

**STATUS TO ANALOGUE
CONVERTER**

Type 112-61s

User Guide

Continuous development may necessitate
changes in these details without notice



PROCESS MEASUREMENT, CONTROL & DISPLAY INSTRUMENTATION

STROUD INSTRUMENTS LTD

36-40 Slad Road, Stroud, Gloucestershire GL5 1QW England

Tel: +44 (0)1453 765433 Fax: +44 (0)1453 764256

sales@sil.co.uk <http://www.sil.co.uk>

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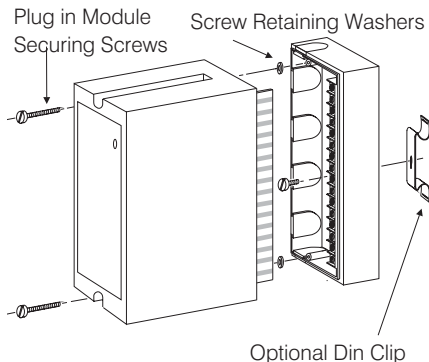
IMPORTANT - Installation, wiring, commissioning or re-ranging of this instrument should be restricted to authorised skilled personnel.

SWITCH OFF ALL POWER SUPPLIES AND ISOLATE SIGNAL WIRING FROM DANGEROUS VOLTAGES BEFORE COMMENCING WORK ON THE INSTRUMENT

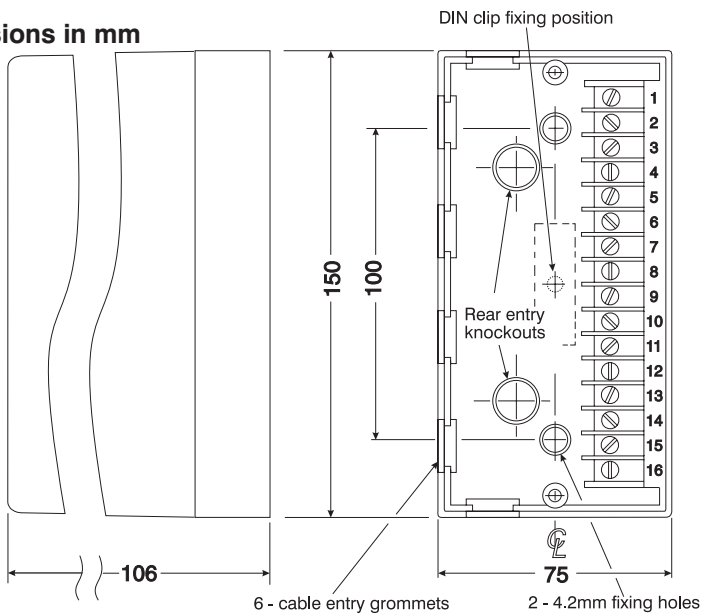
Installation

112 Series Modules are designed to be fitted to any flat dry surface using two 4mm screws. Alternatively, by fitting an optional DIN clip, they may be clipped to a rail conforming to BS5584:1978, EN50 022, DIN46277-3.

Grommets are provided on three sides of the base section and there are two rear entry knockouts in the bottom.



Dimensions in mm



Wiring

Grommets are provided on three sides of the base section and there are two rear entry knock outs in the bottom. Good instrumentation practice should be observed when wiring to the unit to ensure segregation of mains supply and signal wiring. Screened cables should be used for signal / sensor wiring with the screen earthed at one end only.

Power supply considerations

This instrument operates from an AC supply in the range 85-260VAC 3VA - see Appendix 1 for earlier versions with linear power supply. Power supply wiring to the instrument should be protected by a suitable fuse and double-pole isolating switch.

Access to terminals

Isolate all supplies to the unit. Loosen the two module securing screws. *(NB these screws are retained in the top section by*

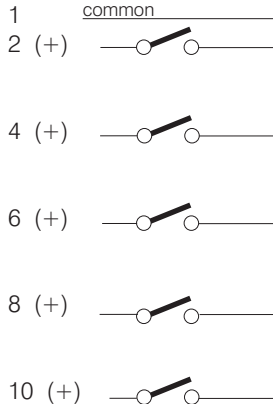
Terminal connections

Inputs

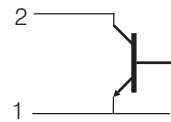
Voltage / current

- 1 (+)
- 2 (-) Input A
- 3 (+)
- 4 (-) Input B
- 5 (+)
- 6 (-) Input C
- 7 (+)
- 8 (-) Input D
- 9 (+)
- 10 (-) Input E

Volt-free contacts / open collector*



* for open collector inputs (npn transistor), connections as for volt-free contact - emitter to common, e.g.



Outputs

Voltage or Current Sink

- 11 Output (-)
- 12 Output (+)

Current

- 12 Output (-)
- 13 Output (+)

Supply

- 14 Earth
- 15 Neutral
- 16 Line (85-265 Vac)

DC Supply Option

- Earth
- Negative (-)
- Positive (+)

NB Inputs and outputs are configured during manufacture and are not intended to be changed by the user.

captive washers). Gently pull away the top section of the module from its base to expose the fixing points and wiring terminals. To refit the module, align the module edge connectors with the socket in the base and carefully press home. NB Do not over tighten the module securing screws.

Operation

Introduction

The 112-61s provides an analogue output proportional to the number of active inputs. Each unit will accept up to five inputs but the outputs of multiple units may be connected in series (voltage) or parallel (current) for applications monitoring more than five inputs - see Note 2. below. The number of input signals required for full scale output is set by internal switches.

Notes:

1. Input and Output signal types are configured during manufacture and are not user selectable. Information on the types set may be found on the data label on the side of the enclosure and the connection label on the underside of the plug-in module.
2. In multiple unit configurations the output signal range will have been configured to suit the number of units connected together. Connection instructions will have been provided separately.

Switch settings



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The number of input signals required for full scale output is set by internal switches located on the printed circuit board - for location see Fig 1. The switches may be accessed as follows:

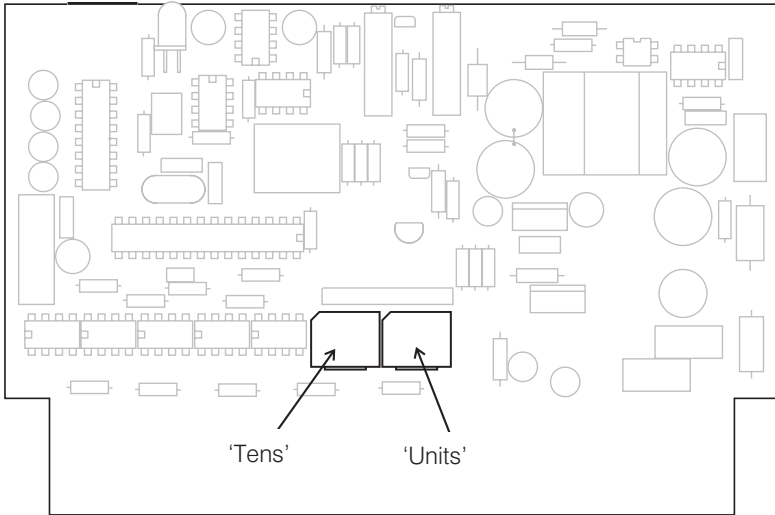
Opening the module

- (i) Isolate all supplies to the unit.
- (ii) Unscrew two module retaining screws and separate the plug-in module from the base section.
- (iii) With the fingers, ease apart the longer sides of the cover releasing the interlocking tongue and groove fastenings to remove the plastic plate with the connections label.
- (iv) Slide out the printed circuit board (PCB) noting the location and orientation of the PCB.

Setting number of inputs

Set the 'tens' and 'units' switches to the number of inputs being monitored. For applications where multiple units are being connected to cater for more than five inputs, the switches in each unit must be set to the total number of inputs being monitored. e.g. to provide a full scale output with 15 input signals present, three Status to Analogue Converters would be required, each set for 15 inputs. NB see Note 2 under 'Operation'.

Fig 1 Location of switches



Re-assembly

- (i) Slide the printed circuit board into the correct slot in the cover (i.e. ensuring the LED indicator aligns with its window in the front panel).
- (ii) Replace the plastic plate by first engaging the side with the two tongues into their slots in the case then press the plate home to engage the single tongue.
- (iii) Align the module edge connectors with the socket in the base section and press home.
- (iv) Replace module securing screws but do not over tighten.

Appendix 1 - Earlier versions with linear power supply

Supply voltage adjustment

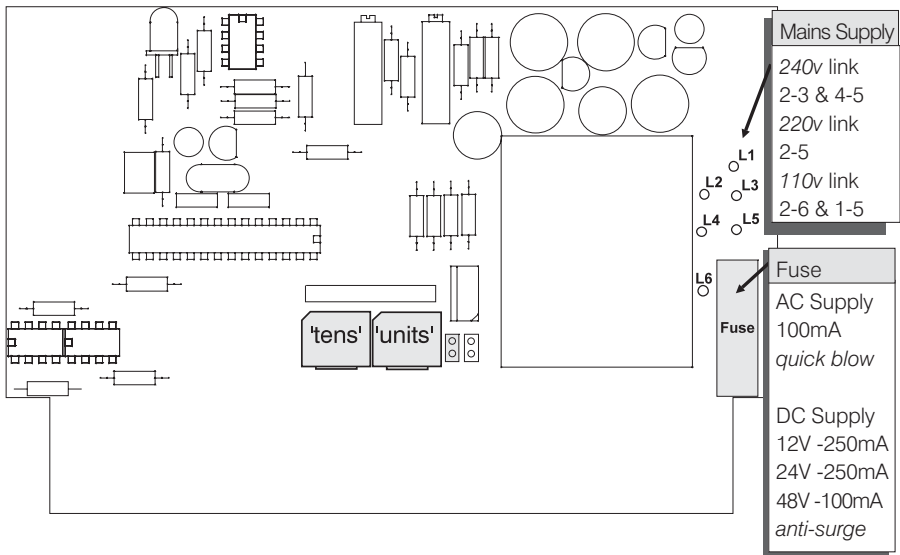
Mains powered units can be adapted for operation on 110V, 220V or 240V supplies. The diagram below provides details of the required link settings which are effected by soldered tinned copper wire links.

IMPORTANT: Links for 110V operation must be insulated with silicon rubber sleeving.

NB: DC powered units are an option specified at the time of ordering and have no facilities for changing the operating supply voltage.



SWITCH OFF ALL POWER SUPPLIES AND ISOLATE SIGNAL WIRING FROM DANGEROUS VOLTAGES BEFORE PROCEEDING.



Appendix 2 - Specification

INPUT SIGNAL OPTIONS

- a) Contact closure (*must sink 10mA approx.*)
- b) Open collector transistor (npn - *must sink 10mA approx.*)
- c) Voltages in the range $>5V <50V$
(*external circuit must source 10mA approx.*)
- d) Current signals $>10 <20mA$

OUTPUT SIGNAL OPTIONS

(*Others can be provided*)

- 0-10 mA into 2000 ohms maximum
- 0-20 mA into 1000 ohms maximum
- 4-20 mA into 1000 ohms maximum
- Current sink 4-20mA @ 30 volts maximum
- 0-5 Volts into 500 ohms minimum
- 1-5 Volts into 500 ohms minimum
- 0-10 Volts into 500 ohms minimum

ISOLATION

Maximum Voltage 250V RMS or 400V DC

For active inputs: each of the inputs and the output are isolated from each other and from the power supply.

For passive inputs: the input stage and the output are isolated from each other and from the power supply. However, inputs are connected to each other via the shared internal isolated 24 V transducer supply.

TEMPERATURE RANGE

Operating: $-10^{\circ}C$ to $+60^{\circ}C$;
Storage: $-20^{\circ}C$ to $+70^{\circ}C$

POWER SUPPLY

Universal ac supply accepts 85 Vac to 265 VAC, 50/60Hz
Protected by a fusible resistor.
DC Supply Option:
24 VDC (18-36VDC) 3.5 W
Protected by a 250mA internal self-resetting fuse.

DIMENSIONS

160 (H) x 76 (W) x 106 (D)

WEIGHT

Approx. 0.4kg

SAFETY & EMC

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