## Orsense SCU Series Universal Signal Conditioner

#### SCU-7900 Signal Conditioner



Part No. SCU-7900

The <u>SCU-7900</u> 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 <u>SCU-7900</u> is easily configured with the <u>SCU-PDM2</u> 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 nonsine 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 <u>SCU-PDM2</u> (Sold separately and required for programming)
- Transfer configuration settings from one signal conditioner to another with <u>SCU-PDM2</u>
- 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	
<u>SCU-7900</u>	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	\$236.00	

## <u>SCU-7900</u> Signal Conditioner

#### SCU-7900 Universal Signal Conditioner Technical Specifications

General Specifications			
Power	AC Power	21.6 to 253 VAC, 50/60 Hz	
Power	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-PDM2 (sold separately) or SCU-PDM1 (discontinued and replaced by SCU-PDM2)		
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	$\leq \pm 0.5\%$ of span		
Extended EMC Immunity: NAMUR NE 21, A criterion, burst	≤ ± 1% of span		
	Operating Temperature	-20 to +60°C [-4 to 140°F]	
Environmental Conditions	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.		
	Wire strip length	7.5 mm [0.3 in]	
Connections	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)	ns (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 in		

Accuracy Table 1				
General Values				
Input Type	Absolute Accuracy	Temperature Coefficient		
All	$\leq \pm 0.3\%$ of span	$\leq \pm 0.01\%$ 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		

# <u>SCU-7900</u> Signal Conditioner

### **Input/Output Specifications**

Model	<u>SCU-7900</u>		
Input			
Current input ranges	00.5; 01; 02.5 & 05 Arms / 40400 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	00.5, 01, 02.83, 05, 0120, 0230 & 0300 Vrms / 40400 Hz		
Voltage input resistance	Nom. 3 MΩ    100 pF		
Output			
Current output (direct or inverted action)	020, 420, S420, ±10, ±20 mA		
Load (max.), current output	≤ 800Ω		
Current limit	≤ 28mA (unipolar) / ± 28mA (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 / 100Ω		
Response time, programmable	0.0 to 60.0 sec		
Voltage output (direct or inverted action)	0/0.21, 0/15, 0/210, ±1, ±5, ±10V		
Load (min.), voltage output	≥ 500kΩ		
Response time, programmable	0.0 to 60.0 sec		

### Wiring Diagram

#### Model SCU-7900

#### Supply:

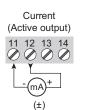


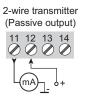




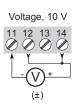
### Outputs:

Inputs:





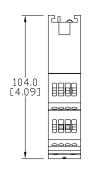


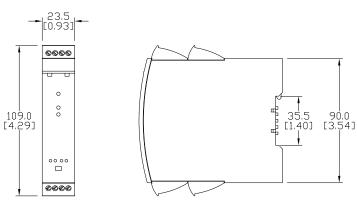


### 1-800-633-0405 For the latest prices, <u>SCU-7900</u> Signal Conditioner

#### Dimensions

mm [inches]





See our website <u>www.AutomationDirect.com</u> for complete Engineering drawings.

### 1-800-633-0405 **SCU Series Universal Signal Conditioner** Accessories



### Programming/Display Module SCU-PDM2

#### **Application:**

- The AutomationDirect SCU-PDM2 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 = 5mm, 0.20 in) shows input signal, line 2 (H = 3.5 mm, 0.14 in) shows units, line 3 (H = 3.5 mm, 0.14 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, SCU-2200, SCU-2501, SCU-2502, SCU-2503



#### Mounting/Installation:

• Snap <u>SCU-PDM2</u> onto the front of the universal signal conditioners.

MHz

P∕M

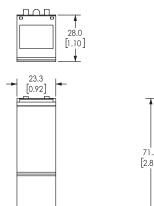
₽/h

P/d

· Can be installed or removed whether the signal conditioner is powered or not.

#### **Selectable Engineering Units**

°C	he	k₩	mA	РH
۳F	hPa	kWh	mbar	rem
%	Hz	1	mils	s
A	in	1⁄h	min	s S t
bar	in⁄h	l∕min	mm	t
GM	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	Ų
9	k9	m∕s2	MWh	ω
9al⁄h	kJ	mЗ	N	Wh
9al/min	kPa	m3∕h	Ohm	ъс
GW	kV	m3∕min	Pa	KHz





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

**External Cold Junction** 

**Compensation Connector** 

Installation:

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

#### Part No. SCU-CJC1

SCU Series Signal Conditioner Accessories					
Part No.	Description		Weight (lb)	Price	
	ProSense detachable programming/display module, for use with SCU series signal conditioners.	1	0.04	\$56.00	
<u>SCU-CJC1</u>	ProSense external cold junction compensation (CJC) connector, for use with SCU-3100, SCU-1400, SCU-1600 signal conditioners.	1	0.02	\$15.50	