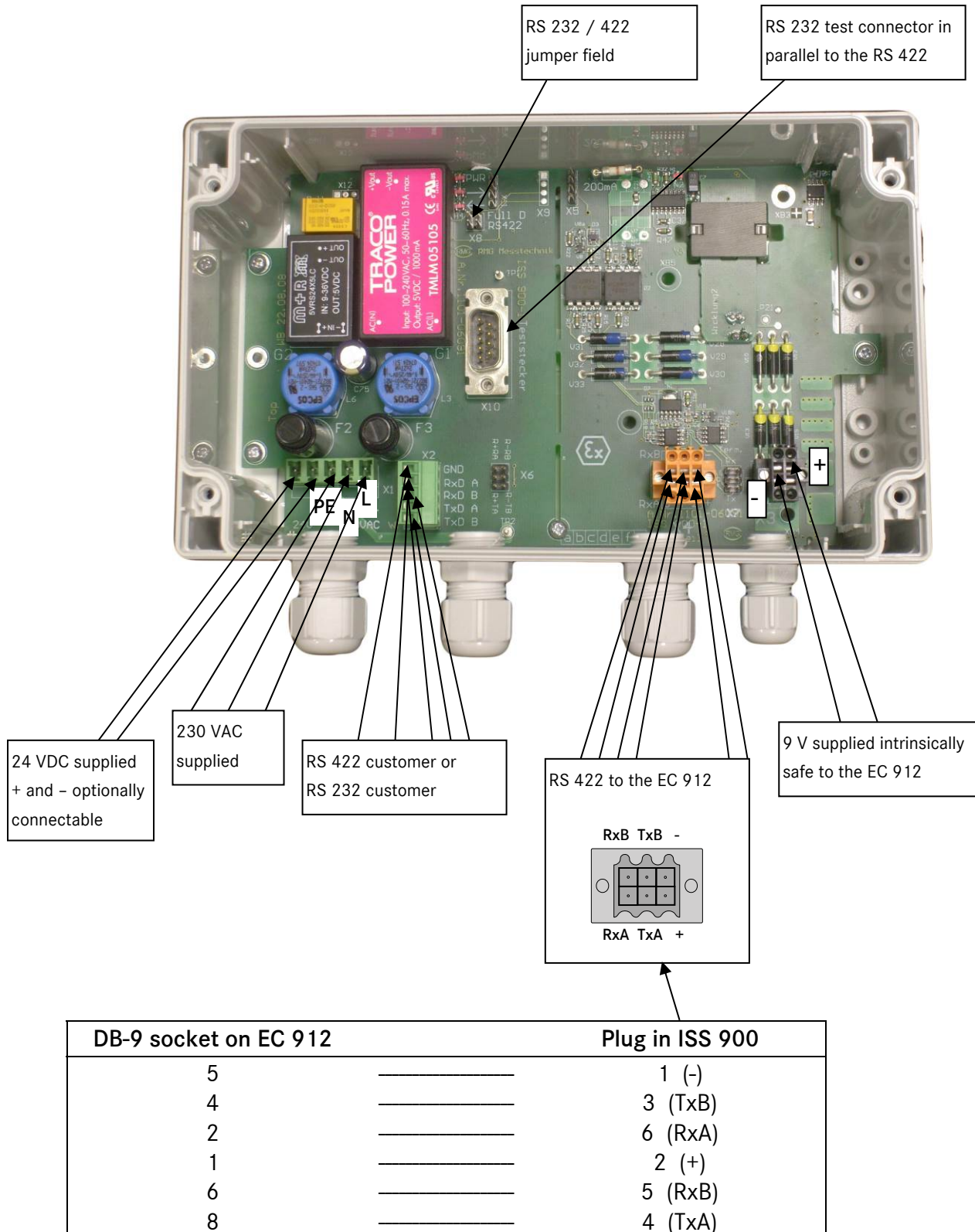
Typical configuration of the EC 912 with the ISS 900



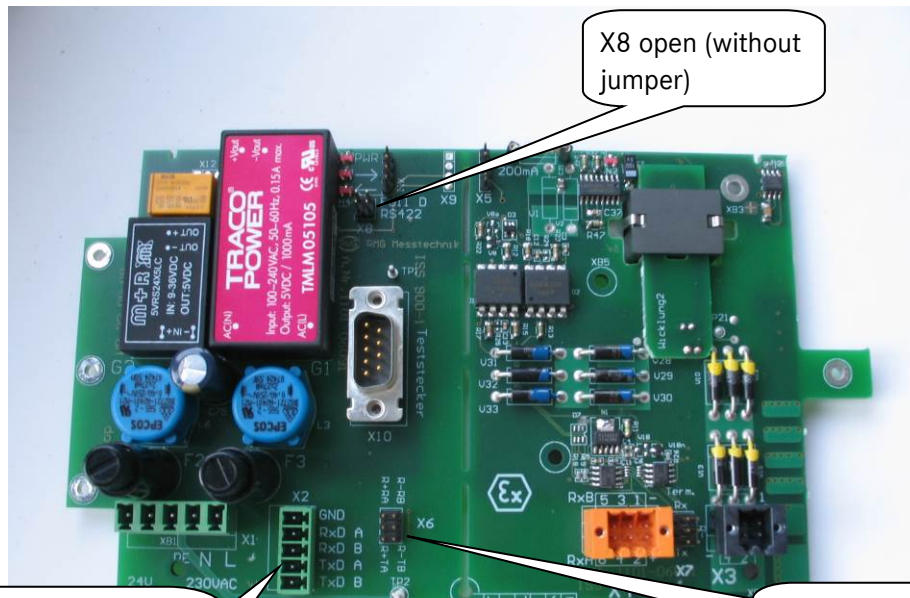
Functions of the ISS 900

1. Intrinsically safe power supply unit for using the EC 912 in Ex zone 1.
The power supply isolator supplies the EC 912 with 8 VDC in an explosion-protected way. Thus, the EC 912 can be operated in Ex zone 1. The built-in battery is retained and will start to operate as an emergency battery in the case of a power failure so that the corrector can keep on running even if the ISS 900 may be without power supply for some time.
2. Decoupling the COM 1 data interface.
On the power supply isolator module, there is a decoupling element for isolating the RS 422 data interface to the EC 912 in an explosion-protected way. The user can use the decoupled interface outside the Ex zone, in order to connect the device to external equipment, such as a PC, a PLC, telecontrol equipment, etc., using the MODBUS protocol. If the EC 912 is permanently supplied, this makes it possible, for example, to transmit running measured values.

Internal structure of the ISS 900



Parametrization of the X2 interface as RS 232

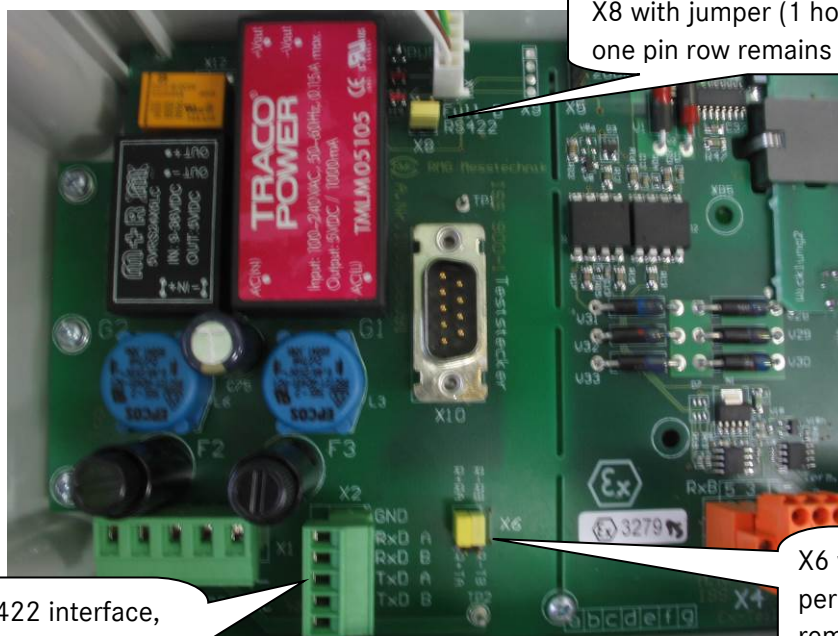


X8 open (without jumper)

X2 as RS232 / V24 interface, illustration without mating plug

X6 open (without jumper)

Parametrization of the X2 interface as RS 422

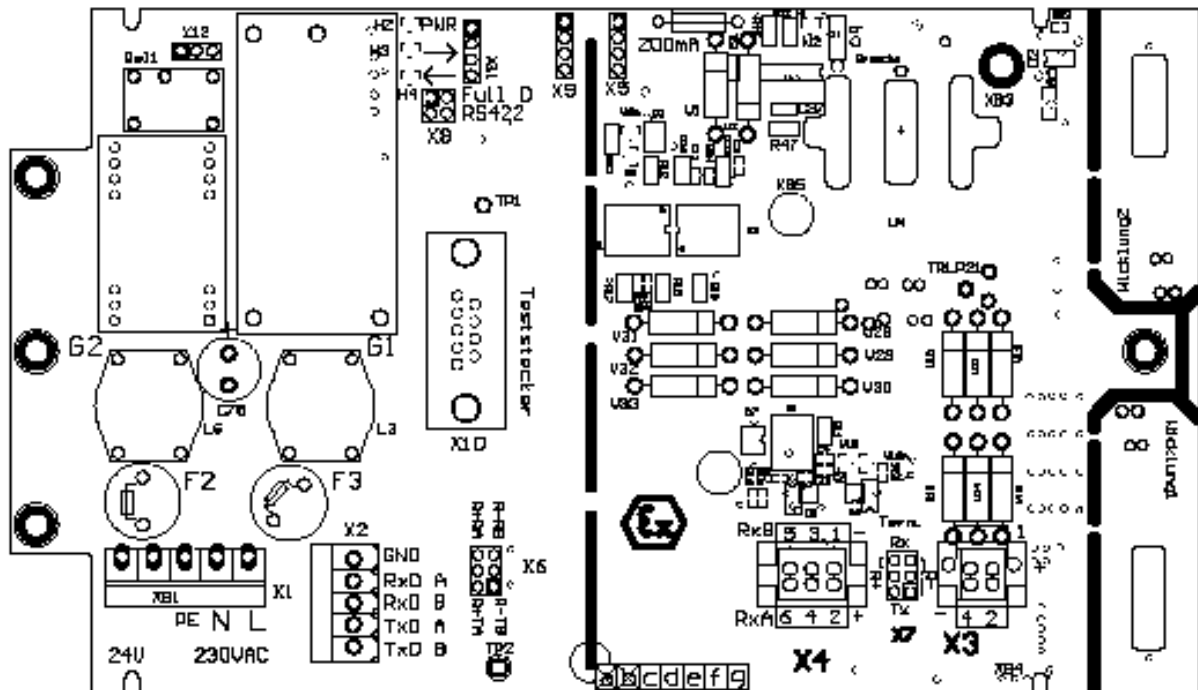


X8 with jumper (1 horizontal), one pin row remains free above

X2 as RS422 interface, illustration with mating plug

X6 with jumpers (2 perpendicular), one pin remains free below

Layout print of circuit board



Safety instructions

The ISS 900 power supply unit is used to power the EC 912 in an intrinsically safe way.

The ISS 900 complies with the currently available standards and regulations. However, failure to operate it properly may cause hazards.

Persons who install or operate the EC 912 PTZ corrector in areas subject to explosion hazards must be familiar with the currently applicable explosion protection standards and regulations.

Please follow the instructions below:



Danger of explosion

In the manual, this symbol warns you of an explosion hazard. Please follow the instructions given next to this symbol. As to the danger of explosion, please note the following in particular:

- The device for Ex zone 1 is intrinsically safe and may only be connected to certified intrinsically safe circuits.
- The approval of the device for use in areas subject to explosion hazards will expire if the device is changed impermissibly.
- Communication between the EC 912 and the ISS 900 is permissible only via the RS 422 interface.



Damage to property

In the manual, this symbol warns you of possible damage to property. The instructions given next to this symbol inform you about what you can do to avoid damage to the EC 912 PTZ corrector.

It is essential to observe the warning information in these operating instructions and the generally applicable safety rules.

No warranty claims can be asserted if there is unauthorized interference with the device!

Instructions for the installer

Marking

Type: ISS 900



II(2)G [Ex ia] IIC

CE 0158 TÜV 08 ATEX 554647

Ta = -25°C to +55°C

For data, see the EC type examination certificate (see annex).

Use

This module is intended for use in conjunction with the EC 900 and/or CU 900. The module itself is used for electrical isolation of the interface signal and for power supply. The various intrinsically safe circuits are used to operate intrinsically safe field devices in areas subject to explosion hazards.

The applicable laws or regulations concerning the use or intended use of the device have to be complied with.

The data sheets of the ISS 900 include the electrical data of the EC type examination certificate and shall be deemed parts of the operating instructions.

Installation and commissioning in areas subject to explosion hazards

Installation and commissioning are to be carried out by specially trained and qualified staff only.

The device has been designed in accordance with the IP 66 degree of protection as per EN 60529. External heating up due to solar radiation or other sources of heat must be avoided.

The workmanship of the installation of the intrinsically safe circuits has to comply with the installation regulations in accordance with EN 60079-14.

When other intrinsically safe field devices are interconnected with the intrinsically safe circuits of the associated EC 900 devices, the relevant maximum values of the field devices and associated devices have to be observed with regard to explosion protection.

The EC certificate of conformity and/or EC type examination certificate have to be observed. It is of particular importance that the "Particular conditions" possibly contained therein are complied with.

Commissioning

Installation and commissioning are to be carried out by specially trained and qualified staff only.

For cabling, the applicable standards have to be observed.

The plug is to be installed properly on the appropriate mating socket and secured mechanically.

Operation is only permitted if the casing is completely closed.

Servicing, maintenance and troubleshooting

Devices which are operated in conjunction with areas subject to explosion hazards must not be changed. Any repairs of the equipment may only be carried out by specially trained and authorized qualified staff from RMG Messtechnik.

Removal

When removing the device, make sure that the sensor cable does not come into contact with other live parts.

Make sure that you take appropriate safety precautions.

Annex

EC type examination certificate

The EC type examination certificate **TÜV 08 ATEX 554647** as per Directive 94/9/EC shall apply to the **ISS 900** power supply isolator even if the latter is installed in the **CU 900** communication module.

Type of protection: II (2) G [Ex ia] IIC.