TSCU

Tunnel Sensors Control Unit

The TSCU (Tunnel Sensors Control Unit) is an operator interface which provides a direct link for the operator to visually see information directly from an instrument connected to it such as readings, fault warnings or alarm signals.
The TSCU can also be used to set-up and control the connected instruments with similar functionality to the PC based Utility software supplied with each instrument.

The TSCU is a wall mounted unit which consists of a numeric / directional keypad, a two line LCD display and a terminal compartment. The TSCU is suitable for mounting locally to the instrument or remotely, such as in a control room. The TSCU has multi-heading capabilities so it can be connected directly to a single instrument or to a network of instruments via a single umbilical cable which carries power and communications (RS485). The SCADA interface connections can be made directly to the TSCU and / or to the instrument. This versatility offers the flexibility to accommodate a wide range of wiring schemes.

When the TSCU is connected to a single instrument this cable can be used to power the head as well as provide the RS485 communication between the instrument and the head. However, when the TSCU is connected to multiple instruments these instruments must be powered locally and the umbilical cable to the TSCU only carries the RS485 communications.

The TSCU offers a variety of industry standard interface options. Scalable analogue outputs are available in the form of isolated 0 / 2 / 4 – 20 mA loops. Digital outputs are available in the form of relay contacts for service alarm (data valid) and / or programmable level alarms. Serial communications channels are available in both the instruments and the TSCU; RS485 is available as standard.

Benefits

- **Universal operator interface compatible with the TSL range of tunnel monitors**
- **Provides visual display of instrument readings, fault warning or alarms**
- **Multi-heading capability; with option to control up to 8 separate instruments (via RS485)**
- **Choice of interface options with configurable relays and outputs**
- **Wall mounted unit suitable for local or remote connection**
- **Easy to read back lit LCD display**

Specification

Instrument Interface

Item	Parameter	Units	Min	Max	Comment
1	Serial Comms				Modbus RTU via RS485
2	Number of Instruments on Bus			8	
3	Length of Serial Comms Cable	km		1	Total to all instruments

Power

4	Voltage	Vdc	+24		Optional 90-260 Vac PSU available
5	Voltage Tolerance	%	-10	+10	
6	Nominal Current Consumption	mA		600	TSCU power requirements only
7	Power Up Current Consumption	mA		600	TSCU power requirements only

User Interface Options

8	Serial Outputs				Modbus RTU via RS485 USB (inside terminal compartment)
9	Analogue Outputs (one, four or eight)	mA	0/2/4	20	Isolated and scalable (user selected)
10	Digital Relay Contacts (one, four or eight)	A	0	3	@30Vdc (signal levels and data valid)

Physical

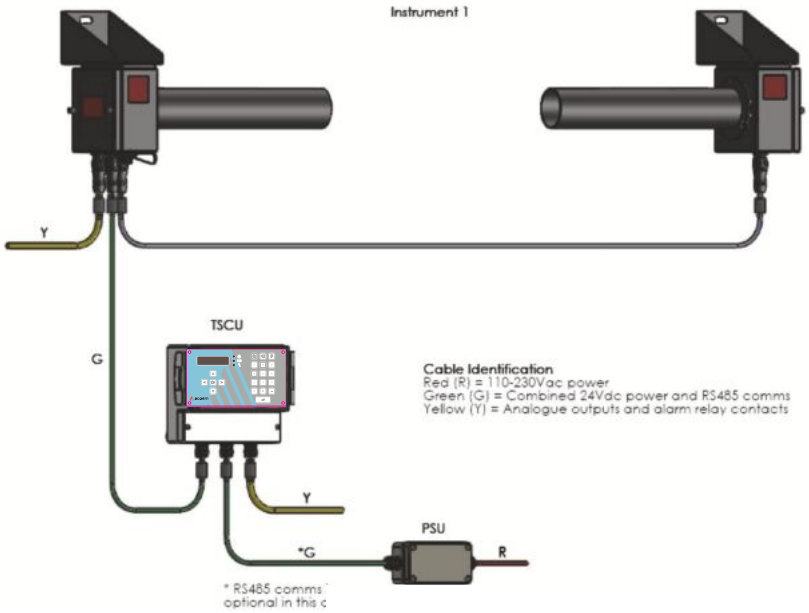
11	Ingress Protection		IP65		Hinged door and terminal compartment closed
12	Operating Temperature	ºC	-20	+55	
13	Operating Humidity	%		100	
14	Material				Aluminium front panel with PU laminate overlay, and PC enclosure with nylon cable glands.
15	Dimensions	mm	232 x 211 x 119		
16	Weight	kg		1.0	

Compliance & Design

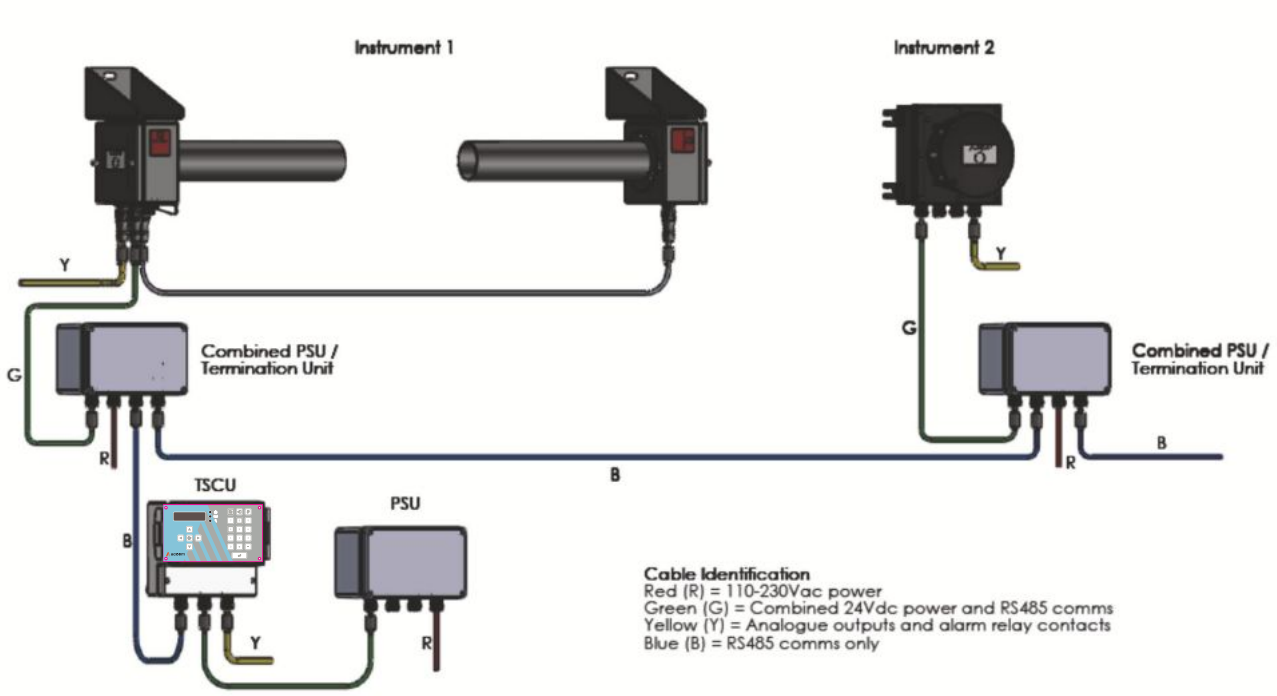
17	Warranty	Months	24		Return to base warranty. Extensions available
18	Regulatory Compliance				2014/30/EU (Electromagnetic Radiation) 2014/35/EU (Low Voltage)

Configuration Options:

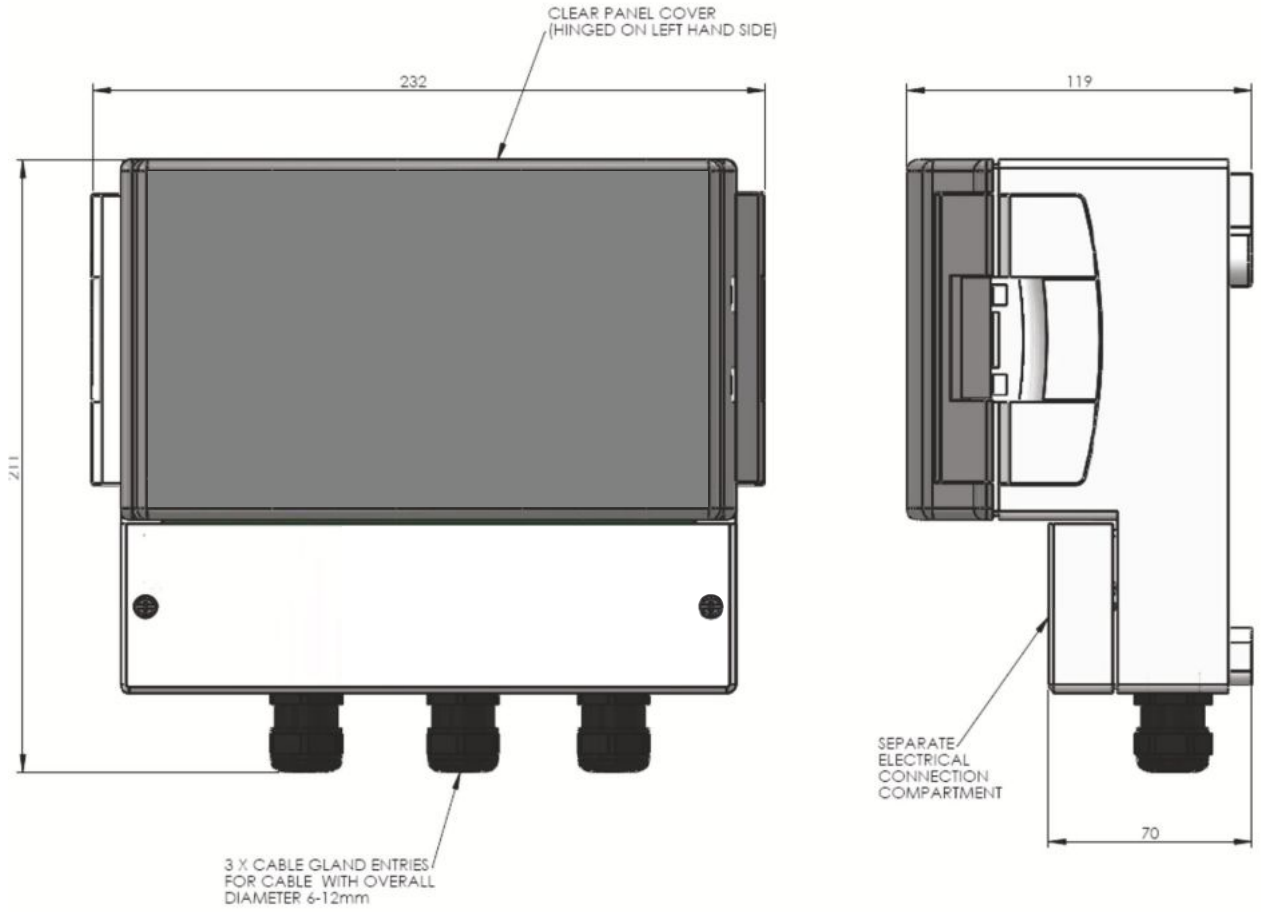
Single Instrument:

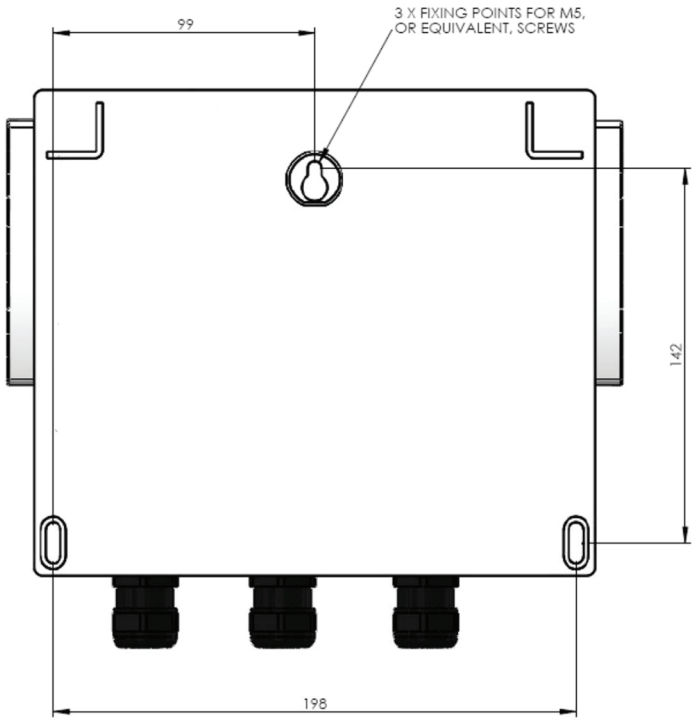


Multiple Instruments:



Dimensions (mm):





Options & Accessories:

Description	Order Code	Notes
TSCU 	TSL-TSCU-1 TSL-TSCU-4 TSL-TSCU-8	1 analogue output and relay 4 analogue outputs and relays 8 analogue outputs and relays
TSCU to Instrument Cable	CBL-099	7-core, screened, LSZH cable.
Boxed PSU	TSL-PSU-75	Multi AC input, 24Vdc output, 75W. IP67 rated enclosure

Note that the actual part may differ from the above representative pictures.

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