transmitter supply & input isolator

system 6000

D031
D032

product specification

Star features

- **Direct drive of 2-wire Transmitters.**
- **High output drive.**
- **High accuracy and stability.**
- **3 port galvanic isolation: input/power supply/output.**
- **Standard signal levels: 4–20mA current loop input, 0–10V or 1–5V output.**
- **Flexible input power supply.**
- **Direct DIN rail mounting.**
- **Clear plant and system labelling.**
- **Simplifies configuration of larger systems.**

Functional Description

The function of this instrument is to provide direct driving of 2-Wire Transmitters and to galvanically isolate the 4–20mA current signal that they produce. A high level buffered output is provided with a 0–10V or 1–5V option, with a 5mA current drive capability.

The high level of isolation between the power supply, output and input make this unit highly flexible in applications where grounded or non-grounded 2-Wire Transmitters are used

Although the instruments have 3-port isolation. only the current loop input is specifically designed to withstand 250V AC r.m.s. The isolation between the output and power supply is rated at 60V AC r.m.s. or 60V DC.

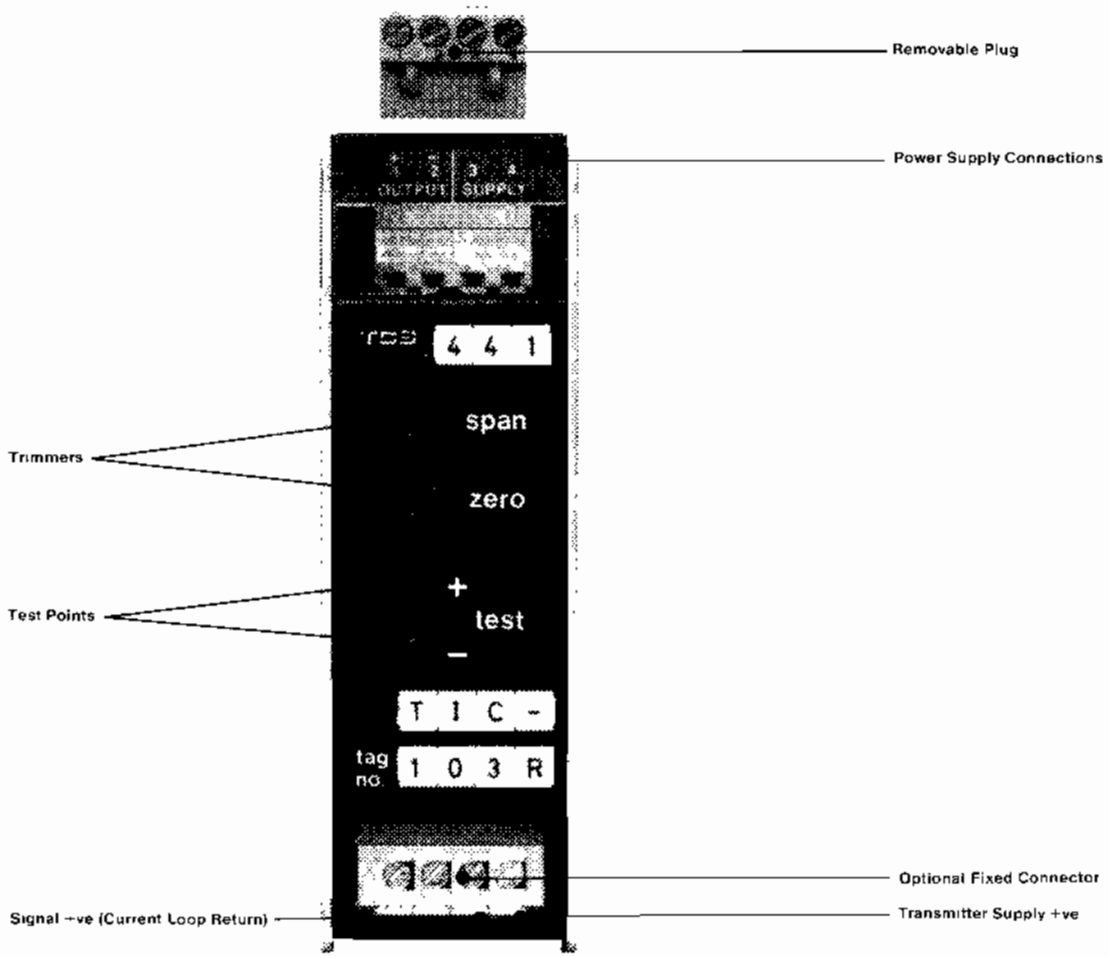
The 50ohm burden resistor in the bottom of the current loop makes the break protection inherently down-scale.

The transmitter power supply provides 25V in order to overcome barrier and lead resistance losses and have sufficient over-head to power a 2-Wire Transmitter at 15V.

The Transmitter power supply is current limited at 25mA to prevent damage occurring to the 2-Wire Transmitter or the instrument under fault conditions.

The internal power supply has been designed to accommodate a wide range of low voltage supplies which. nominally 24V, may be AC or DC.

Test points and access to Span and Zero trimmers are located on the front of the instrument. The test points carry the output signal protected by a 1kohm resistor.



External features

The power supply and output connections are made with the plug-in terminal block at the top of the instrument. The same connector system is available at the input for the plant connections (option PS). This allows withdrawal of unit without disturbing any site cabling. There is also an option available for a fixed terminal block (option TB) as shown in the diagram above. For routine maintenance, test points and trimmers are available through the fascia.

Connection and installation

The pin numbering is 1 to 4, left to right on the top connector and 5 to 8, left to right on the bottom.

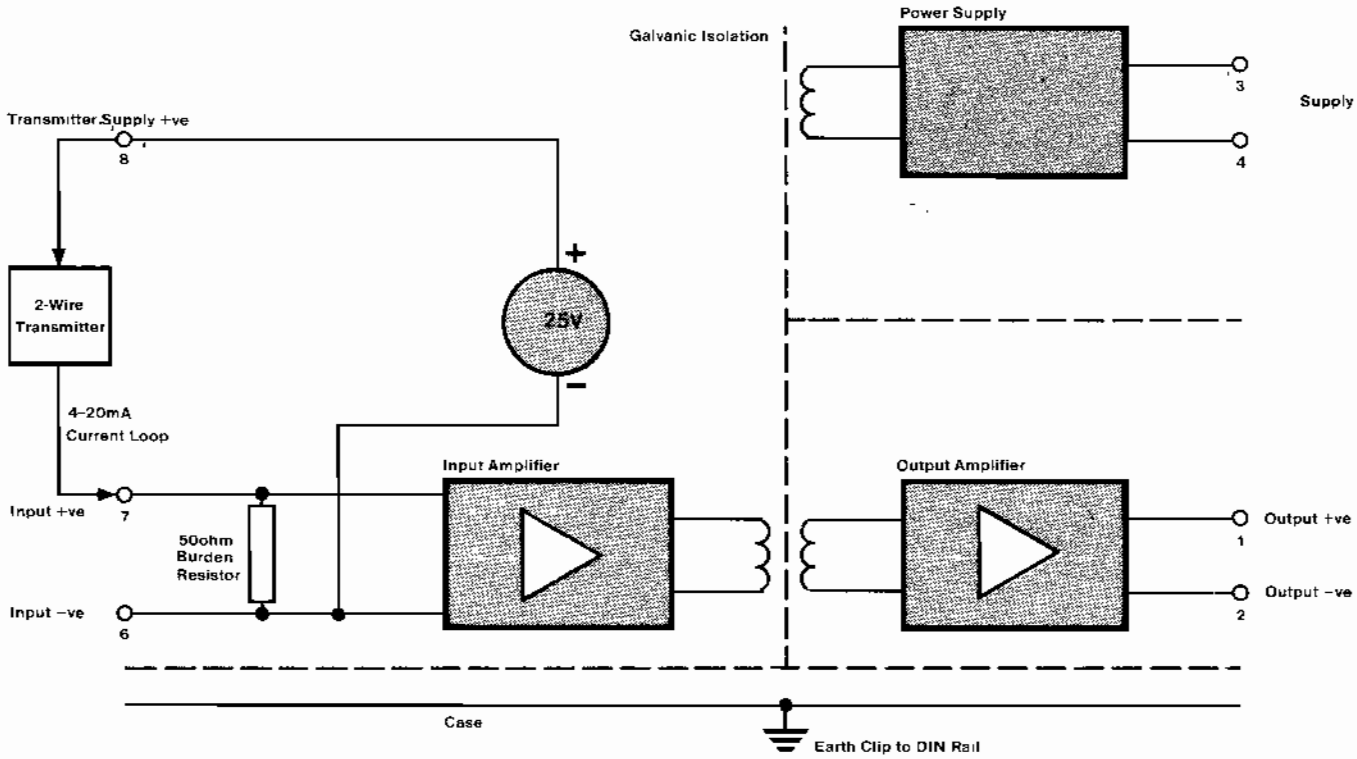
PIN	FUNCTION
1	Output +ve
2	Output −ve
3	Supply
4	Supply
5	Not used
6	I/P −ve
7	I/P +ve (Current loop return)
8	S +ve (Transmitter supply +ve)

The instrument may be powered from either an AC or DC source. The DC supply voltage is nominally 24V (20–35V). The AC supply voltage range is 18–26V AC r.m.s. Internally the power supply circuit is galvanically isolated from the other circuits. This means that power source may float, but it is recommended that the power circuit is earthed at a suitable point in the system, where this is possible.

The three circuits – power supply, input and output – are electrically isolated from each other and from the case, to simplify system design, by allowing the system designer to choose the points at which he defines the potential of these components of his system.

The internal operating voltages constitute no electric shock hazard. However, if the input is allowed to become live, care must be taken to earth the case. To facilitate this an earth spring is provided at the back of the box connecting onto the DIN rail. There are parts available which are specifically designed to provide an earth for the rail.

The mounting of the instrument is directly to the 'top hat' cross section DIN rail (type T35). To install, the unit is rolled down until it clips into position. To remove, a screw driver is used to release the spring catch.



Labelling

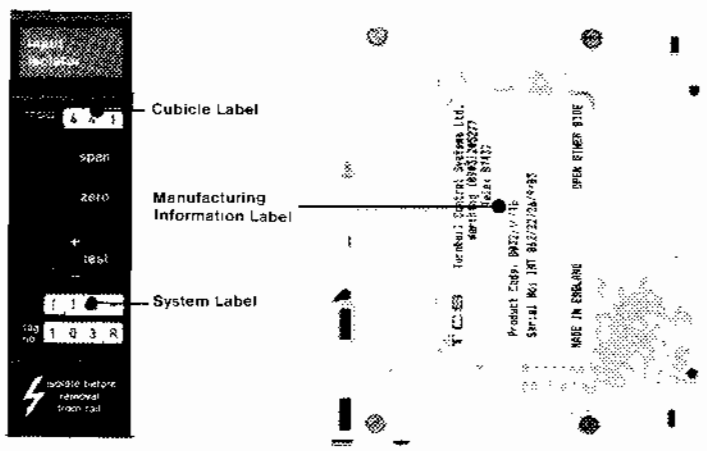
Two labelling areas are provided on the fascia. These labels are made up with Dekafix* markers. The use of this labelling system ensures that the label is legible and may be transferred if the instrument is replaced or the system reconfigured.

The upper label, three markers, is provided for system identification and will normally indicate the position of the instrument within the housing.

The lower label, eight markers, is provided for functional identification or tag number.

These positions will normally be supplied with blank markers but particular labelling may be specified within a system order.

There is a printed label on the side of the box with manufacturing information and the order code.



*Dekafix is a registered trade-name of Klippon Electricals Ltd.

Performance

Power supply

Range: (0–45°C ambient)	20–35V DC
(45–50°C ambient)	20–30V DC
(0–50°C ambient)	18–26V AC r.m.s.
Current drain	90mA max.

Input

Transmitter supply voltage	25V ±5%
Current limit	25mA
Internal burden resistor	50Ω

Output

Voltage span	1–5V or 0–10V
Drive capability	5mA max.

Isolation

INPUT to OUTPUT and POWER SUPPLY	250V AC r.m.s. 250V DC
OUTPUT to POWER SUPPLY	60V AC r m s 60V DC

Transfer

Overall accuracy	0 2% of span
Comprising · Stability	0 1%
Linearity	0 05%
Calibration	0 05% (from factory)
Common mode rejection (50Hz–5k Hz)	120 dB
Frequency response	20Hz
Operating temperature specification	0–50°C

Test points

Output voltage	0–10V or 1–5V

Front adjustments

Span	20% span
Offset	3% span

Ordering information

Description		Order code
Input Isolator		D0XX
INPUT	4–20mA with 25V transmitter supply	D03X
OUTPUT	1–5V	D031/V
	0–10V	D032/V
PLANT CONNECTOR		
	Plug and socket	PS
	Terminal block	TB

Example: D032/V/TB

Details

Overall dimensions in mm of housings.

Width	35
Height	110
Depth	97

TCS
Interface Products

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