INDUMART Canada
www.indumart.com

Universal Controller

SERIES: SCM5

- UNIVERSAL INPUT WITH AUTO-TUNING
- 1 ADDITIONAL ANALOGUE INPUT (OPTION)
- SUM, DIFFERENCE OR MEAN VALUE OF TWO INPUTS
- UP TO 4 RELAY OR TRANSISTOR OUTPUTS
- UP TO 2 CONTINUOUS OUTPUTS (CONTROL OR RETRANSMISSION)
- FRONT PANEL DIMENSION: 48 x 96 mm
- PID & ON/OFF CONTROL, HEAT-COOLING
- 15 SET POINT PROGRAMS OF 15 SEGMENTS
- MODBUS COMMUNICATION RS-485 (OPTION)
- TWO BARGRAPHS AND TWO 4-DIGIT INDICATIONS
- TWO-STATE, THREE-STATE OR STEP-BY-STEP ACTION
- 20...40 VAC/VDC OR 90...254 VAC/VDC POWER SUPPLY

INTRODUCTION

Indumart *SCM5 Series* Universal Input Controllers accept current, voltage, resistance, thermocouple and RTD signals. The controller also has a logic input and may have an additional current, voltage or resistance input.

Adding a second analogue input makes provisions for arithmetic functions of the inputs, such as, summation, subtraction and mean sum of the two analogue inputs.

The PID auto-tuning function ensures an optimal control quality. The set point can be constant, changeable during the process or read out from the additional input.

The controller is capable of storing fifteen programs, each with fifteen segments. By assigning a program, the set point will be a function of time, in accordance to the desirable setting. The logic input serves to control the set point program.

The controller displays measured values, the set point, the output signal and other process parameters on its two 4-digit displays and two 21-segment bargraphs.

The SCM5 Series controllers have four outputs, which can be used as alarm relays, a two-state action, three-state action of heating-cooling type, three-state step-by-step action or continuous outputs (control or retransmission).

The MODBUS protocol RS-485 interface may be ordered as option.

SPECIFICATIONS

Analogue Input	*Thermocouple* K, J, T, S, R, N, B, E *RTD* Pt100, Pt1000, Ni100, Cu100 *Resistance* 0...400Ω *Chromel-Kopel* 0...650Ω *Linear Voltage* 0...5 V, 0...10 V *Linear Current* 0...20 mA. 4...20 mA
Additional Input	*Linear Current* 0...20 mA. 4...20 mA *Linear Voltage* 0...5 V, 0...10 V *Linear Potentiometric* 0...100Ω, 0...1000Ω
Additional Input Function	Used for the 2nd input and may be utilized for sum, difference or mean value of both inputs; May be used as set point value
Logic Input	No-power short or open circuit
Control Algorithm	P, PD, PI, PID, ON/OFF with hysteresis PID with self-adaptive system
Sampling Period	0.5 s
Control Parameters	*Proportional Band* 0...200% *Integral Time Constant* 0...3600 sec. *Derivative Time Constant* 0...1000 sec. *Dead Band* 0...99.99 units *Hysteresis* 0...99.99 units

SPECIFICATIONS (continue...)

Measurement Error	0.2% for all, except B, R & S thermocouples @ 0.3%
Output	*Continuous Current* 4...20 or 0...20 mA, 500Ω maximum load *Continuous Voltage* 0...10 V or 0...5 V 500Ω minimum load *Electromagnetic Relays* 2A @ 220 VAC *OC type Transistors* 24 V & 10 mA maximum *Logic* 0/19 V, 20 mA maximum
Output Action	Direct action (for cooling); Reverse action (for heating); Continuous linear output; Two-state (discontinuous output with a proportional cycle time); Three-state (heating-heating or cooling-cooling); Three-state step-by-step (closing-opening a valve)
Analog Output Error	0.2%
Serial Interface	MODBUS protocol RS-485
Baud Rate	9600, 4800, 2400 bit/s
Working Mode	ASCII: 8N1, 7E1, 7O1 RTU: 8N2, 8E1, 8O1
Kind of Set Point	Constant, by additional input, ramp & soak programmed
Ramp/soak program	15 programs with 1 to 15 intervals in each program
Set Point Ramp	0...999.9 unit/min
Time of One Interval	1...999 min.
Number of Cycles	1...99
Display	Two 4-digit, 7-segment for measured and set values; 4 LEDs for output states; Two 21-segment bargraphs
Power Supply	20...40 VDC/VAC 90...254 VDC/VAC
Supply Voltage Freq.	48...68 Hz
Power Consumption	<7 W
RTD Lead Resistance	Less than 10 Ω per lead
Lead Resis. Change Error	<0.2% of input
Cold Junction Error	<0.2% of input
Ambient Temp. Error	<0.2% per 10°C
Working Temperature	0...50˚C
Humidity	10...90% RH
Protection	IP40 on front panel
Electrical Safety	IEC 1010-1 + A1 and IEC 1010-1 + A1/A2 Category III; Level 2
EMC **Emission**	EN 50081-2
Immunity	EN 50082-2
Weight	300 g (0.7 lb)

ORDER CODE

Model **SCM5** – [ ] [ ] [ ] [ ] [ ] [ ]

MAIN INPUT
Universal Input — 1

ADDITIONAL INPUT
Without — 0
Current Linear 0/4...20 mA — 1
Voltage Linear 0...5/10 V — 2
Potentiometric Transmitter 0...100 Ω — 3
Potentiometric Transmitter 0...1000 Ω — 4

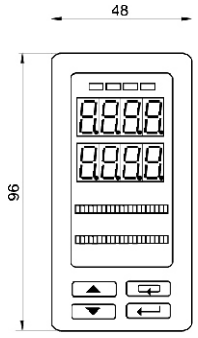
OUTPUTS
4 Relays with Change-over Contact — 1
4 OC Transistors — 2
1 Logic 0/19 V + 3 Relays — 3
1 Continuous Output + 3 Relays — 4
1 Continuous Output + 3 OC Transistors — 5
2 Continuous Outputs + 2 Relays — 6
2 Continuous Outputs + 2 OC Transistors — 7

COMMUNICATION
Without — 0
RS-485 interface with MODBUS Protocol — 1

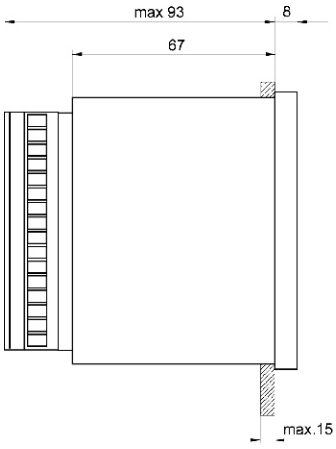
SUPPLY VOLTAGE
90...254 VAC or VDC — 1
20...40 VDC or VAC — 2

TYPE OF EXECUTION
Standard — 000

DIMENSIONS (mm)



Panel Cut:
45 x 92 mm + 0.6 mm



INDUMART INC.
1-15 West Pearce St., Richmond Hill, Ont. L4B 1H6, Canada
Tel.: (905) 707-9998 Fax: (905) 707-8484 e: sales@indumart.com web: www.indumart.com