

Pulse Isolator Type C16-51 Installation Guide



Document Ref: UDC16-51.vp Rev 0



WARNING!

It is important that this guide is read and fully understood before attempting installation or commissioning of the instrument. Instructions appearing in this document, and current safety legislation, must be observed to ensure personal safety and to prevent damage to the instrument or equipment connected to it.

The instrument should be installed, commissioned and operated only by suitably qualified and authorised personnel.

- The specifications for the instrument must not be exceeded. If the instrument is used in a manner not specified, the protection provided by the instrument may be compromised.
- The instrument must be installed in an enclosure that provides adequate protection against electric shock.
- Ensure that power to the instrument is switched off and signal wiring isolated from hazardous voltages before carrying out installation or maintenance.
- The instrument is designed for installation in a clean, dry environment (Pollution degree 1).
- Stroud Instruments Ltd strongly recommends that repairs and re-calibration work are done on a return to factory basis in order that our quality standards, product specifications and safety precautions are not compromised.
- The instrument is double insulated

Note: Clean only with a dry soft cloth.

Safety and EMC information

Safety: EN61010 -1
Immunity: EN50082-1
Emissions: EN50081-1
CE certified

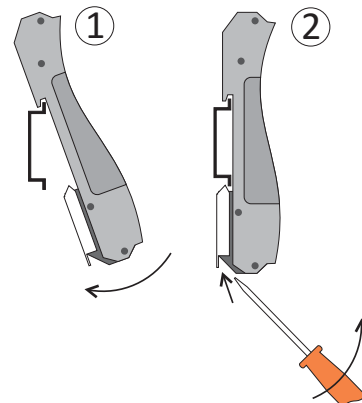
Installation

Location

- The instrument is designed for installation in a clean, dry environment
- Do not install near to switch gear, motor controllers or other sources of strong magnetic fields.
- Avoid exposure to direct sunlight and ensure the ambient temperature inside the enclosure that the unit is mounted in will not exceed our specification.

DIN rail mounting

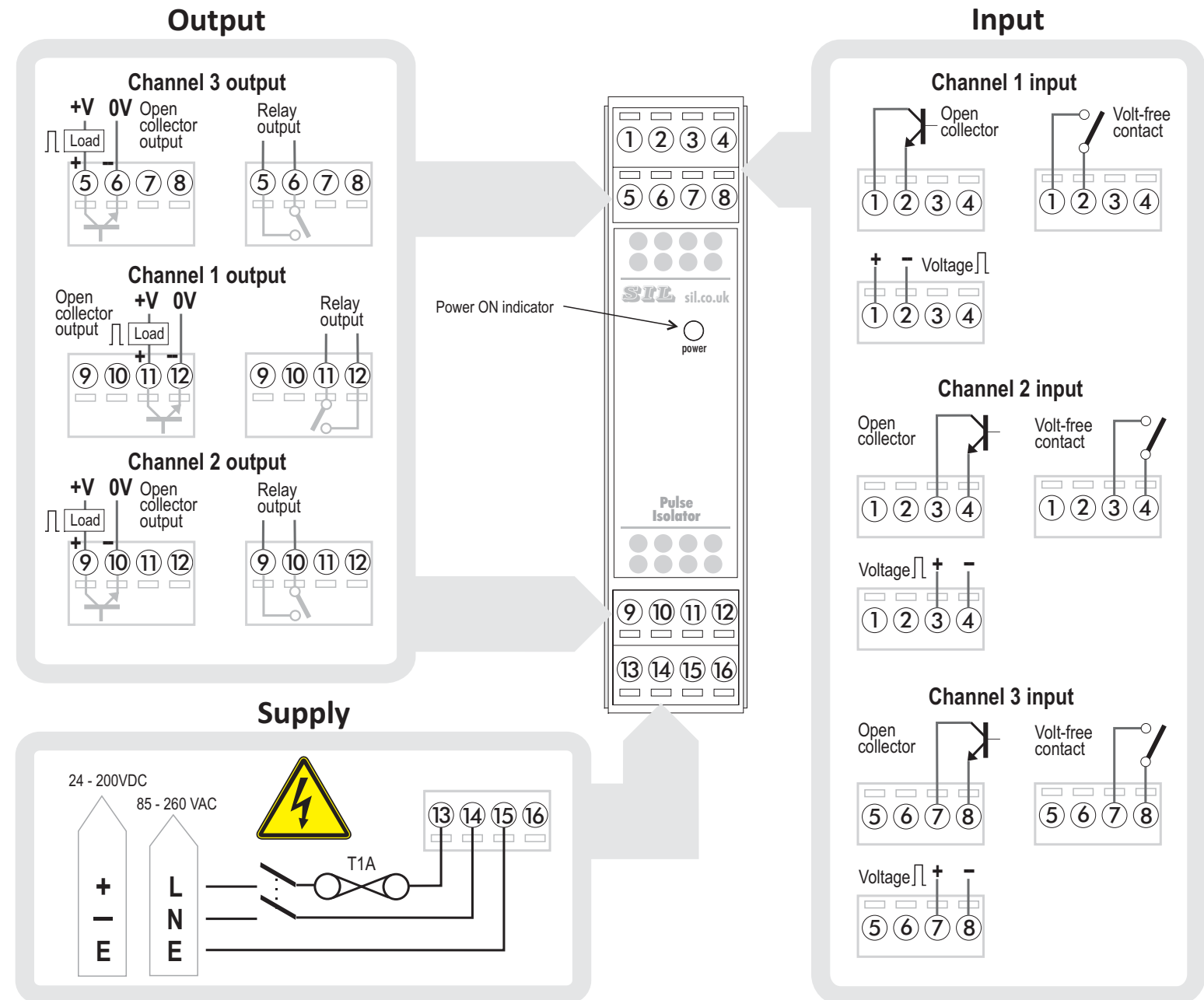
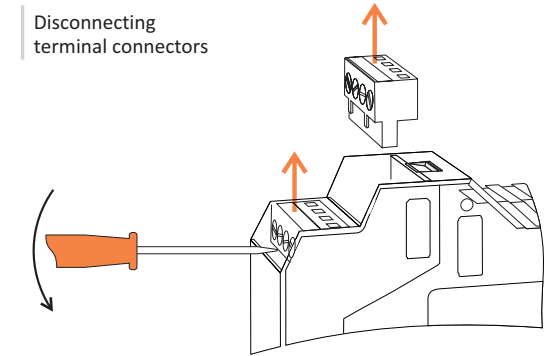
1. Hook the top DIN rail recess over the DIN rail, and press the bottom edge against the DIN rail until the spring-loaded latch clicks home.
2. To remove the instrument from the DIN rail, insert a small bladed screwdriver into the slot in the spring-loaded latch and gently lever the screwdriver up until the latch releases from the DIN rail.



Wiring and connections

- Segregate power supply and signal wiring.
- Use screened cable for all signal wiring with the screen earthed at one end only.
- All connections should be made using ferrules to avoid short-circuits between adjacent terminals.
- This instrument is equipped with a universal power supply and may be operated from either of the following supply ranges:
DC supplies: 24 VDC to 200 VDC or AC supplies: 85 VAC to 260VAC
- Power supply wiring to the instrument should be protected by a 1A time-delay fuse and double pole switch - see below. The switch should be clearly marked as the isolating switch for the instrument.

Note: terminal connectors are removable.



Configuration

The C16-51 is a multi-function pulse isolator / pulse splitter which may be user configured to provide three separate pulse isolator channels or as a two or three way pulse splitter in applications requiring isolated signals for two or more monitoring systems. When configured as a two-way splitter the third channel may be used as a separate pulse isolator. The output type for each channel is set during manufacture. The data label on the side of the instrument indicates the type(s) fitted.

User configuration settings

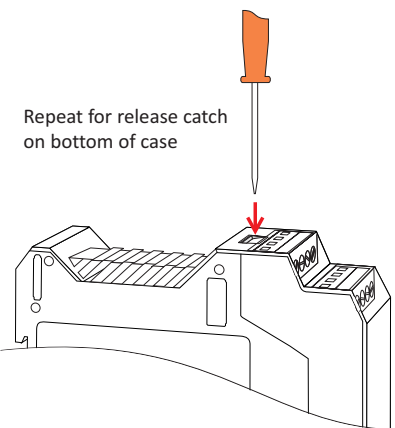
The following procedures require the case to be opened.



WARNING: The Pulse Isolator must be isolated from power supply and any potentially hazardous signals before commencing this procedure.

Opening the case

1. Turn off all power to the unit and isolate all potentially hazardous signals. NB the terminals are removable to facilitate a quick disconnect. see 'Wiring and connections'.
2. To open the unit release the top and bottom catches by pressing down with a small screwdriver as shown and withdraw the front panel and PCB assembly out of the case.



User configuration settings

Referring to the 'Configuration links' diagram, the jumper links are grouped in the shaded boxes by function. With the exception of 'Channel configuration', the jumper link for each channel is identified by the channel number e.g. 'C1' = channel 1. The diagram shows the link positions for each setting.

Channel configuration:

- This setting enables the pulse isolator to function in one of the following modes:
- Three separate pulse isolators
 - One input to three isolated outputs
 - One input to two isolated outputs plus one single channel pulse isolator

The following are configurable for each channel:-

Input type

- Volt-free contact or open collector
- Voltage pulse of 3V minimum up to 24V maximum

Output pulse width:

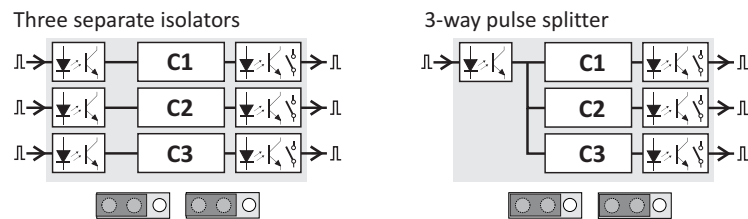
- Output pulse width = 100ms, suitable for inputs frequencies equal to or less than 5Hz
- Output pulse follows input, for input frequencies greater than 5Hz (Maximum frequency =10kHz)

Output polarity:

- Open collector in 'OFF' state (output 'High')/ relay de-energised (contact normally open)
- Open collector in 'ON' state (output 'Low')/ relay energised (contact closed)

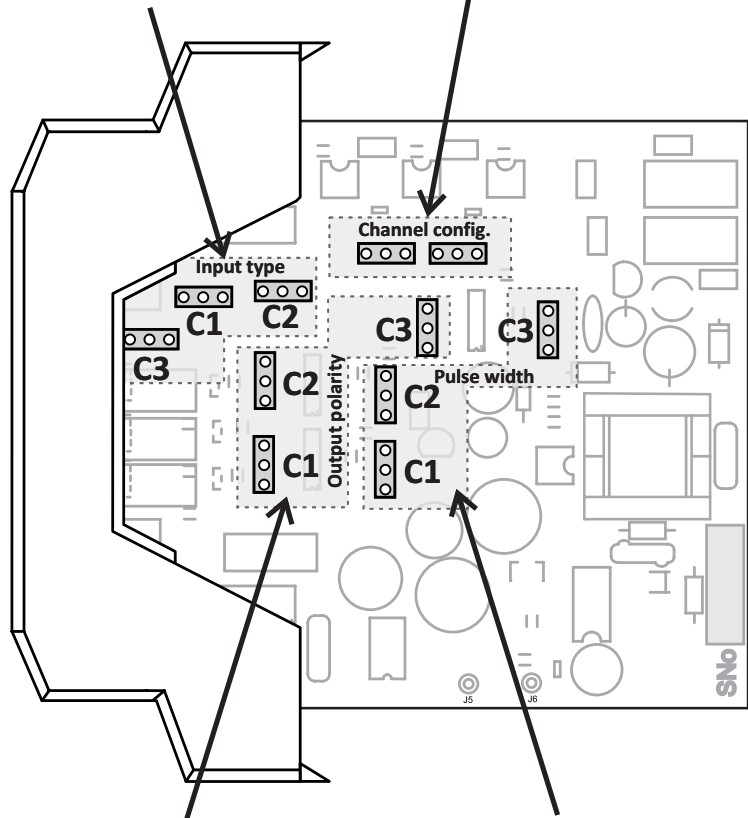
Configuration links

Channel configuration



Input type

- Volt-free contact or open collector
- Voltage 3Vmin, 24V max



Output polarity

- Open collector in 'OFF' state (output 'High') or relay de-energised (contact normally open)
- Open collector in 'ON' state (output 'Low') or relay energised (contact closed)

Output pulse width

- > 100ms (for inputs ≤ 5Hz)
- Output follows input (for inputs > 5Hz)

SPECIFICATIONS

Input pulse rate
0 - 10kHz.

Inputs (User selectable)

- a) Volt-free contact
- b) Open collector transistor
- c) Voltage level change (5V minimum, 24V maximum, sine, square or triangular)

Input impedance

43k ohms (voltage change signals).

Output options (Factory set)

- a) Optically isolated open collector transistor
50Vdc max. 20mA
- b) Relay contact (frequency=10Hz max). Relay contacts are rated at:-
3A @ 240V AC resistive or
2.5A @ 30V DC resistive.

Power Supply

85 - 260 VAC 50/60Hz; 24 - 200 VDC (3W nominal).

Safety & EMC

Safety: EN61010-1, Immunity: EN50082-1, Emissions: EN50081-1, CE certified

Mechanical

Weight: approx. 0.5kg, Dimensions (mm): 116D* x 22.5W x 99.5H *Depth is 117.9 when mounted on DIN rail TS3/TS35D

Temperature range

Operating: - 10 to + 60°C
Storage: - 20 to + 70°C

Accuracy

Error ±1 output pulse.

Isolation

Inputs and outputs are isolated from each other and from the power supply. Max. voltage 250 V RMS or 400 V DC. Resistance ≥ 50 x 10⁵ ohms measured at 1000 V DC.