

Isolating Device for the EC 694 Type STS-N



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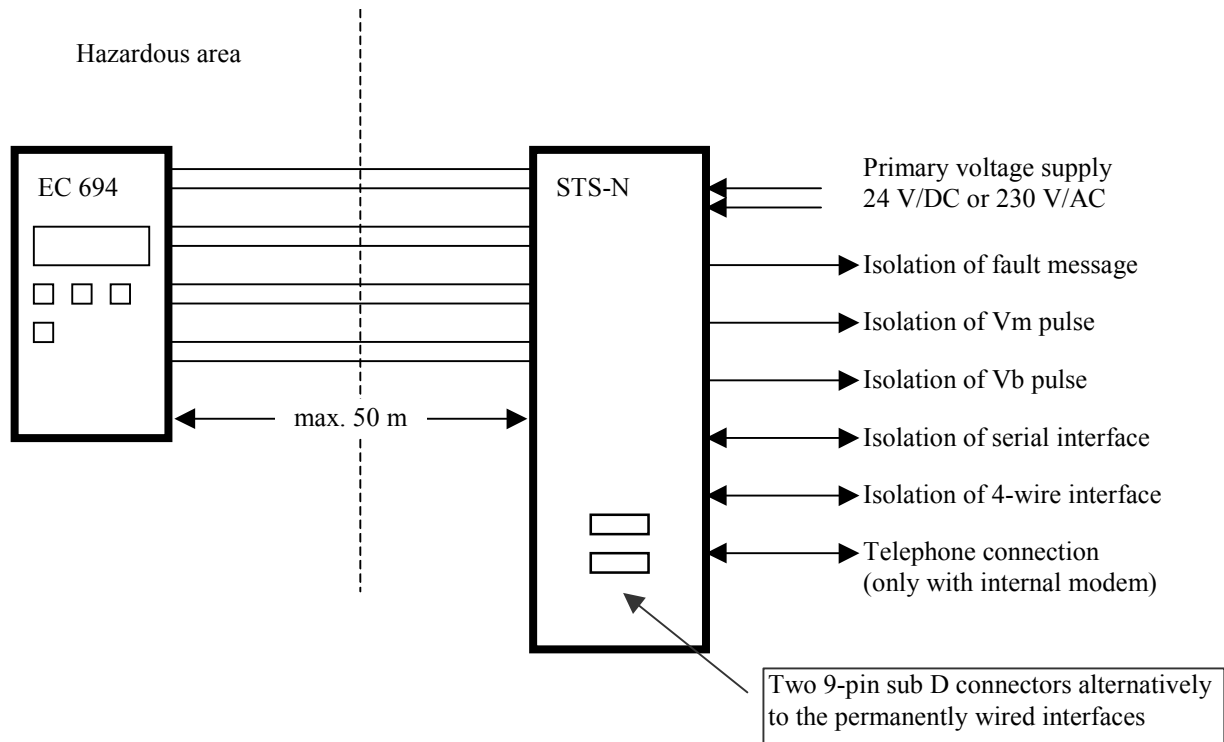
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Short Description

The STS-N device is used for intrinsically safe supply and signal isolation of pulses and interfaces in conjunction with the EC 694 volume corrector. The EC 694 is located in the area subject to explosion hazards, while the STS-N isolating device must be installed outside the hazardous area.



The following connections can be made at the STS-N on the **safe side**:

1. Supply voltage 230 V/AC or 24 V/DC
2. RS 232 data lines, either permanently wired or usable via sub D connectors on the front panel, but not both options at the same time !
3. Vm and Vb pulse outputs
4. Fixed network telephone
5. Fault message

The following connections at the STS-N on the **hazardous side** can be used for the EC 694:

1. Supply voltage 9.2 V/DC
2. 3-wire interface
3. 4-wire interface
4. Vm and Vb pulses
5. Fault message

The STS-N with its internal barriers replaces several external devices and reduces wiring work. In the configuration with a fixed network modem, the only thing which is still required is a connecting cable to the telephone socket. The modem has been permanently set at the required parameters of the EC 694 at the factory and will automatically switch to transparent mode when dialling up.

Communications with the EC 694 via the EC 694 protocol can be made for example using the PVP program or the Wieser central computer.

Data transmission for these communications is performed on the hazardous side via the 3-wire interface of the EC 694, and on the safe side via the serial interface or a built-in modem. If the modem is integrated into the isolating device, it occupies the serial interface which is therefore no longer available for other purposes!

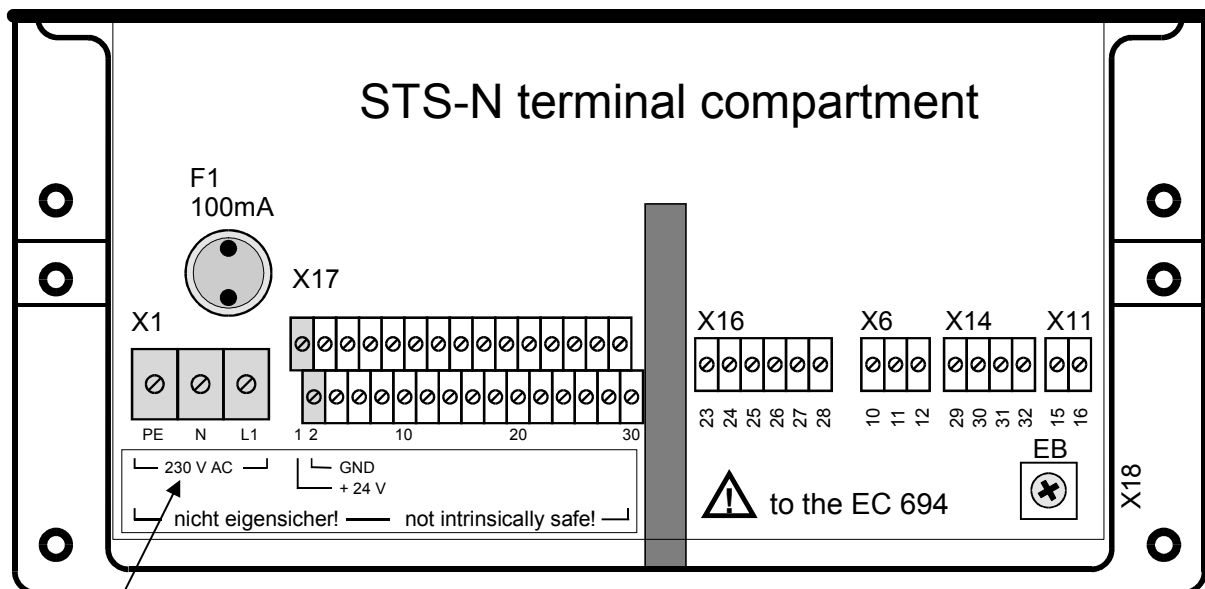
The upper port of the two front ports is the serial interface, whereas the port located below is the 4-wire interface.

Connections

Before connecting the cables make sure that the power supply is switched off!

The terminals are to be found in the lower third of the case: the terminals for the safe side are located on the left side, and the terminals for the hazardous side (EC 694) on the right side.

The cables in the terminal compartment have to be placed in direct lines (without loops) from the cable glands to the terminals and may not lie crosswise.



optionally 115 V/AC

The equipotential bonding (EB) terminal X 18 must be connected with the equipotential bonding of the area subject to explosion hazards (cross section $\geq 1.5 \text{ mm}^2$). Since the intrinsically safe circuits are electrically connected with the earth potential, equipotentiality must prevail throughout the whole arrangement of intrinsically safe circuits.

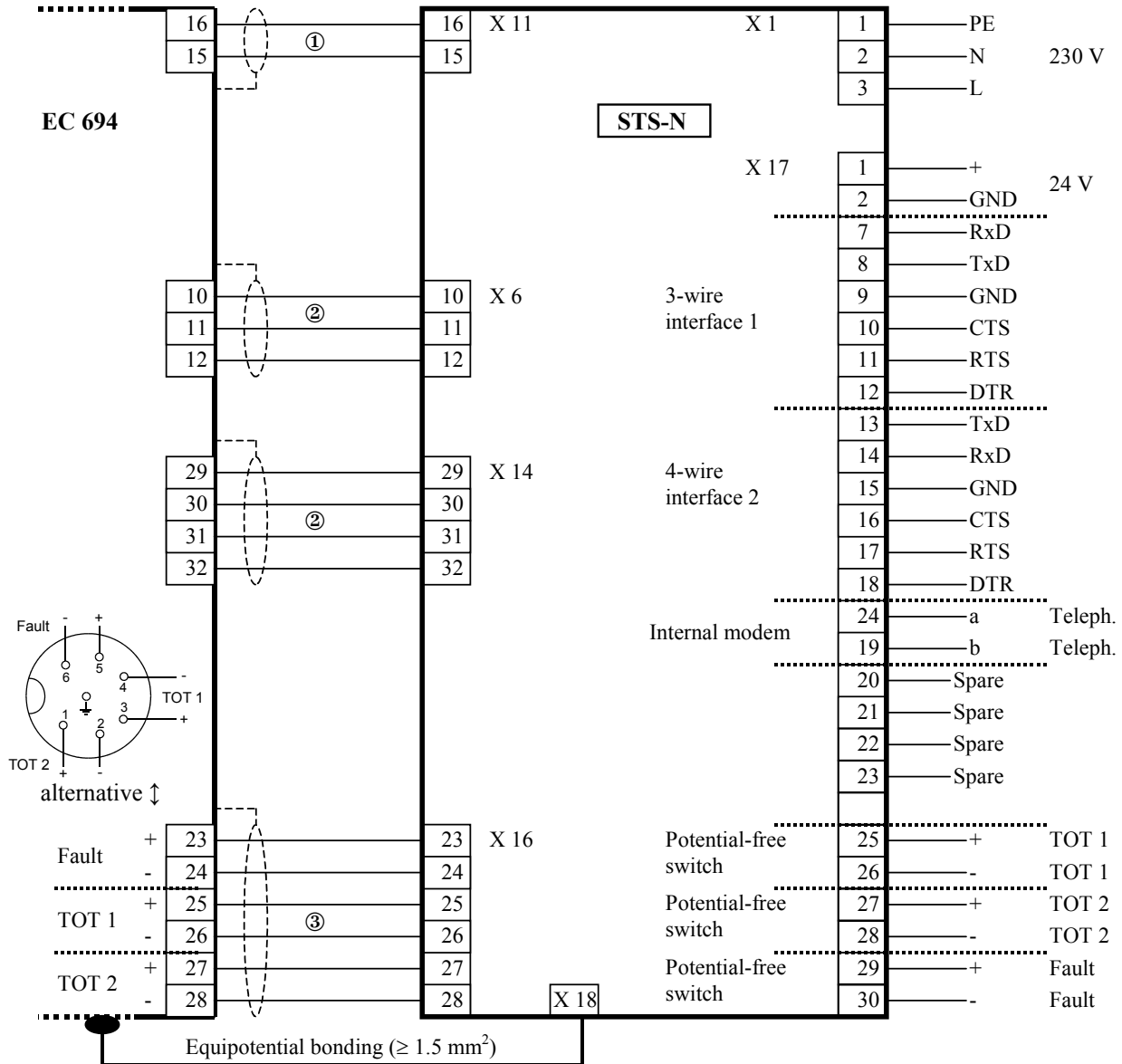
Diagram of connections:

The numbered terminals must be connected on the hazardous side on a 1:1 basis between the STS-N and the EC 694.

The shield has to be connected on both sides.

Cable types:

- ① LIYCY 2 x 0.5 blue
- ② LIYCY 2 x 2 x 0.25 blue
- ③ LIYCY 3 x 2 x 0.25 blue

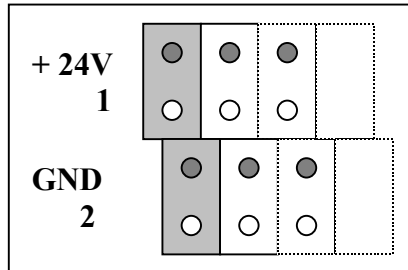


In addition to the terminals X 17 for the 3-wire and 4-wire interfaces, there are two sub D connectors located on the front panel. The terminals and the sub D connectors are wired in parallel; it is not possible to operate them at the same time (either permanent connection to the terminal or temporary connection to the front panel).

The terminals 1 and 2 (X17) are only suitable for the own power supply. The supply of other devices (e.g. EC 694) via these terminals is not possible.

Instruction for the terminal compartment (not intrinsically safe) when using the 24 V/DC supply voltage:

Connect the positive potential to X17, terminal 1 and GND to X 17, terminal 2 !



This figure corresponds to the additional adhesive label for the terminal compartment.

Functions of the LEDs on the front panel

V 24-1 or modem (if built-in)

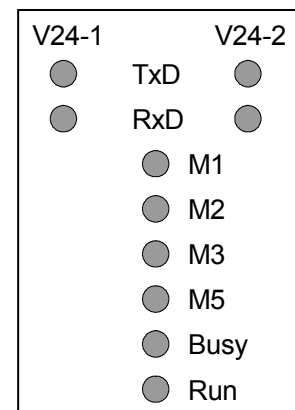
LED ↑ TxD Data transmission of interface 1; the EC 694 is sending data to the external connection. Normally, the LED is dark and flashes during data transmission.

LED ↑ RxD Data transmission of interface 1; the EC 694 is receiving data from the external connection. Normally, the LED is dark and flashes during data transmission.

V 24-2

LED ↑ TxD Data transmission of interface 2; the EC 694 is sending data to the external connection. Normally, the LED is dark and flashes during data transmission.

LED ↑ RxD Data transmission of interface 2; the EC 694 is receiving data from the external connection. Normally, the LED is dark and flashes during data transmission.



Only active with built-in modem:

LED ↑ M 1	DSR modem status	Data Set Ready
LED ↑ M 2	CTS modem status	Clear To Send
LED ↑ M 3	RI modem status	Ring Indicator
LED ↑ M 5	DCD modem status	Data Carrier Detected
LED ↑ Busy	Modem status	Line is busy

Operating voltage

LED ↑ Run Display of operating voltage: 230 V/AC or 24 V/DC is connected

Technical Data

Technical data of the hazardous side:

The intrinsically safe circuits are electrically connected with the not intrinsically safe circuits and the equipotential bonding. The numbered terminals must be connected on the hazardous side on a 1:1 basis between the STS-N and the EC 694.

Supply voltage of the intrinsic safety type of protection EEx ia IIC/IIB or EEx ib IIC/IIB
9.2 V at terminal block X 11, terminals 15 [GND] and 16 [+]

3-wire interface of the intrinsic safety type of protection EEx ia IIC/IIB or EEx ib IIC/IIB
at terminal block X 6, terminals 10, 11, 12

4-wire interface of the intrinsic safety type of protection EEx ia IIC/IIB or EEx ib IIC/IIB
at terminal block X 14, terminals 29, 30, 31, 32

Pulse outputs of the intrinsic safety type of protection EEx ia IIC/IIB or EEx ib IIC/IIB
at terminal block X 16, terminals 23, 24, 25, 26, 27, 28

Technical data of the safe side:

Voltage supply	230 V/AC, $\pm 10\%$ at separate terminal block X 1	1[PE], 2 [N], 3[L]
Voltage supply	24 V/DC, 18 V to 33 V at terminal block X 17	1[+], 2[GND]

Data lines at terminal block X 17

Serial interface V24, 3 wires ± 12 V, 10 mA
at terminals 7 [RxD], 8 [TxD], 9 [GND], 10 [CTS], 11 [RTS], 12 [DTR]

Serial interface V24, 4 wires ± 12 V, 10 mA
at terminals 13 [TxD], 14 [RxD], 15 [GND], 16 [CTS], 17 [RTS], 18 [DTR]

Pulse outputs at terminal block X 17

V_m, V_b and Fault with max. 33 V / 200 mA
at terminals 25 [+], 26 [-], 27 [+], 28 [-], 29 [+], 30 [-]

Spare at terminal block X 17

Special assignments with max. 33 V / 200 mA at terminals 20 to 23

Modem connection at terminal block X 17

Fixed network modem with max. 60 V / 600 Ω at terminals 19 [b], 24 [a]

Internal modem:

Type Alcatel LOGEM 832

PCB integrated into the STS-N, no separate enclosure. If the modem is integrated into the isolating device, it occupies the serial interface (3-wire interface) which is therefore no longer available for other purposes.

Hole spacing

