

# SX65 and SX75

Electronic process controllers



**spirax/sarco**

# A combination of simplicity and sophistication . . .

The SX range of process controllers from Spirax Sarco has been designed after carefully considering both technical and user requirements. It is this attention to detail which has led to the creation of a user friendly process controller range which is highly flexible and suitable for a wide range of industrial applications.

Simplicity is the hall mark of the SX65, which is the entry level model aimed at temperature control applications which have no more than two set points and little requirement for system integration. Where more sophistication is required, the SX75 provides the solution.

## Simplicity is the hall mark of the SX65

SX65



### Two set points

Two non-ramping set points with overshoot protection for added control flexibility.

### Input and outputs

RTD (Pt100) temperature input with models for valve motor drive (VMD) or 4 - 20 mA output.

### Retransmission

Retransmission of process value for chart recording (optional).

### Programmable alarms

For process safety monitoring and protection.

### Auto-tune

Self-setting PID parameters for ease and speed of commissioning.

# User benefit

# With a complete controls solution

- Control valve positioners.
- Instrumentation air filter regulators.
- Pneumatic and electronic controllers.
- Temperature, pressure, level and flow sensors.
- Electrically and pneumatically operated control valves.

Where more sophistication is required, the SX75 provides the solution

## Auto-tune

One shot auto-tune ensures quick and easy commissioning with automatic calculation of optimum PID parameters.

## Universal inputs and outputs

Configurable for RTD, thermocouples, mA and voltage input signals with VMD or mA output provides complete user flexibility.

## Programmable functions

Programmable functions include four set points, remote set point, two independent ramps, alarm options, auto/manual operation and optional retransmit signal provide the user with complete flexibility.

## Fuzzy logic

PID control parameters are backed-up by Fuzzy logic algorithms ensuring good control of difficult or critical process applications.

## Communications

SX75+ controllers have additional communications capability for centralised supervisory control (SCADA).



SX75

- Industry standard inputs and outputs for ease of installation and equipment interface
- Auto-tune for quick and easy commissioning, without product spoilage
- Part of a complete controls package from Spirax Sarco
- Simple to program - puts you in control

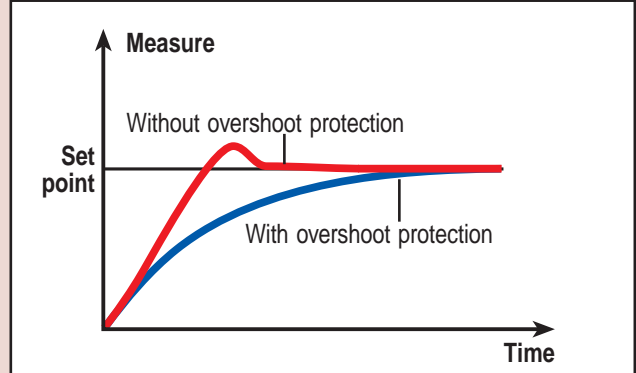
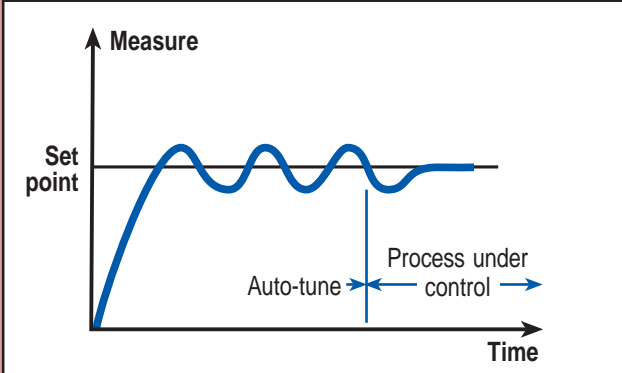


**Auto-tune**

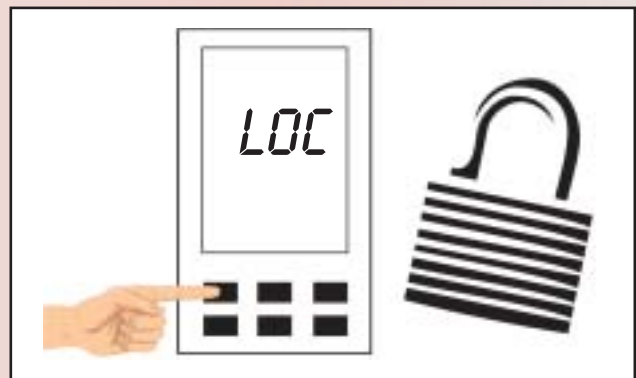
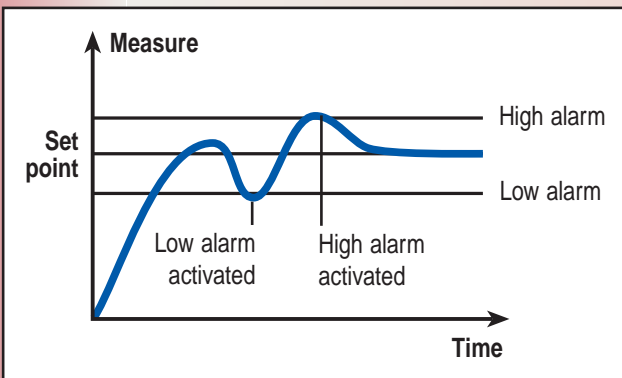
Algorithm calculates optimum values of PID during start-up to make commissioning quick and simple.

**Overshoot protection**

To stop product spoilage, overshoot protection can be enabled where speed to set point is not critical.



# SX65 controller



**Programmable alarms**

Protect your plant with programmable process or deviation alarms for high, low and band settings with options for latching, sequence and audio action.

**Keypad security**

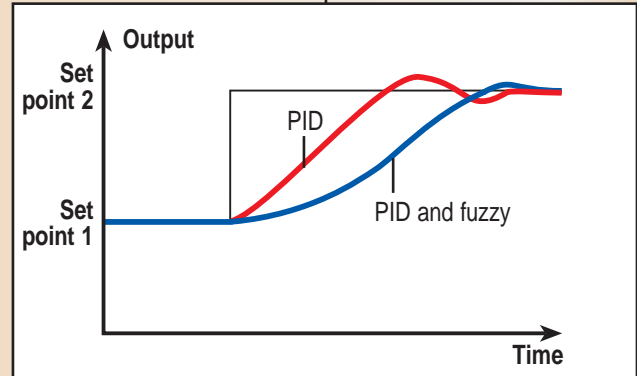
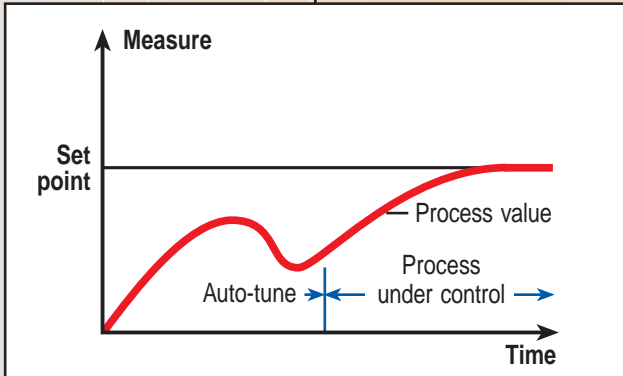
Controller can be made tamper-proof through simple coded keypad lock.

### Auto-tune

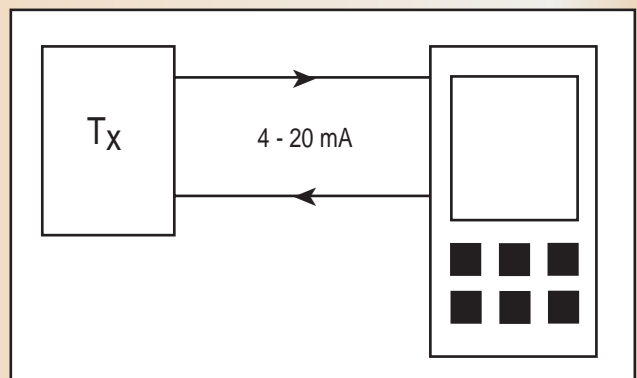
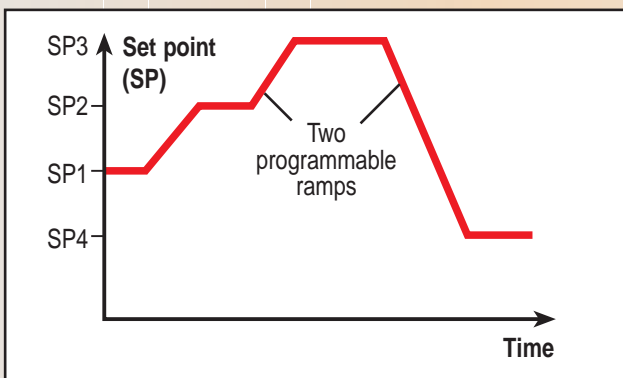
Sophisticated auto-tune function provides optimum values of PID and Fuzzy logic algorithms ensuring close control and process efficiency.

### Fuzzy logic

PID action integrated with Fuzzy logic algorithms provide a fast control reaction and eliminate oscillations due to load or set point changes.



# SX75 controller



### Set points

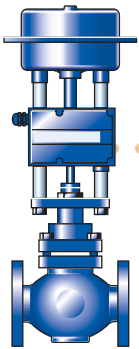
Up to four programmable set points plus two programmable ramps with local or logic input selection.

### 24 Vdc power supply

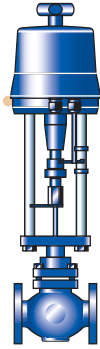
In-built 24 Vdc power supply for connection to sensor transmitters that require external loop power. This provides savings on installation and equipment costs.

# Control options

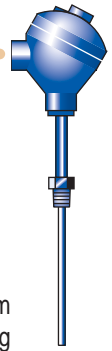
## SX65 controller



Pneumatic control valve

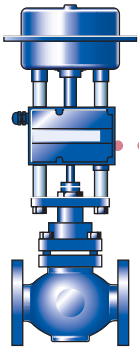


Electric control valve

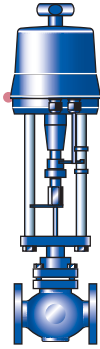


Process control from temperature sensing

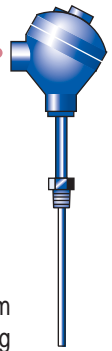
## SX75 controller



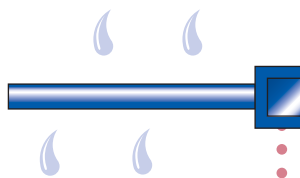
Pneumatic control valve



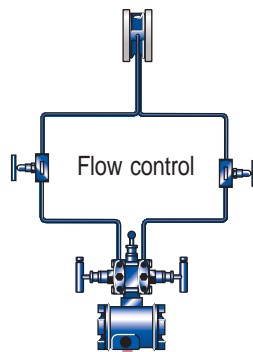
Electric control valve



Process control from temperature sensing



Humidity control



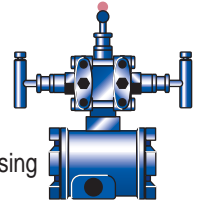
Flow control



Level sensing



Pressure sensing



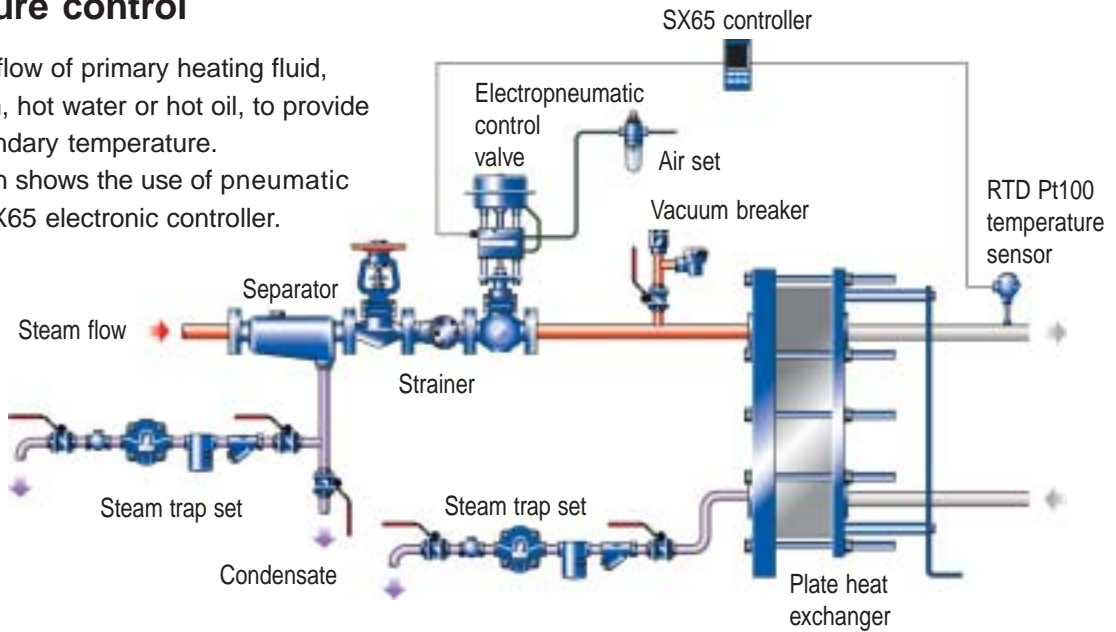
Differential pressure sensing



# Typical applications

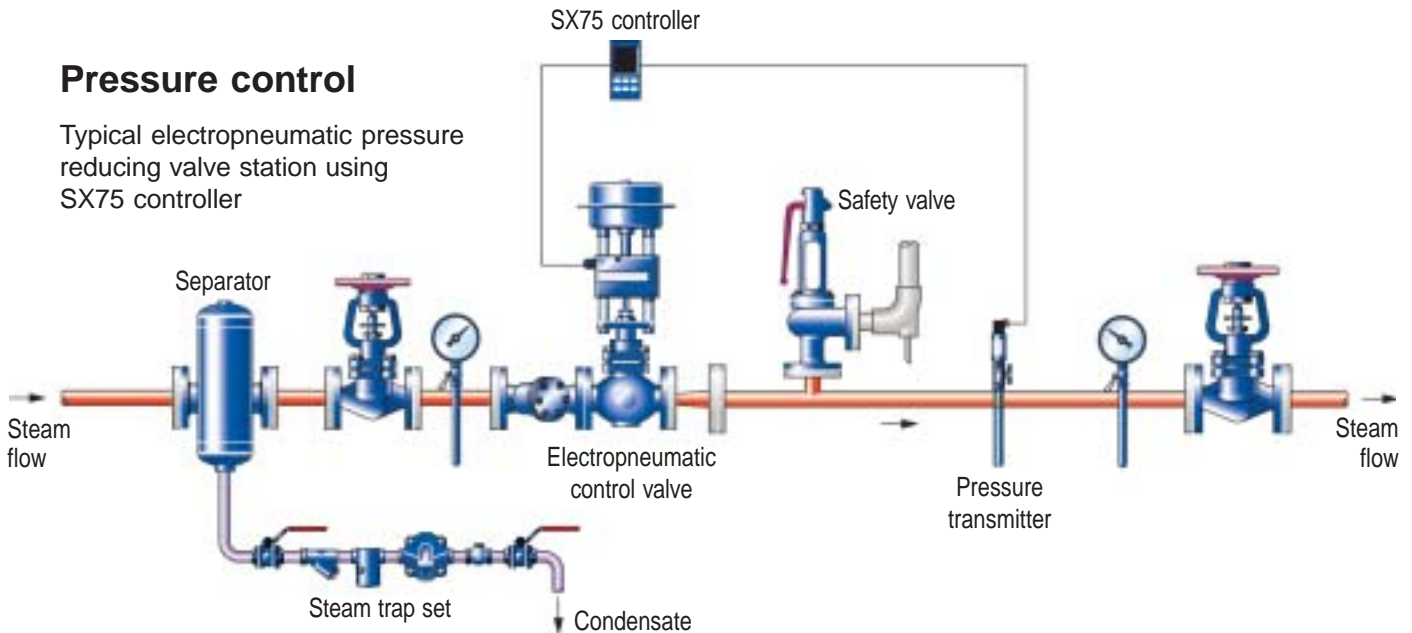
## Temperature control

To control the flow of primary heating fluid, whether steam, hot water or hot oil, to provide constant secondary temperature. This application shows the use of pneumatic power plus SX65 electronic controller.



## Pressure control

Typical electropneumatic pressure reducing valve station using SX75 controller

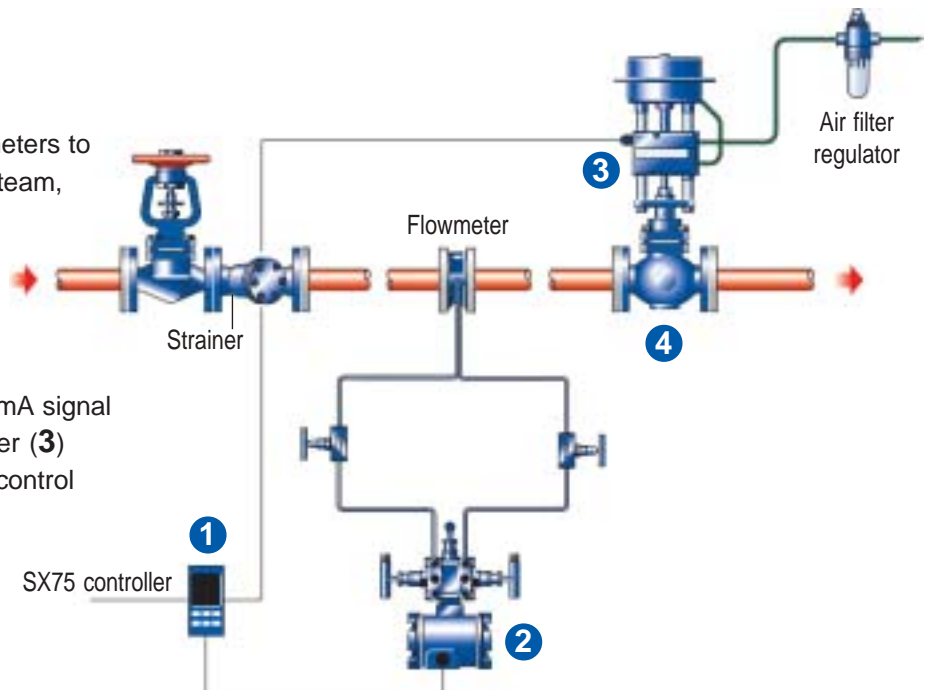


## Flow control

Used in conjunction with flowmeters to accurately control the flow of steam, gases or liquids.

The example shows the use of an SX75 controller (1) signalled from a flow transmitter (2).

The controller delivers a 4-20 mA signal to an electropneumatic positioner (3) fitted on the electropneumatic control valve (4).

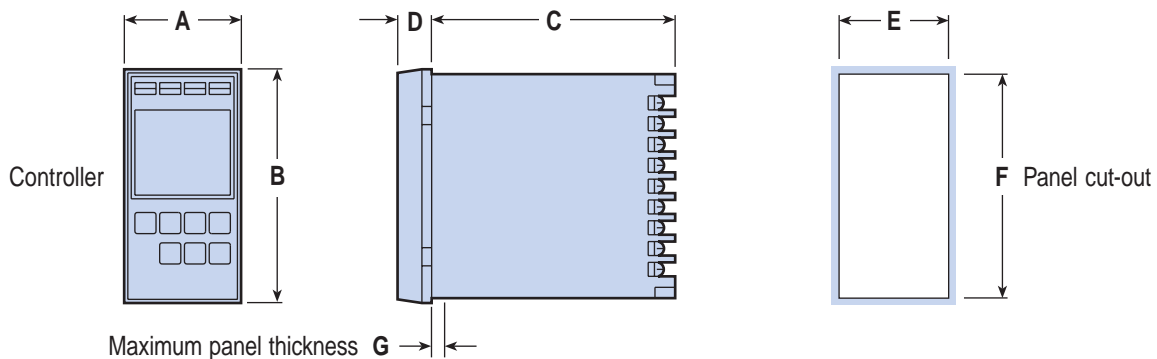


# Technical specifications

Specification	SX65 - mA	SX65 - VMD	SX75	SX75 +
<b>General specification</b>			With optional front cover protection kit *	
Panel mounted 1/8 DIN	●	●	●	●
IP front protection	54	54	54 (65)*	54 (65)*
100 - 240 Vac, 50 / 60 Hz mains supply	●	●	●	●
Power consumption	11 VA	11 VA	4 VA	4 VA
Operating temperature	0 - 50°C	0 - 50°C	0 - 50°C	0 - 50°C
Screw connection terminal block	●	●	●	●
<b>Inputs</b>				
RTD (Pt100) input	●	●	●	●
Linear mA input			●	●
Auxiliary power supply			●	●
Thermocouple input			●	●
Logic inputs	1	1	3	3
<b>Outputs</b>				
Valve motor drive output		●	●	●
Linear mA output	●		●	●
Retransmission	Optional			●
<b>General features</b>				
Programmable alarms	●	●	●	●
Security lockout	●	●	●	●
Overshoot protection	●	●		
Auto-tune	●	●	●	●
Fuzzy logic			●	●
Remote set point			●	●
Independent ramp			2	2
RS485 communications				●
Number of set points	2	2	4	4

## Dimensions (approximate) in millimetres

Model	A	B	C	D	E	F	G	Weight
SX65 -mA and SX65 - VMD	48	96	100	14	45	92	5	230 g
SX75 and SX75 +	48	96	150	14	45	92	16	600 g



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