

## Characteristics:

### General Description:

The single and dual channel Eurocard Repeater Power Supply, E1015 S and E1015 D, provides a fully floating dc supply for energizing conventional 2-wire 4-20 mA Transmitter, or separately powered 3, 4-wire 4-20, 0-20 mA Transmitter located in Hazardous Area, and repeats the current in floating circuit to drive a Safe Area load.

The circuit allows bi-directional communication signals, for Smart Transmitters.

### Function:

1 or 2 channels I.S. analog input for 2 wire loop powered or separately powered Smart Transmitters, provides 3 port isolation (input/output/supply) and current (source or sink) or voltage output signal.

### Signalling LED:

Power supply indication UB (green).

### Field Configurability:

mA (source or sink) or V output signal.

### Smart comm. Freq. Band:

0.5 to 40 KHz within 3 dB (Hart and higher frequency protocols).

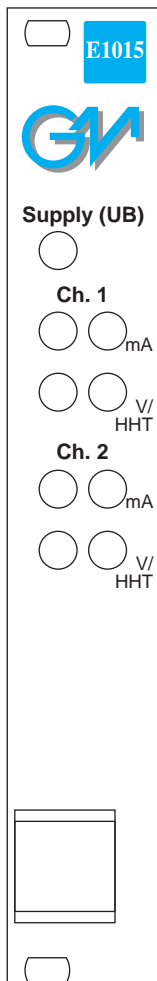
### Test Points:

Analog output signal and Smart communication.

### EMC:

Fully compliant with CE marking applicable requirements (tolerant to a 20 ms line interruption).

## Front Panel:



- 4-20 or 0-20 mA Input, Output Signal.
- Wide Band Smart Communication, Hart compatible.
- Three port isolation, Input/Output/Supply.
- High Accuracy.
- EMC Compatibility to EN50081-2, EN61000-4-2.
- Tolerant to a 20 ms line interruption and Inrush current limited.
- Input and Output short circuit proof.
- Field programmability by DIP Switch.
- ATEX Certification.
- High Reliability, SMD components.
- High Density, two channels per card.
- Simplified installation using standard Eurocard plug-in connector.
- Pin compatible with Stahl model 9601/25-22-11.
- 250 Vrms max. voltage applied to the instruments associated with barrier.

## Technical Data:

### Supply (UB):

24 V nom (20 to 30 V) reverse polarity protected ripple within voltage limits  $\leq 5$  Vpp.

**Current consumption @ 24 V:** 150 mA for 2 channels E1015 D, 75 mA for 1 channel E1015 S, at 20 mA output per channel.

**Max. power consumption:** 3.60 W for 2 channels, 2.00 W for 1 channel.

### Isolation (Test Voltage):

I.S. In/Out 1.5 KV; I.S. In/Supply 1.5 KV; I.S. In/I.S. In 500 V; Out/Out 500 V; Out/Supply 500 V.

### Input:

0/4 to 20 mA (separately powered input, voltage drop  $\leq 1$  V) or 4 to 20 mA (2 wire Tx current limited at  $\approx 23$  mA).

### Transmitter line voltage:

$\geq 15$  V at 20 mA with max. 20 mV rms ripple on 0.5 to 40 KHz frequency band.

### Output:

0/4 to 20 mA, on max. 600  $\Omega$  load in source mode; V min. 5 V at 0  $\Omega$  load V max. 30 V in sink mode, current limited at  $\approx 23$  mA or 0/1 to 5 V on internal 250  $\Omega$  shunt or 0/2 to 10 V on internal 500  $\Omega$  shunt.

**Response time:** 50 ms (10 to 90 % step change).

**Output ripple:**  $\leq 20$  mV rms on 250  $\Omega$  communication load on 0.5 to 40 KHz band.

**Frequency response:** 0.5 to 40 KHz bidirectional within 3 dB (Hart and higher freq. protocols).

**mA Test points:** Ammeters with  $R_i \leq 10$   $\Omega$ .

**V/HHT Test points:** Voltmeter with  $R_i \geq 1$  M $\Omega$  or Hand Held Terminal for communication.

### Performance:

Ref. Conditions 24 V supply, 250  $\Omega$  load,  $23 \pm 1$   $^{\circ}$ C ambient temp.

**Calibration accuracy:**  $\leq \pm 0.1$  % of full scale.

**Linearity error:**  $\leq \pm 0.1$  % of full scale.

**Supply voltage influence:**  $\leq \pm 0.05$  % of full scale for a min to max supply voltage change.

**Load influence:**  $\leq \pm 0.05$  % of full scale for a 0 to 100 % load resistance change.

**Temperature influence:**  $\leq \pm 0.01$  % on zero and span for a 1  $^{\circ}$ C change.

### Compatibility:

**CE** CE mark compliant, conforms to 94/9/EC Atex Directive and to 89/336/CEE EMC Directive.

### Environmental conditions:

**Operating:** Temperature limits -20 to + 60  $^{\circ}$ C, relative humidity max 90 % non condensing, up to 35  $^{\circ}$ C.

**Storage:** Temperature limits - 40 to + 80  $^{\circ}$ C.

### Safety Description:

**Ex** II (1) G D [EEEx ia] IIC associated electrical apparatus.

Uo/Voc = 22.63 V, Io/Isc = 93 mA, Po/Po = 600 mW at terminals d32-d30 and z32-z30 (type E1015).

Uo/Voc = 27.00 V, Io/Isc = 93 mA, Po/Po = 628 mW at terminals d32-d30 and z32-z30 (type E1015-013).

Uo/Voc = 1.2 V, Io/Isc = 50 mA, Po/Po = 25 mW at terminals d30-d28 and z30-z28 (non energy storing apparatus connection). Um = 250 Vrms, -20  $^{\circ}$ C  $\leq$  Ta  $\leq$  60 $^{\circ}$ .

**Approvals:** DMT 01 ATEX E 042 X conforms to EN50014, EN50020.

### Mechanical:

Eurocard 100 x 160 mm with 4TE, 3 HE front panel mountable in 19" rack, any installation position.

**Weight:** about 165 g E1015 D, 130 g E1015 S.

**Connection:** DIN 41612 Form F 48 pole male connector rows b, d, z. Requires a female mating connector.

**Location:** Safe Area / Non Hazardous Locations installation.

**Protection class:** IP 20 when installed in 19" rack.

