

# **e-Gauge**

## Technical Datasheet

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**E-Gauge<sup>®</sup> Technical Data Sheet**

UK Patent No. GB2427030

Worldwide Patents Pending

**1. Input**

1. Measuring limits : 180.0° to 179.9° programmable ( 0.0° at 12 o'clock)

**2. System Accuracy**<sup>1 2 3</sup>2.1 Linearity : +/- 2.0% FS using 1<sup>4</sup> point (2 point<sup>5</sup>) calibration  
+/- 1.0% FS using 4 point calibration  
+/- 0.5% FS using 9 point calibration

2.2 Repeatability : &lt; +/- 0.2% FS

2.3 Resolution : &lt; 0.1% FS

**3. Mechanical & Fitting Requirements**3.1. Non concentricity<sup>6</sup> : max 1mm3.2. Gap<sup>7</sup> : max 4mm**4. Electrical Interface**<sup>8</sup>

4. Connections : 1.5m flexible cable, bare wire ends, 8 x AWG 24 tin-plated stranded copper wire

4.2. Insulation : &gt; 100 MΩ at 250V DC

**5. Power Supply**

5.1. Supply voltage : 24V DC nominal, operating range 8 to 28V DC

5.2. Reverse polarity protection: Yes, -28V DC max

5.3. Supply current : 50 mA max

1 - Specified accuracy is guaranteed only when the e-Gauge is fitted correctly to the gauge (see mechanical requirements)

2 - Excluding accuracy of the gauge (mechanical assembly)

3 - Including accuracy of the current output

4 - Calibration of zero position only

5 - Calibration of zero position and 100% FS is required for gauges with different scale than 270°

6 - Maximum non concentricity between the target PCB fitted on the pointer and the sensor PCB fitted in the gauge windows

7 - Maximum face to face distance between the bottom side of sensor and the top side of target PCB

8 - See connection diagram for more details

**6. Analogue Output**

6.1. Signal span :	4mA to 20mA (or 20mA to 4mA) programmable
6.2. Characteristic :	Linear or customized with max. 20 points
6.3. Error output :	3mA default, programmable between 2mA to 4mA
6.4. Output resolution :	12 bit, 5uA steps
6.5. Output accuracy :	< 0.1% FS (4mA to 20mA)
6.6. Load impedance :	$RL [k\Omega] \leq (VPSU - 8) / 20$

**7. Digital Outputs**

7.1. Type :	2 x Open Collector output (capable to drive relays, PLC inputs)
7.2. Output function :	NO, NC contact or OFF with programmable triggering position and hysteresis
7.3 Operating voltage :	+28V DC max
7.4 Output current :	50mA max. continuously, with over current and short protection

**8. Transitional Characteristics**

8.1 Switch-on time :	< 1 sec
8.2. Response time :	0.1 sec default, two programmable response times between 0.01 sec and 20.0 sec (0.01 sec steps)

**9. Environmental Conditions**

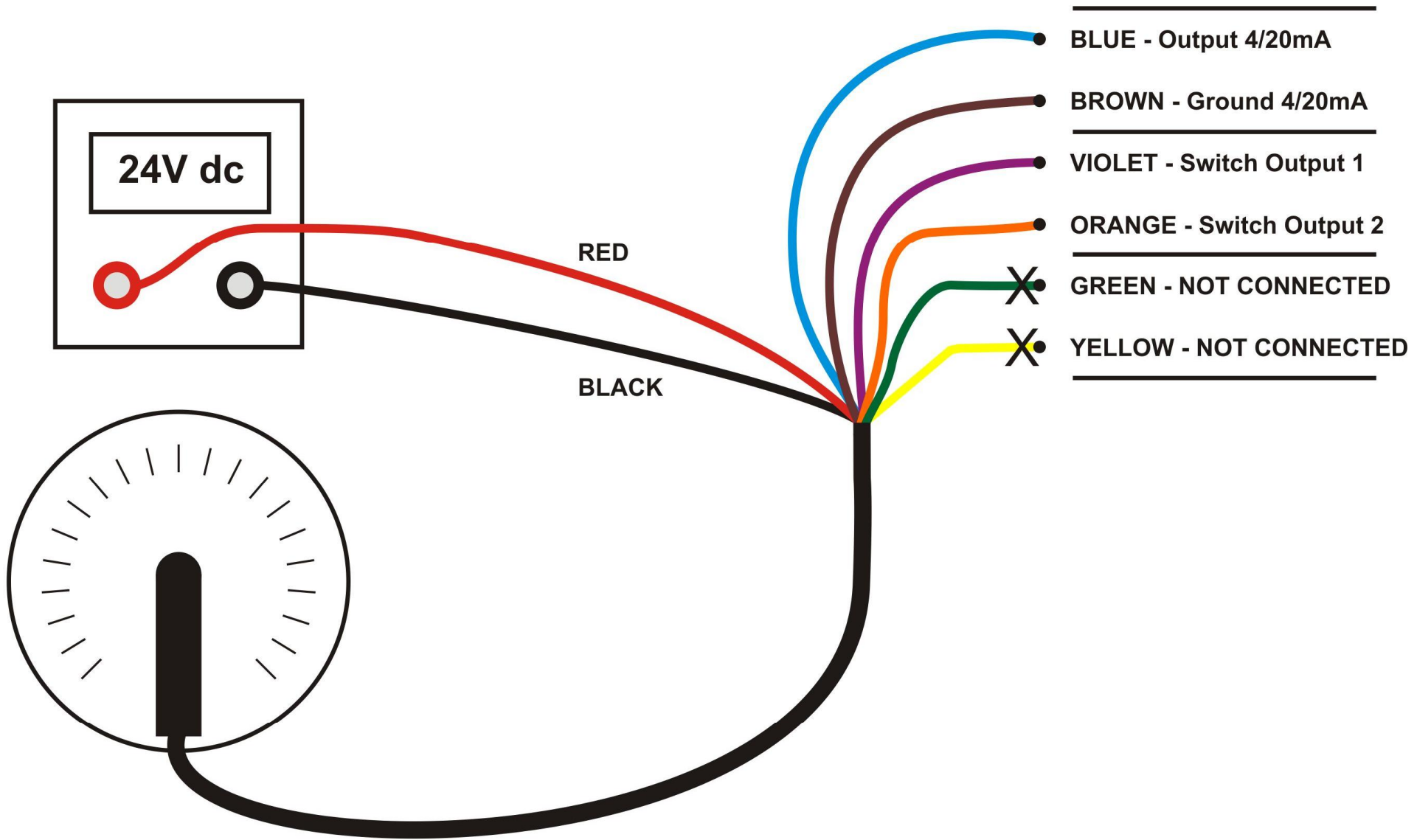
9.1. Storage temperature :	-40°C to +85°C
9.2. Operating temperature :	-30°C to +85°C
9.3. Temperature stability :	+/- 0.01% FS (4..20mA) / 1°C from 0°C to +50°C
9.4. Protection class - target :	IP68 (no functional degradation with long term submersion in water or glycerine)
9.5. Protection class - electronics :	IP55

**10. EMC Data**

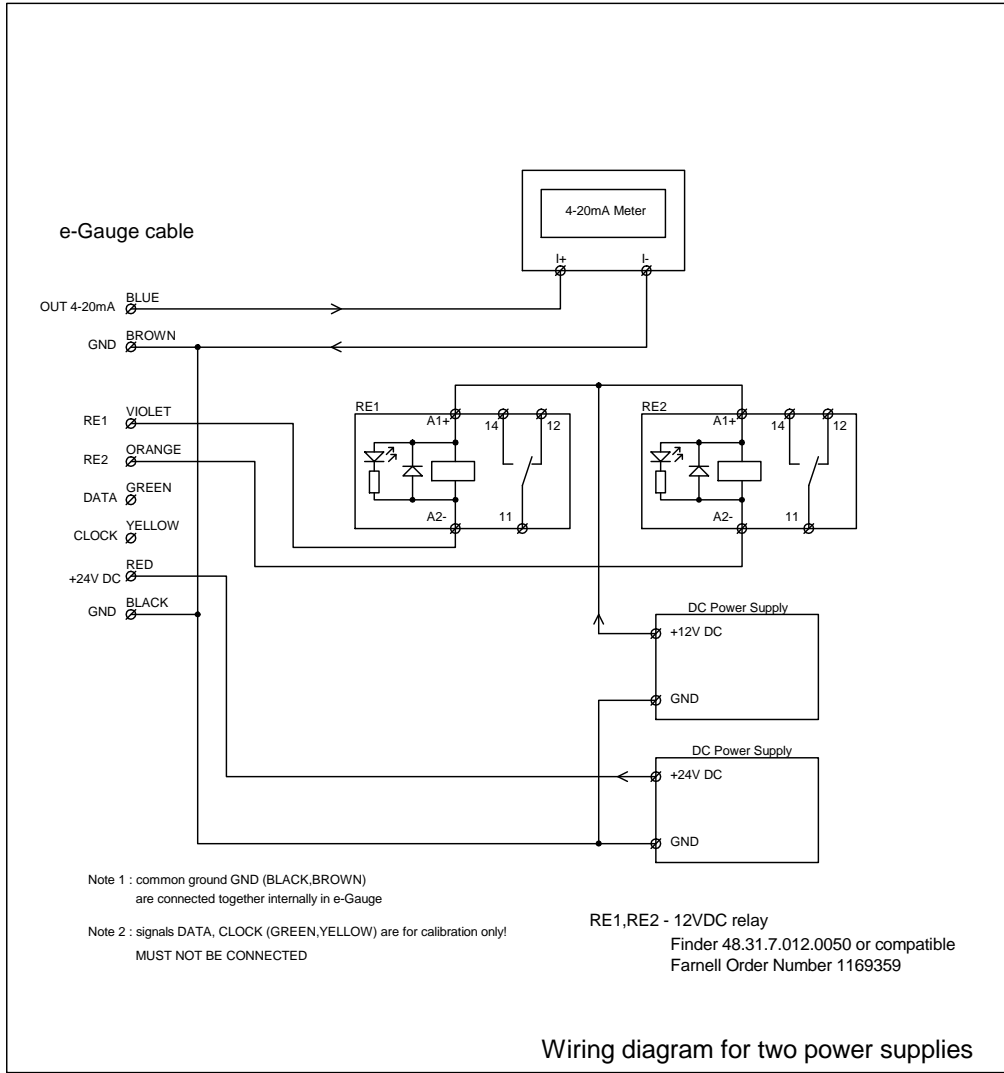
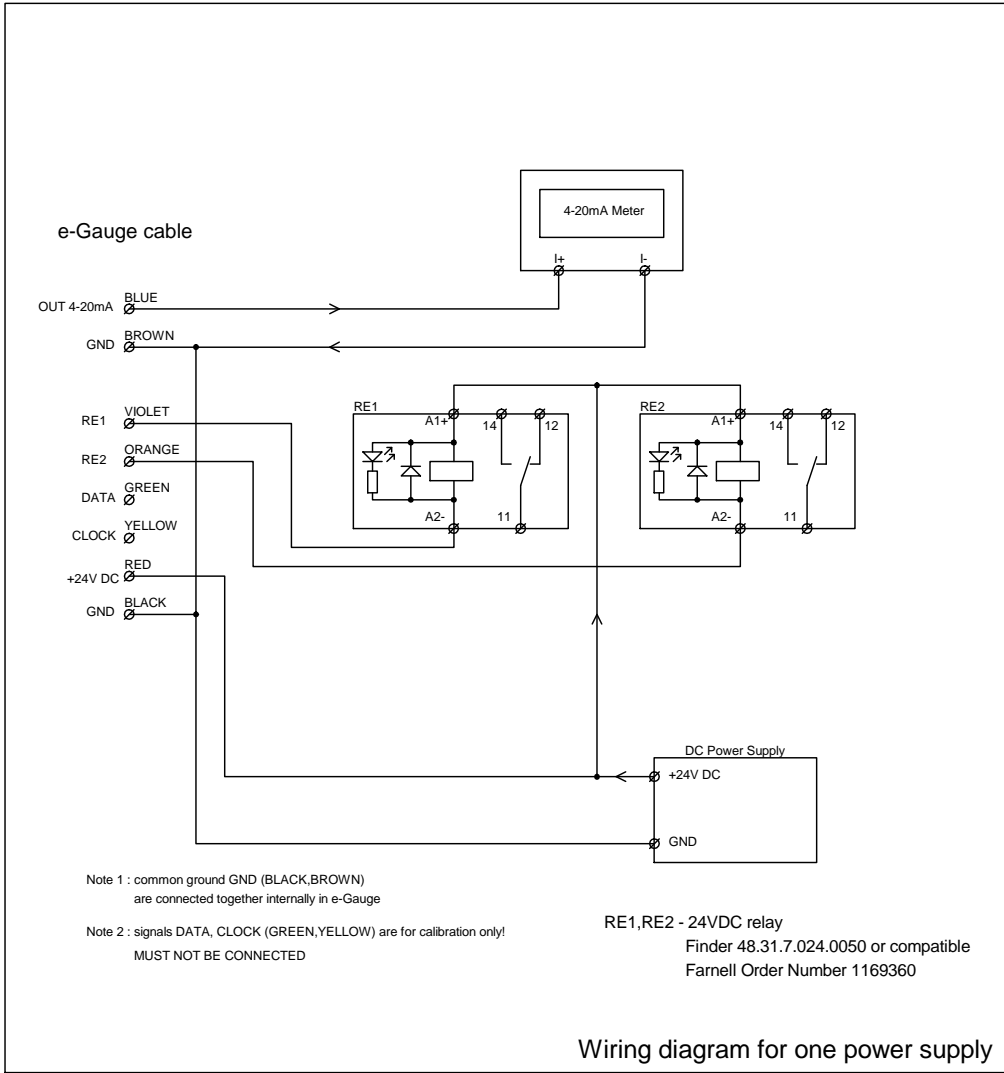
- 10.1. EMC emissions : comply with EN61326:1998
- 10.2. EMC immunity : comply with EN61326:1998
- 10.3. CE Marked

**11. Calibration**

- 11.1. Calibration interface : e-Gauge<sup>®</sup> calibrator plus PC software
- 11.2. Communication : 2 way serial
- 11.3. Electrical connections : 2 dedicated wires in the cable, must be left unconnected after calibration
- 11.4. Default settings :
- |                    |                                    |
|--------------------|------------------------------------|
| Input :            | 225.0° to 135.0°                   |
| Output :           | Linear 4 to 20mA, Error output 3mA |
| Time response :    | 0.1s                               |
| Digital output 1 : | NC, @25% FS, 5% FS hysteresis      |
| Digital output 2 : | NO, @75% FS, 5% FS hysteresis      |
- 11.5. Programmable user data : Serial Number, Unit type, and Date of Calibration



Dimensions:	mm	Material:	Various	TITLE:	<b>e-Gauge Wiring Diagram</b>	ISS	REVISION	DATE:	BY:	INSTRUMENTS TO INDUSTRY LTD
Scale:	N.T.S	TOL +/-				2		1/5/2008	SJR	Liverpool U.K. Tel: 0151 546 4943
Drawn:	SJR					3				Drawing No. e-Gauge 1011



Instruments To Industry

Changed By :		Drawn By : Stephen Roberts		TITLE : <b>ITI e-Gauge Wiring Diagram</b> Wiring diagram
21 November 2007	B	ST_EXT_0406_V6	1/1	