

### GENERAL SPECIFICATION

<b>Displays</b>	Large 0.56" 4 digit High Efficiency Red 7 segment led display of measured temperature, 0.32" 4 digit High Efficiency Red 7 segment led display of setpoint and other variables Alarm Status Red leds. Heat Output Red led. Cool Output Green led.
<b>Switches</b>	Touch with Tactile Feedback.
<b>Facia</b>	Polyester, dustproof resistant to most liquids.
<b>Case</b>	Coated sheet steel case with plastic bezel
<b>Terminals</b>	Screw terminal blocks, incorporating 20 Amp thyristor protection fuse
<b>Dimensions</b>	Overall 96 x 96 x 165 mm behind panel depth Cut out 92 x 92 mm +0-0.8 mm to DIN 43700.
<b>Weight</b>	950 grams approx.
<b>Inputs (Fully configurable)</b>	Thermocouple, type B, J, K, N, R, S, T, Resistance Thermometer (Pt100), 3 wire. Automatic lead compensation Linear Volts, 0 - 5V, 0 - 10V, Linear mA, 0-20 mA, 4-20 mA, (burden resistor of 3R3 mounted on rear terminals)  Calibration overall 0.2% (For 10-50°C ambient) Including automatic CJC for thermocouple inputs Sampling rate 25 readings per second.
<b>Sensor Failure</b>	Thermocouple Open circuit detection, heat output off (Fail safe), Resistance thermometer Short circuit and open circuit detection. 4 - 20 mA Out of range detection.
<b>Control</b>	Three Term (P+I+D) fully adjustable : Proportional (Heat) 0.1 - 100.0% Proportional (Cool) 0.1 - 100.0% Integral 0 - 100.0 mins. Derivative 0 - 10.00 mins. Overshoot inhibition Adjustable for fast and slow response loads Heat/Cool Crossover + / - 99°C
<b>Outputs</b>	Channel 1 Heat output integral 20 Amp (4.5Kw) zero crossover thyristor. Channel 2 (Optional) Alarm Relay 2A/264V (changeover). Cool Logic; Relay 2A/264V (changeover). Channel 3 (Optional) Alarm Relay 2A/264V.
<b>Serial Communications</b>	Optional RS 232, RS 485.
<b>Supply</b>	85 - 264 Volts 50 / 60 Hz
<b>Power</b>	5VA Max.
<b>Operating temperature</b>	0 - 50°C

**ECO 9630** High performance 1/4 din (96 x 96 mm)  
high reliability processor based PID temperature controller  
with an internal 20 Amp (4.5 KW) thyristor



- ▶ Ideal replacement for analogue 96 x 96 controllers
- ▶ Dual Bright LED Displays of process variable and setpoint
- ▶ Thermocouple & Pt 100 Inputs (fully configurable)
- ▶ Microprocessor based / surface mount technology
- ▶ Proven, sophisticated, P I D control algorithm
- ▶ Tough coated steel case construction
- ▶ 165 mm deep, behind panel
- ▶ Complete with internal 20 Amp power control (4.5kW) thyristor
- ▶ Optional fully configurable alarms
- ▶ Designed and made in Great Britain
- ▶ Optional serial communications RS 232, RS 485 (early 2003)
- ▶ Configurable ramp to setpoint facility
- ▶ Two year parts and labour warranty

### The ECO 9630 1/4 DIN Controller is a quality temperature controller for direct control of resistive electrical heaters up to 20 Amps (4.5 kW) 240 Volt single phase

**Features** of the ECO 9630 thyristor controller include :

- Dual display giving continuous indication of both measured value and setpoint.
- Large finger size pushbuttons with positive tactile feel for ease of use.
- State of the art 16 bit CISC MCU.
- High resolution multi channel Analogue to Digital converter
- Surface mount technology.
- Universal input, thermocouple, RTD, linear DC.
- Universal 85 / 264 Volt power supply.
- Built in a coated steel case, which incorporates the 20 Amp thyristor within its 165 mm deep case.
- Sophisticated control algorithm, which adjusts the approach rate to setpoint thus minimising overshoot.
- Controllers may be supplied configured to incorporate an adjustable setpoint ramp, which limits the rate of setpoint change whenever the setpoint is adjusted.
- The 96 x 96 mm ¼ DIN size makes it ideal for replacement of obsolete analogue controllers.
- It is designed and manufactured to provide features, performance, stability and long reliable life associated with modern microprocessor based temperature controllers.
- Optional cool with 2 Amp time proportional relay output may be specified.
- Optional fully configurable alarms with 2 Amp relay outputs may be specified.
- Optional serial communications RS 232, RS 485.

#### Very simple to operate

The controller can be locked, so that the operator can only adjust the set temperature within a restricted range and interrogate the control parameters and alarms, but not adjust them.

#### Fully configured

All controllers are supplied fully tested and configured to your requirements they are ready to install and work. They may be reconfigured to a different thermocouple and temperature range in the manufacturers link mode.

#### Warranty

All ECO 9630 controllers are covered by 2 years parts and labour warranty.

#### Applications

The high specification together with the internal thyristor make the ECO 9630 controller ideal for such demanding applications such as temperature control of plastic extrusion machines, injection moulding machines, laboratory ovens and small heat treatment furnaces.



### ORDERING INFORMATION

ECO9630	Sensor type	Minimum Range	Maximum Range	Heat Output	Option 1	Option 2	Option 3 Software config.
T.C Type K NiCr / NiAl	Range 1	- 200 °C	1300 °C	H 20 AFC	A1 Alarm relay	A2 Alarm relay	Sb Sensor break
T.C Type J Fe / Con	Range 2	- 200 °C	800 °C	20 Amp Thyristor	CR2 Cool relay	RS 232 Comms.	*Sb0 Standard*
T.C Type R Pt 13% Rh	Range 3	0 °C	1700 °C		0 No option 1	RS 485 Comms.	Sb1 Man power heat
T.C Type S Pt 13% Rh	Range 4	0 °C	1700 °C			0 No option 2	Sb2 Man power cool
T.C Type N Nicrosil / Nisil	Range 5	- 200 °C	1300 °C				Sb3 Auto power heat
T.C Type T Copper / Con	Range 6	- 260 °C	400 °C				Sb 4 Auto power cool
T.C Type K NiCr / NiAl	Range 7	0.0 °C	999.9 °C				Sd Sensor detect
T.C Type J Fe/Con	Range 8	- 199.9 °C	800 °C				No auto recovery
T.C Type T Copper / Con	Range 9	- 199.9 °C	400.0 °C				*Yes auto recovery*
T.C Type B Pt6% 30% Rh	Range 10	40 °C	1800 °C				PU Power up/features
Pt 100 RTD	Range 16	- 200 °C	800 °C				*Stan Standard*
Pt 100 RTD	Range 17	- 199.9 °C	800 °C				Hold use last output
4 - 20 mA Linear							Full Full o/p for 15 sec plus then Hold option
0 - 20 mA Linear		0	4000				Soft power 0-100% over defined time-600 S
0 - 10 Volts Linear		0	4.000				Rate setpoint ramp
0 - 5 Volts Linear		0	40.00				
1 - 5 Volts Linear		0	400.0				
2 - 10 Volts Linear							

\*Factory default options

### ORDER CODE EXAMPLES

ECO9630	K Range 1	0	400	H 20 AFC	A1	0	0 Default
ECO9630	R Range 3	0	1400	H 20 AFC	A1	RS 485 Comms	Rate
ECO9630	4 - 20 mA	0.0	232.0	H 20 AFC	0	0	Sd No

### DIMENSIONAL DETAILS

