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# IS106 Turbine Meter Pre-amplifier and R24 enclosure



## FEATURES

- ▶ ***Intrinsically Safe***
- ▶ ***Designed specifically for Turbine-Flow meters***
- ▶ ***Secure signal transmission over distances up to up to 1km***
- ▶ ***Variety of output signal options***
- ▶ ***Choice of IS barrier configurations***
- ▶ ***R24 Enclosure for environmental protection to IP66***

## IS106 PRE-AMPLIFIERS

The IS106 Pre-Amplifier is an Intrinsically Safe device specifically designed for use with Turbine-Flow Meters.

Its purpose is to amplify the mV a.c. signals from a typical flow meter pick-up coil and convert them into signals suitable for secure transmission to a remote flow computer which can be up to 1km away. The Pre-Amplifier has its frequency response tailored to the amplitude/frequency signals typical of most turbine meters.

A variety of output signal options cater for 2-wire current modulation, 3-wire voltage or open-collector outputs and finally a voltage differential driver similar to RS422. To complement these options several different IS barrier configurations using galvanic and earthed safety barriers are possible. An application note is available which details the range of output options and provides more technical information.

For Dual-Pulse applications in custody transfer metering installations, two of these Pre-Amplifiers will be required. The continuity of the pick-up coil across terminals 10 & 11 is constantly monitored. If the coil becomes o/c this puts the Q and Q\* outputs both low which allows the open circuit to be sensed by the remote flow computer.

## R24 ENCLOSURE

To assist in installations, the R24 Enclosure has been designed to enclose up to two Pre-Amplifiers, providing environmental protection of IP66. Alternative enclosures may be used without compromising the certification, provided they meet the IP20 minimum requirement of the of the IS106 certificate.

## IS106 SPECIFICATION

### Certification

Certification EEx ia IIC T4. Tamb max +60° C.  
SCS Certificate No. Ex 94C2089X.

### Safety Description

#### Terminals 1-6                      Terminals 9,10,11

U <sub>i</sub> = 28V	U <sub>o</sub> = 28V
I <sub>i</sub> = 254 mA	I <sub>o</sub> = 1.4 mA
P <sub>i</sub> = 1.2W	P <sub>o</sub> = 9.61mW
	L <sub>o</sub> = 21H
	C <sub>o</sub> = 83nF

### Electrical Parameters

<b>Supply Voltage</b>	= 28V max, 12V min.
<b>Quiescent current</b>	= 7mA with coil OK 4mA with o/c coil
<b>Signal pulse current</b>	= 7mA (ie 14mA total)
<b>Open Collector Voltage</b>	= 28V max
<b>Open Collector current</b>	= 50mA max
<b>Differential Q, Q*</b>	= 7V ±0.5V (unloaded).
<b>Input Impedance</b>	= 100KΩ
<b>Input signal at 5Hz</b>	= 80mV min
<b>Input signal at 1kHz</b>	= 180mV min
<b>Input signal at 5kHz</b>	= 500mV min

Input sensitivity increases 5 times with pins 7 & 8 linked.

### Mounting Assembly Details

#### IS106 potted assembly

<b>Dimensions</b>	= 50 x 50 x 15 min.
<b>Mounting</b>	= M3 bolt through central hole.

Connections by removable plugs with screw terminals  
Maximum connector wire diameter = 2mm ø

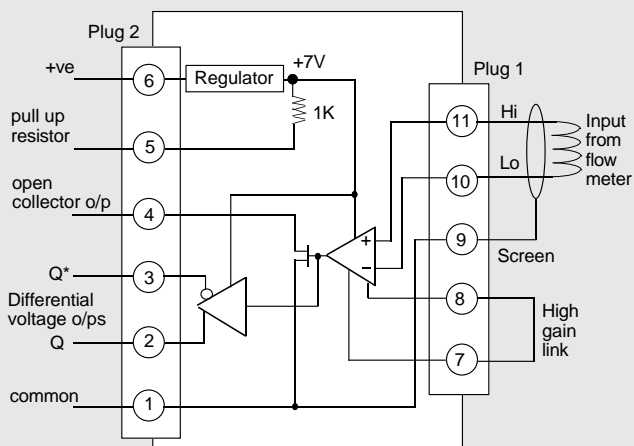
## R24 SPECIFICATION

<b>Dimensions</b>	= 160 x 160 x 95mm
<b>Mounting</b>	= 140 x 110mm - 4 x 20mm threaded holes
<b>Physical</b>	= IP66, Blue glass reinforced polyester

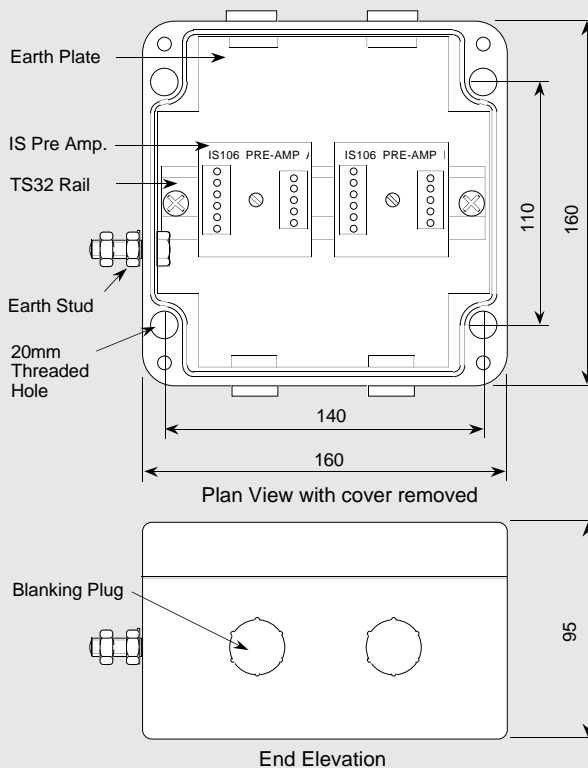
### Further Information

Further information on any Spectra-Tek products may be obtained from our Sales Offices shown below or from any of our Distributors and Sales Representatives world-wide

### BLOCK DIAGRAM OF IS106 PRE-AMPLIFIER



### GENERAL ARRANGEMENT OF IS PRE-AMPLIFIER ENCLOSURE



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STM/96/XXX/06.01.96



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