ProSense® SCU Series Universal Signal Conditioner

SCU-7900 Signal Conditioner

Part No. SCU-7900

The SCU-7900 Universal Signal Conditioner from AutomationDirect provides the flexibility to accurately measure AC RMS current or AC RMS voltage. The selectable input can measure AC supply voltage up to 300 VAC RMS or AC current transformers up to 5A RMS. The measured AC voltage or current input can be converted to numerous selectable unipolar or bipolar DC current or voltage output ranges or custom configured with two-point field scalability. The isolated universal supply voltage input eliminates the need for separate transformers or power supplies. Isolation is also provided between input and output.

The SCU-7900 is easily configured with the SCU-PDM1 menu-structured LCD programming/display module (a computer running special calibration software is not required and there are no confusing DIP switches or jumpers to set). Automatic scrolling Help text identifies each menu item. The detachable programming/display module can store and transfer configuration parameters from one signal conditioner to another, minimizing set-up time in multiple unit applications. Programming is available in seven different languages and the programming/display module can be password protected to prevent unauthorized changes to the configuration. When not used for configuration, the programming/display module can remain on the signal conditioner to display the input signal value, engineering units, and output signal. A process simulation function allows manual manipulation of the input signal to control the output signal for trouble-shooting and checkout.

Features

- Accurate measurement of AC RMS voltage up to 300 VAC RMS or AC RMS current to 5 A RMS (Not suitable for VFD or non-sine wave sources.)
- Selectable input and output ranges and two-point field scalability
- Universal supply voltage, 21.6 to 253 VAC or 19.2 to 300 VDC, polarity insensitive
- 3-way isolation between input, output, and power
- Easy-to-use detachable LCD programming/display module SCU-PDM1 (Sold separately and required for programming)
- Transfer configuration settings from one signal conditioner to another with SCU-PDM1
- Integral 35mm DIN rail mounting adapter
- Removable screw terminal blocks are keyed to ensure correct installation
- cULus and CE marked
- 5 year warranty

SCU-7900 Universal Signal Conditioner				
Part No.	***Description***	***Quantity***	***Weight (lbs)***	***Price***
SCU-7900	ProSense AC signal conditioner, isolated, AC current, AC voltage input, current or voltage output, 21.6-253 VAC/19.2-300 VDC operating voltage, 35mm DIN rail mount, removable screw terminal plugs.	1	0.34	$162.00

SCU-7900 Signal Conditioner

SCU-7900 Universal Signal Conditioner Technical Specifications		
General Specifications		
Power	AC Power	21.6 to 253 VAC, 50/60 Hz
	DC Power	19.2 to 300 VDC
Consumption	≤ 2.5W	
Fuse	400 mA slow blow / 250 VAC (Not user replaceable)	
Isolation Voltage, Test/Working	2.3 kVAC / 250 VAC (reinforced) / 500 VAC (basic)	
Configuration Interface	Programming/display module, SCU-PDM1 (sold separately)	
Signal Dynamics, Input/Output	20bit / 18bit	
Signal/noise Ratio	Min. 60 dB	
Output Referred Common Mode Rejection Ratio	0.02 ppm/VHz	
Response Time (0 to 90%, 100 to 10%)	< 0.75 sec	
Calibration Temperature	20 to 28°C [68 to 82.4°F]	
Accuracy	The greater of the general and basic values (See Accuracy Table 1)	
EMC Immunity	≤ ±0.5% of span	
Extended EMC Immunity: NAMUR NE 21, A criterion, burst	≤ ±1% of span	
Environmental Conditions	Operating Temperature	-20 to +60°C [-4 to 140°F]
	Storage Temperature	-20 to +85°C [-4 to 185°F]
	Operating and Storage Humidity	95% relative humidity (non-condensing)
Approvals	UL: E197592, UL 508/C22.2 No. 14 CE: EMC 2014/30/EU LVD 2014/35/EU RoHS2 2011/65/EU amended by 2015/863	
Construction	IP 20, case body is black high impact plastic. Pollution degree 2.	
Connections	Wire strip length	7.5mm [0.3 in]
	Wire gauge	26 - 14 AWG standard wire
	Torque	0.5 N-m [4.5 inch-lbs]
Weight	250g [8.8 oz], 285 g [10.1 oz] with programming module	
Dimensions (HxWxD)	109 x 23.5 x 104mm [4.3 x 0.93 x 4.1 in], 109 x 23.5 x 116mm [4.3 x 0.93 x 4.6 in] with programming module	

Accuracy Table 1		
General Values		
Input Type	***Absolute Accuracy***	***Temperature Coefficient***
All	≤ ± 0.3% of span	≤ ± 0.01% of span/°C
Basic Values		
Input Type	***Basic Accuracy***	***Temperature Coefficient***
Current	1.5 mA	50 µA/°C
Voltage	1.5 mVAC	50 µVAC/°C

SCU-7900 Signal Conditioner

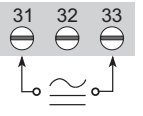
Input/Output Specifications

Model	SCU-7900
Input	
Current input ranges	0...0.5; 0...1; 0...2.5 & 0...5 Arms / 40...400 Hz
Maximum input limit	6A @ 40°C [104°F]
Current input resistance	Nom. < 0.07 Ω
Input voltage drop, nom.	Nom. < 0.35 V
Voltage input ranges	0...0.5, 0...1, 0...2.83, 0…5, 0…120, 0…230 & 0…300 Vrms / 40...400 Hz
Voltage input resistance	Nom. 3 MΩ || 100 pF
Output	
Current output (direct or inverted action)	0...20, 4...20, S4...20, ±10, ±20 mA
Load (max.), current output	≤ 800 Ω
Current limit	≤ 28 mA (unipolar) / ±28 mA (bipolar)
Passive 2-wire programmable ranges	0 to 20 and 4 to 20mA (direct or inverted action)
External 2-wire loop supply	3.5 to 30VDC
Load stability	≤ 0.001% of span / 100 Ω
Response time, programmable	0.0 to 60.0 sec
Voltage output (direct or inverted action)	0/0.2...1, 0/1...5, 0/2...10, ±1, ±5, ±10 V
Load (min.), voltage output	≥ 500 kΩ
Response time, programmable	0.0 to 60.0 sec

Wiring Diagram

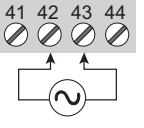
Model SCU-7900

Supply:

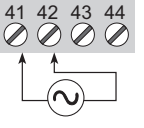


Inputs:

Current

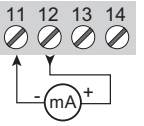


Voltage



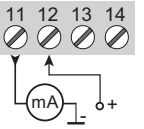
Outputs:

Current (Active output)

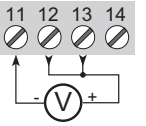


(±)

2-wire transmitter (Passive output)



Voltage, 1 V



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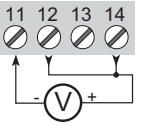
Voltage, 10 V



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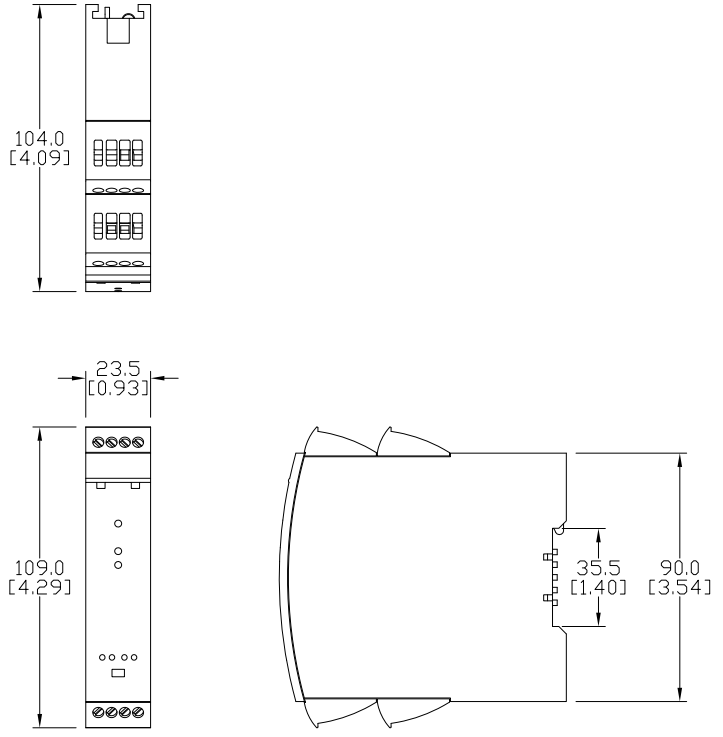
SCU-7900 Signal Conditioner

Dimensions

mm [inches]



See our website www.AutomationDirect.com for complete Engineering drawings.

SCU Series Signal Conditioner Accessories

Programming/Display Module SCU-PDM1

Application:

- The AutomationDirect SCU-PDM1 module easily connects to the front of the Universal Signal Conditioners and is used as a display and to enter or adjust the programming of the module.
- Can be moved from one module to another and download the configuration of the first transmitter to subsequent transmitters.
- Fixed display for visualization of process data and status.
- Required for programming all SCU Series Universal Signal Conditioner models.

Technical characteristics:

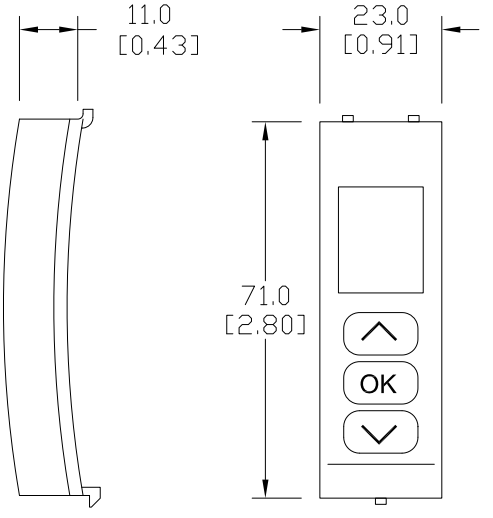
- LCD display with 4 lines; Line 1 (H = 5.57 mm, 0.22 in) shows input signal, line 2 (H = 3.33 mm, 0.13 in) shows units, line 3 (H = 3.33 mm, 0.13 in) shows analog output or user defined text and line 4 shows communication and relay status.
- Programming access can be blocked by assigning a password. The password is saved in the transmitter in order to ensure against unauthorized modifications to the configuration.
- Not capable of standalone or remote operation.
- For Use With: SCU-3100, SCU-1400, SCU-1600, SCU-8400, SCU-7900

Mounting/Installation:

- Snap SCU-PDM1 onto the front of the universal signal conditioners.
- Can be installed or removed whether the signal conditioner is powered or not.

Selectable Engineering Units

! C	hP	kW	mA	pH
! F	hPa	kWh	mbar	rpm
%	Hz	l	mils	s
A	in	l/h	min	S
bar	in/h	l/min	mm	t
cm	in/min	l/s	mm/s	t/h
ft	in/s	m	mol	uA
ft/h	ips	m/h	MPa	um
ft/min	K	m/min	mV	uS
ft/s	kA	m/s	MW	V
g	kg	m/s2	MWh	W
gal/h	kJ	m3	N	Wh
gal/min	kPa	m3/h	Ohm	yd
GW	kV	m3/min	Pa	[blank]



See our website www.AutomationDirect.com for complete Engineering drawings.

External Cold Junction Compensation Connector

Part No. SCU-CJC1

Installation:

- Remove terminal block included with SCU-1400, SCU-1600 or SCU-3100 signal conditioner and replace with SCU-CJC1.

SCU Series Signal Conditioner Accessories				
Part No.	***Description***		***Weight (lb)***	***Price***
SCU-PDM1	ProSense detachable programming/display module, for use with SCU series signal conditioners.	1	0.04	$40.00
SCU-CJC1	ProSense external cold junction compensation (CJC) connector, for use with SCU-3100, SCU-1400, SCU-1600 signal conditioners.	1	0.02	$9.75