SCU-8400 Universal Signal Conditioner

SCU-8400 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	400mA slow blow / 250VAC (Not user replaceable)	
Auxiliary Power Supply Output	Auxiliary supplies: 2-wire loop supply (terminal 43, 44).....> 16 V @ 20mA 3-wire loop supply (terminal 42, 44).....> 18...< 28V @ 23...0 mA Loop supply limitation (terminal 42, 44).....27...35 mA avg., < 80mA peak Reference voltage.....2.5V ±0.5% Reference voltage, load.....0...15 mA Current limit, reference voltage.....< 60mA	
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	24bit / 18bit	
Signal/noise Ratio	Min. 60dB	
Response Time (0 to 90%, 100 to 10%)	< 20ms	
Calibration Temperature	20 to 28°C [68 to 82.4°F]	
Accuracy	The greater of the general and basic values (See Accuracy Table)	
EMC Immunity	≤ ± 0.5% of span	
Extended EMC Immunity: NAMUR NE 21, A criterion, burst	≤ ± 1% of span	
Conducted emission, class A	150kHz to 10MHz	
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	7.5 mm [0.3 in]
	Wire gauge	26 - 14 AWG standard wire
	Torque	0.5 N-m [4.5 inch-lbs]
Weight	250g [8.8 oz], 285g [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 116 or 131mm depending on which programming module, PDM1 or PDM2 [4.3 x 0.93 x 4.6 or 5.16 in] with programming module	

Accuracy Table		
General Values		
Input Type	***Absolute Accuracy***	***Temperature Coefficient***
All	≤ ± 0.05% of span	≤ ± 0.01% of span/°C
Basic Values		
Type	***Basic Accuracy***	***Temperature Coefficient***
Current input	± 0.334 µA	± 0.067 µA/°C
Voltage input	± 8.33 µV	± 1.67 µV/°C
Current output	± 1.33 µA	± 0.266 µA/°C
Buffered voltage output	± 267 µV	± 53.4 µV/°C
Shunted voltage output (±1 V)	± 267 µV	± 53.4 µV/°C
Shunted voltage output (±10V)	± 1333 µV	± 0.267 µV/°C

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Input/Output Specifications

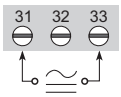
Model	SCU-8400
Input	
Current input ranges	0...1, 0...5, 1...5, 0...20, 4...20, ±1, ±5, ±10, ±20, ±50, ±100mA
Current input resistance	Nom. 20Ω + PTC 10Ω
Current min. span	0.5 mA
Input voltage drop, nom.	0.6 V @ 20mA
Voltage input ranges	0...0.1, 0...1, 0.2...1, 0...2.5, 0...5, 1...5, 0...10, 2...10, 0...100, 0...300, ±0.1, ±1, ±2.5, ±5, ±10, ±100, ±300 V
Voltage min. span	25mV
Voltage input resistance	> 2.5 V input: 3 MΩ nom. ≤ 2.5 V input: > 10 MΩ
3-wire potentiometer input (terminal 41, 42 & 44)	0...100%
Potentiometer reference voltage (terminal 42, 44)	2.5 V
Potentiometer calibration resistance	5kΩ
Min. potentiometer resistance	200Ω
Output	
Current output ranges (direct or inverted action)	0...5, 1...5, 0...10, 2...10, 0...20, 4...20, S4-20 mA, ±5, ±10, ±20 mA
Current output min. span	4mA
Load (max.), current output	≤ 1000 Ω / ± 20V @ ± 20mA
Current limit	≤ 28 mA (unipolar) / ±28 mA (bipolar)
Load stability	0.001% of span / 100 Ω
Response time, programmable	0.0 to 60.0 sec
Passive 2-wire programmable ranges	0 to 20 and 4 to 20mA (direct or inverted action)
External 2-wire loop supply	3.5 to 28.8 VDC
Voltage output programmable ranges (direct or inverted action)	0/0.2...1, 0/1...5, 0/2...10, ±1, ±5, ±10 V
Response time, programmable	0.0 to 60.0 sec
Shunted voltage output signal range	±1.2 V / ±12V
Shunted programmable standard ranges	0...1, 0...2.5, 0...5, 0...10, 2...10, ±1, ±2.5, ±5, ±10V
Shunted custom configurable output range	±10V
Shunted min. span	0.8 V
Load (min.), shunted voltage output	≥ 500kΩ
Buffered voltage output signal range	±23 V
Buffered programmable standard ranges	0...1, 0.2...1, 0...2.5, 0...5, 1...5, 0...10, 2...10, 0...20, 4...20, ±1, ±2.5, ±5, ±10, ±20 V
Buffered custom configurable output range	± 20V
Buffered min. span	0.8 V
Load (min.), buffered voltage output	> 2kΩ
Current limit, buffered voltage output	< 50mA

SCU-8400 Universal Signal Conditioner

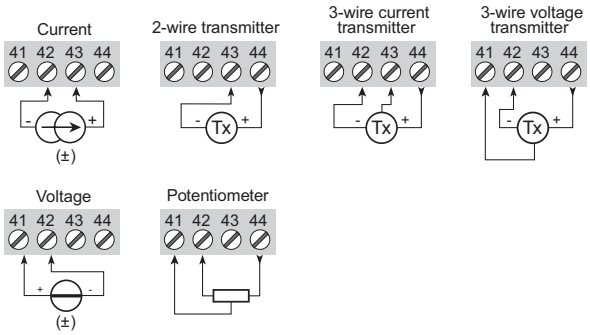
Wiring Diagram

Model SCU-8400

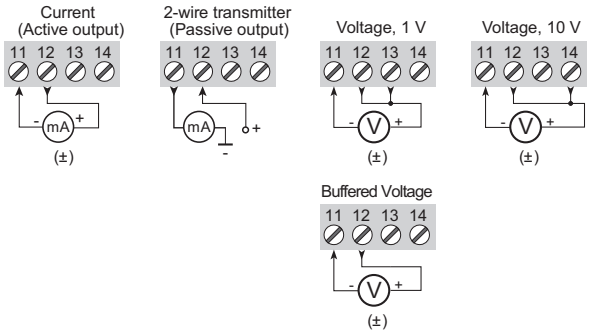
Supply:



Inputs:



Outputs:



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:

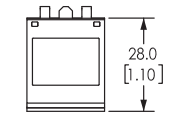
- LCD display with 4 lines; Line 1 (H = 5mm, 0.20 in) shows input signal, line 2 (H = 3.5 mm, 0.14 in) shows units, line 3 (H = 3.5 mm, 0.14 in) shows analog output or user defined text and line 4 shows communication and relay status.
- Programming access can be blocked by assigning a password. The password 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

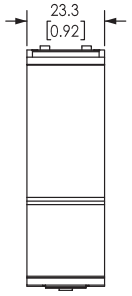
Mounting/Installation:

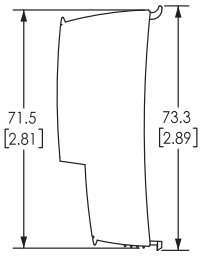
- Snap SCU-PDM2 onto the front of the universal signal conditioners.
- Can be installed or removed whether the signal conditioner is powered or not.

Selectable Engineering Units

°C	hP	kW	mA	pH	MHz
°F	hPa	kWh	mbar	rpm	p/m
%	Hz	l	mils	s	p/h
A	in	l/h	min	S	p/d
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	KHz	







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-PDM2	ProSense detachable programming/display module, for use with SCU series signal conditioners.	1	0.04	$65.00
SCU-CJC1	ProSense external cold junction compensation (CJC) connector, for use with SCU-3100, SCU-1400, SCU-1600 signal conditioners.	1	0.02	$20.00