spirax sarco

SX75
Process Controller

Description

The SX75 controllers are panel mounted, suitable for constant set point control of systems having fixed pre-programmed set points. The controller has universal inputs, and outputs using PID with Fuzzy algorithm for close control of industrial processes.
The SX75 controllers are for use in conjunction with our range of pneumatic (PN) and electric (EL) series actuators, valves and sensors.

Available types

There are two SX75 models available, the SX75 basic model and the SX75+, which includes retransmission output and serial communications.

SX75 technical data

Mounting arrangement		Panel mounting ⅛ DIN, panel depth 150 mm
Power supply		100 to 240 V 50/60 Hz -15 to +10% (250 V max.)
Electrical connections		Screw connection terminal block
Power consumption		4 VA
Front protection		IP54 (IP65 front protection kit available)
Operating temperature		0 to 50°C, humidity 35 to 85% RH
Climatic category		KWF to DIN 40040 or equivalent
Inputs	**RTD**	PT100 2 or 3 wire connection
	Linear mA	0 - 20 mA or 4 - 20 mA Input resistance 30 Ω with auxiliary 24 Vdc power supply
	Linear volts (V)	0 - 1 Vdc or 1 - 10 Vdc
		Input resistance 10 kΩ
	Thermocouples	Types J, K, S, (IEC 584), L DIN 43710)
Accuracy at 25°C ambient		0.2% ± 1 digit (for RTD Pt100 and thermocouple)
		0.1% ± 1 digit (for current or voltage)
Sampling time		500 ms
Auxiliary power supply		24 Vdc ± 10% for 2, 3 or 4 wire transmitter
Output 1	**Current**	4 - 20 mA isolated max. load 500 Ω
	Voltage	0 - 10 Vdc isolated min. load 500 Ω
	VMD (valve motor drive)	2 SPST interlocked normally open contacts rating 5 A, 250 Vac
	Relay	1 normally open contact rating 5 A, 250 Vac
	Logic voltage	0 - 18 Vdc ± 10%, 20 mA maximum isolated, suitable for driving solid state relays
Output 2		Relay normally open contacts, rating 5 A, 250 Vac for programmable Event
Output 3		Relay normally open contacts, rating 5 A, 250 Vac for programmable Event
Logic input		3 logic inputs used to select one of the set values available
Set point		4 set values available, for selection via keyboard or logic inputs (plus serial interface with SX75+)
Remote set point		4 - 20 mA (15 Ω) or 0 - 10 Vdc (330 kΩ) for summing the local and remote set values, setting a bias in engineering units, and setting ratio from -100 to +100%
Weight		600 g

SX75+
Additional technical data

Retransmission output 4	4 - 20 mA or 0 - 10 Vdc Retransmit process value (input measurement), or set point Accuracy 0.1% at 25°C, Resolution 12 bit (0.025%)
Serial communications	ASCII code / MODBUS-JBUS (Baud rate 600, 1 200, 2 400, 4 800 or 9600 bit/s)

Control action

Options of on-off, PID (I and D can be excluded), and PID-Fuzzy

Parameters

Proportional band	0.5 to 999.9%
Integral time	0.1 to 100 minutes
Derivative time	0.01 to 10 minutes
Fuzzy intensity	0 to 90%

SX75 features available:

- **Universal input**
  Resistance thermometers, thermocouples, mA and Volt.
- **Universal output**
  VMD (valve motor drive), mA and voltage for continuous, relay and logic for switching control.
- **Auxiliary power supply**
  For external transmitter requiring 24 Vdc.
- **PID with Fuzzy**
  Innovative control technique based on Fuzzy logic combined with standard PID algorithm for control of industrial processes.
- **Set point**
  The SX75 can operate with local set point, remote set point, or a choice of 4 set points can be selected.
- **Ramps**
  There are 2 independent ramps (ramp up and ramp down) for rate of change from one set point to another.
- **Remote set point**
  For cascade control (master/slave) using 2 controllers working together, or to remotely control the set point.
- **Event alarm**
  2 programmable relay outputs for deviation, band , and process alarms.
- **Auto/man**
  The automatic to manual mode can be changed via the key board, or logic inputs. Plus serial interface (with SX75+).

SX75+ additional features:

- **Serial communications**
  For access to all the parameters via PC. For connecting via a serial port RS 232 or RS 422 or RS 485, up to 64 controllers into a supervisory system.
- **Retransmission**
  For retransmission of the process value, set value, or as second control output.

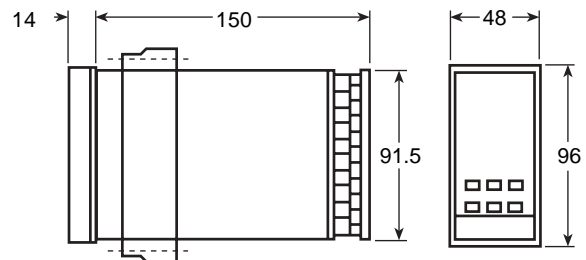## Accessories:

- IP65 front protection kit

How to order

1 off SX75 process controller **or** 1off SX75+ process controller.

Approvals

These instruments are CE marked. Therefore, it conforms to the council directive 89/336/EEC and the directive 92/31EEC, which modifies the directive 89/336/EEC (Electromagnetic Compatibility) by meeting the standards EN 50081-2 (Industrial emission) and EN 50082-2 (Industrial immunity). And the council directives 73/23/EEC (Low Voltage) as amended by article 13 of the directive 93/68/EEC, by meeting the standard EN 61010-1.
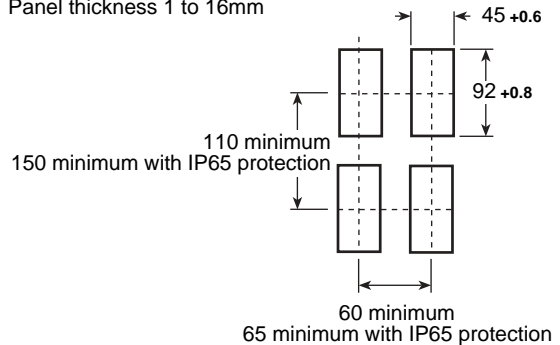
The enclosure material is self-extinguishing UL94V1. Isolation group C according to VDE 0110

Overall dimensions (approximate) in mm

Panel cut-out (approximate) in mm

Panel thickness 1 to 16mm

45 +0.6

92 +0.8

110 minimum
150 minimum with IP65 protection

60 minimum
65 minimum with IP65 protection

Wiring diagram

Serial communication (SX75+)

TX
RX

Remote set point

2-wire transmitter

Measuring input X

mA volt   J, L, K, S   Pt 100

Logic inputs

COM
IL1
IL2
IL3

0 %
100 %

Retransmission output (SX75+)

Single power supply
100 to 240 Vac - 50/60 Hz

Event alarm outputs

Relay
Relay 2nd channel (cool)   Valve motor drive

Continuous mA, V
Logic 0 - 18 Vdc

Main control output

+ 24 Vdc
4 - 20 mA