



# ANALOGUE SIGNAL TELECOM TRANSMISSION

Tone Transmitter (Analogue input) Type COM-70  
Tone Receiver (Analogue output) Type COM-71

- Signals 4-20mA or 1-5V over telecom lines
- Narrow profile - high packing density
- Field programmable input types
- 24V or 48V DC powered
- Simple installation
- DIN Rail or surface mounting



The Tone Transmitter / Receiver pair, COM-70 and COM-71, provide a way of signalling a 4-20mA (or 1-5V) signal over telecom circuits where a copper wire connection is not available. Typical applications include long-distance transmission of analogue signals over telecoms lines, including optical fibre or multiplexed circuits.

## PRINCIPLE of OPERATION

The COM-70 converts an analogue signal into a frequency in the range 400-2000Hz. This sine-wave signal is isolated by a transformer with impedance matched to suit a 600 ohm telecom line.

The COM-71 has a transformer matched to suit 600 ohm transmission lines. It accepts a signal in the range 400-2000Hz and converts this into a 4-20mA signal. Loss of received tone causes the indicator LED to show red. A normal state is indicated by this LED showing green.

## Ordering Information

- Quote 'Type COM-70' or 'Type COM-71'
- Input signal (COM-70) i.e. 4-20mA or 1-5V
- Power supply i.e. 24V DC or 48V DC

## SPECIFICATIONS

### COM-70 and COM-71

#### POWER SUPPLY (must be stated at time of order)

Either 24V DC -10% +20% 1W maximum or  
48V DC -10% +20% 1W maximum

Protected by a thermal self-resetting fuse -100mA.

#### ISOLATION

Input, output and power supply are all isolated from each other to withstand 1000V DC.

#### CALIBRATED ACCURACY

Set at full scale to be within  $\pm 0.1\%$  FSD

#### LINEARITY ERROR

$\pm 0.1\%$  FSD

#### COMBINED ACCURACIES

COM-70 and COM-71 as a pair  
Calibrated accuracy:  $\pm 0.2\%$  FSD  
Linearity error:  $\pm 0.2\%$  FSD

#### TEMPERATURE RANGE

Operating and storage:  $-10^{\circ}\text{C}$  to  $+50^{\circ}\text{C}$

#### TRANSMISSION DISTANCE

approx. 22km depending on wire resistance

## COM-70 TRANSMITTER

### INPUTS (factory configured)

4-20mA into 51 ohms; 1-5V into 270 k ohms

### OUTPUT IMPEDANCE

Transformer coupled: 600 ohms

### OUTPUT SIGNAL LEVEL

+5.5dB (1.5V rms) @ 400Hz (4mA or 1 volt input)  
to +6.5dB (1.6V rms) @ 2kHz (20mA or 5 volt input)

### LED INDICATOR

Red: power on

## COM-71 RECEIVER

### INPUT IMPEDANCE

Transformer coupled: 600 ohms

### INPUT SIGNAL RANGE

-7.5dB (0.325V rms) to +6.5dB (1.6V rms)

### OUTPUT

4-20mA into 750 ohms max.

### LED INDICATOR

No illumination: power off

Green: power on and receiving 400-2000Hz

Red- Loss of signal: less than 360Hz or -7.5dB signal level received

## MECHANICAL DETAILS

### WEIGHT

Approximately 120g

### ENCLOSURE

Protection: Enclosure - IP40 DIN 40050  
 Terminals - IP20 DIN 40050/ VBG 4  
 Material: Enclosure body - ABS  
 Colour - light grey  
 Terminal Housing Polycarbonate  
 Colour - light grey  
 Terminals: Maximum conductor size; 2 x 1.5mm<sup>2</sup>  
 solid or max. 2 x 1mm<sup>2</sup> stranded with end  
 sleeves DIN 46228

### INSTALLATION

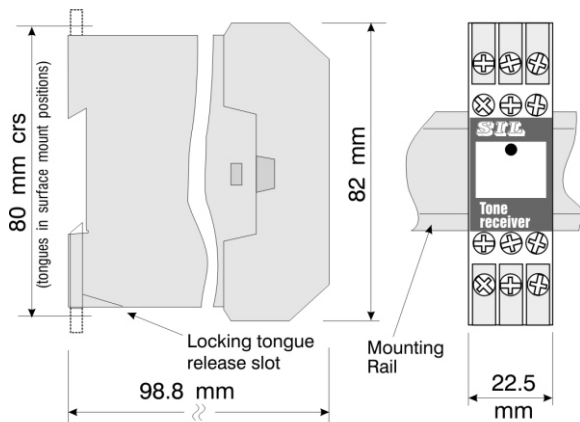
These units may be snap mounted on a top-hat section rail ( BS5584:1978, DIN46277-3, EN50 022 ).

A removable mounting clip is also available for screw fixing (2 x M4 x 80mm PCD).

Front accessible screw terminals with self-adjusting connection washers are provided. These enable secure clamping of two connection wires with differing cross sections.

The unit may be removed from the rail by inserting a small flat-blade screwdriver into the slot at the bottom rear edge of the enclosure. Moving the handle of the screwdriver towards the body of the enclosure will release the locking tongue and enable the unit to be swung up and away from the mounting rail.

Fig 1 DIMENSIONS



#### Surface mounting

Insert screwdriver, twist anti-clockwise to allow latch to clear stop and rest in surface mount position

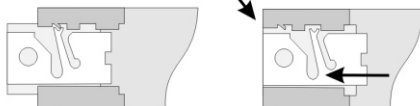


Fig 2 TRANSMITTER CONNECTIONS

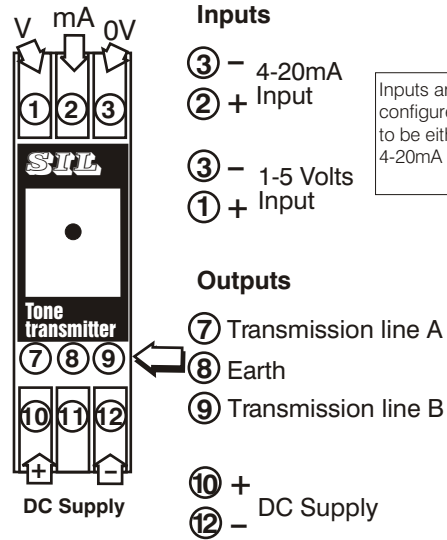
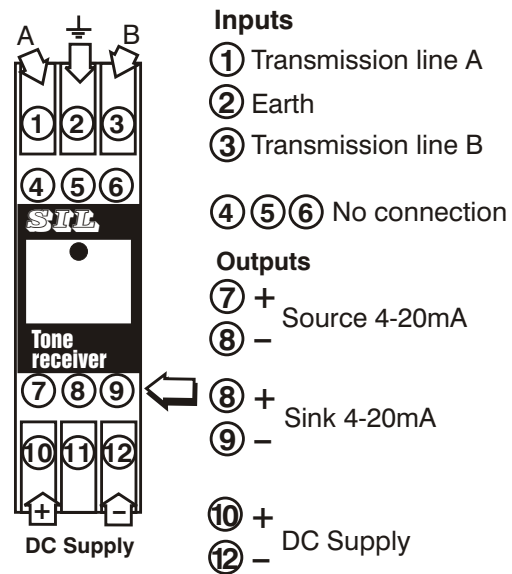


Fig 3 RECEIVER CONNECTIONS



#### Note:

For current sink connections terminal 9 is connected to the 0V line of the unit providing the 4-20mA.

Continuous development may necessitate changes to these details without notice.

# SIL

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