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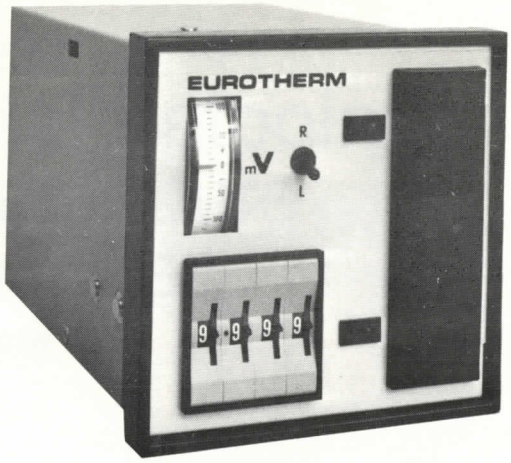
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Find the *Schneider Electric / Eurotherm 919* at our website: ***Click HERE***

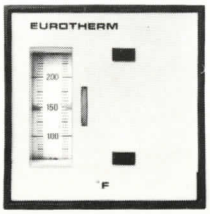
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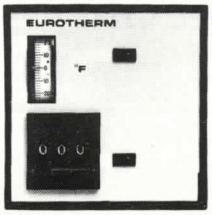
MODEL 990

900 Series Temperature Controllers

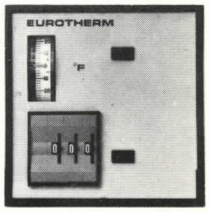
MODELS 917, 918, 919, 990



MODEL 917



MODEL 918



MODEL 919

- ☐ **High reliability — Solid state construction**
- ☐ **Precision control — Via 3-term control action (PID)**
- ☐ **Output stage power feedback — Corrects for line voltage changes**
- ☐ **Overshoot inhibition circuitry for fast start up without overshoot.**
- ☐ **Versatile — Plug-in circuit boards provide a wide range of inputs and outputs, as well as provides ease of servicing.**
- ☐ **5 year warranty**
- ☐ **Made in U.S.A.**

Precision control is insured by the 3-term control action, unique circuitry to inhibit overshoot on start up or setpoint change and output stage power feedback to compensate for line voltage variations. Ruggedly constructed and physically housed in a 3.78" x 3.78" x 6" deep case, the 900 Series affords maximum control capability in a minimum size package.

Controller inputs can be thermocouple, resistance thermometer or millivolt signals.

Thermocouple break protection and cold junction compensation are provided as standard on thermocouple input ranges.

As a standard option, controls required for normal operation are accessible behind a hinged door on the instrument fascia.

Important instrument functions are monitored on the front panel by LED indicators.

Specifications

SET-POINT RESOLUTION
± 0.25% of span (917), 1°or one least significant digit (918, 919, 990).

INPUT SIGNAL
Thermocouple, RTD, or mV (8 mVDC minimum)

DEVIATION INDICATION
Analog Meter

CALIBRATION ACCURACY
± 0.5% of span

PROPORTIONAL BAND
Adjustable 1-10% standard, 2.5-25% optional

INTEGRAL (RESET)
Fixed 6 mins. (.17 repeats/minute) standard, switched variable times optional (Model 990 variable times standard).

DERIVATIVE (RATE)
Fixed 1 min standard, switched variable time optional (Model 990 variable times standard).

OPERATING CONDITIONS
Temperature 0-50°C (32-122°F), Power supply 115VAC or 230VAC (field selectable) ± 15%, 49 to 62 Hz

STABILITY
Power Supply — less than 0.1% calibration shift for ± 15% variation from nominal supply voltage

Common Mode - 300 VAC sensor to ground maximum. Resulting error less than 0.1% of span

Temperature — drift typically less than 2 u V/°F or 0.1%/°F, whichever is greater.

MAXIMUM THERMOCOUPLE RESISTANCE
100 ohms (loop resistance)

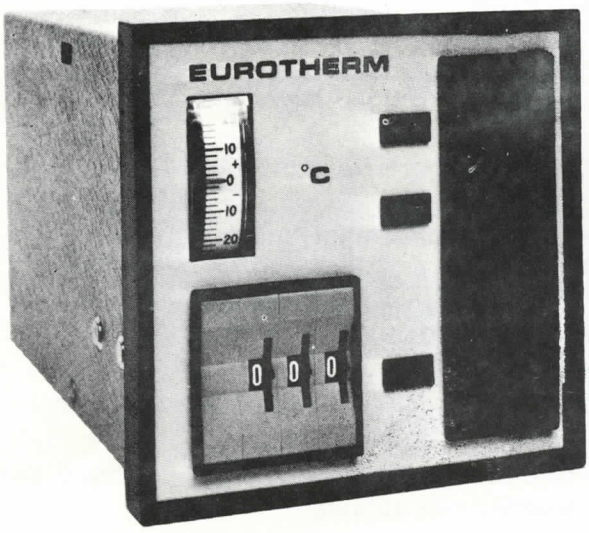
POWER CONSUMPTION
5VA maximum

WEIGHT
3 lbs.

SIZE
3.78 x 3.78 inches — 6 inches deep

Characterized Digital Setpoint Temperature Controller

MODEL 919



Specifications

SET-POINT
3 or 4 digit switch

SET-POINT RESOLUTION
1° or one least significant digit

INPUT SIGNAL
Thermocouple, RTD, or mV (8mVDC minimum)

DEVIATION INDICATION
± 6% of span for most ranges

CALIBRATION ACCURACY
± .5% of span

PROPORTIONAL BAND
Adjustable 1-10% standard, 2.5-25% optional

INTEGRAL (RESET)
Fixed 6 mins. (.17 repeats/minute) standard, variable times optional

DERIVATIVE (RATE)
Fixed 1 min. standard, switched variable times optional

OPERATING CONDITIONS
Temperature 0-50°C (32-122°F), Power supply 115VAC or 230VAC (field selectable) ± 15%, 49 to 62 Hz

STABILITY
Power Supply — less than 0.1% calibration shift for ± 15% variation from nominal supply voltage

Common Mode — 300VAC sensor to ground maximum. Resulting error less than 0.1%

Temperature — drift typically less than 2 u V/°F or 0.1%/°F, whichever is greater.

MAXIMUM THERMOCOUPLE RESISTANCE
100 ohms (loop resistance)

POWER CONSUMPTION
5VA maximum

WEIGHT
3 lbs.

SIZE
3.78 x 3.78 inches — 6 inches deep

Table 2
INPUTS AND SCALE

MODEL 917

RANGE	PREFERRED SCALES TABLE — °C										
	J	K	T	R	S	B	C	G	KP2	RTD 3 & 4	SCALE DIVISION
0-100°C										X	1°
0-200°C	X	X	X								1°
0-300°C	X		X								2°
0-400°C	X	X	X							X	2°
0-600°C	X	X									5°
0-800°C	X	X									5°
0-1300°C		X							X		10°
0-1600°C				X	X						10°
0-1800°C						X					10°
0-2000°C							X	X			10°
-100 to +100°C			X							X	1°

RANGE	PREFERRED SCALES TABLE — °F										
	J	K	T	R	S	B	C	G	KP2	RTD 3 & 4	SCALE DIVISON
32-200°F										X	1°
32-300°F			X								2°
32-400°F	X	X									2°
32-600°F	X		X								5°
32-800°F	X										5°
32-1200°F		X									10°
32-1400°F	X										10°
32-1600°F		X									10°
32-2400°F		X								X	10°
32-2900°F				X	X						10°
32-4000°F							X	X			20°
-150 To +200°F										X	2°

STANDARD MILLIVOLT RANGE/SCALES			
RANGE	SCALE	WITHOUT CJC (N)	SCALE DIVISION
0-10mV	0-100%	X	1%
0-20mV	0-100%	X	1%
0-30mV	0-100%	X	1%
0-40mV	0-100%	X	1%
0-50mV	0-100%	X	1%

END ZONE CONTROLLERS	
SET POINT RANGE	PROPORTIONAL BAND
– 1 to + 1mV	1mV
– 2 to + 2mV	2mV
– 3 to + 3mV	3mV
– 5 to + 5mV	5mV
All Compatible with "Master Controller Type 917 with setpoint range of ten times the above "Half Range" and Prop. Band of 10%.	

MODEL 918

RANGE	PREFERRED SCALES TABLE										
	J	K	T	R	S	B	C	G	KP2	RTD 3 & 4	DEVIATION SCALE
0-299°F	X										± 25°
0-399°F	X										± 25°
0-499°F	X										± 40°
0-599°F	X										± 25°
0-799°F	X										± 60°
0-999°F	X	X									± 60°
0-199°C	X										± 12.5°
0-399°C	X										± 25°

For other ranges see Model 919

INPUT RANGE	STANDARD MILLIVOLT RANGES		
	DIGIT SWITCH	WITHOUT CJC (N)	DEVIATION SCALE
0-10mV	99.9%	X	± 6%
0-20mV	99.9%	X	± 6%
0-30mV	99.9%	X	± 6%
0-40mV	99.9%	X	± 6%
0-50mV	99.9%	X	± 6%

MODEL 919

RANGE	PREFERRED SCALES TABLE												
	J	K	T	R	S	B	C	G1	G2	KP 2	RTD 3	RTD 4	DEVIATION SCALE
0-999°F	X	X											± 60°
600-1599°F		X											± 60°
0-2999°F (H or M)		X											± 250°
0-99.9°C											X	X	± 6°
0-399°C	X		X										± 25°
0-999°C	X	X											± 60°
200-1199°C		X											± 60°
600-1599°C				X	X								± 60°
1000-1999°C							X	X	X				± 60°

INPUT RANGE	STANDARD MILLIVOLT RANGES		
	DIGIT SWITCH	WITHOUT CJC (N)	DEVIATION SCALE
0-9.999mV	0-9.999	X	± 600uV
0-19.99mV	0-19.99	X	± 1.2mV
0-29.99mV	0-29.99	X	± 2.5mV
0-39.99mV	0-39.99	X	± 2.5mV
0-49.99mV	0-49.99	X	± 2.5mV

END ZONE CONTROLLERS*		
SETPOINT RANGE	PROPORTIONAL BAND	ERROR METER
0 to ± .999mV ("Linear" Switch)	1mV	± 600µV
0 to ± 1.99mV ("Linear" Switch)	2mV	± 1.2mV
0 to ± 2.99mV ("Linear" Switch)	3mV	± 2.5mV
0 to ± 4.99mV ("Linear" Switch)	5mV	± 4mV
*All Compatible with "Master Controller Type 919 with setpoint range of ten times the above "Half Range" and Prop. Band of 10%.		

MODEL 990

RANGE	PREFERRED SCALES TABLE												
	J	K	T	R	S	B	C	G1	G2	KP2	RTD 3	RTD 4	DEVIATION SCALE
0-999°F	X	X											± 12°
600-1599°F		X											± 12°
0-99.9°C											X	X	± 1.2°
0-399°C			X										± 4°
0-999°C	X	X											± 12°
200-1199°C		X											± 12°
600-1599°C				X	X								± 12°
1000-1999°C							X	X	X				± 12°

INPUT RANGE	STANDARD MILLIVOLT RANGES		
	DIGIT SWITCH	WITHOUT CJC (N)	DEVIATION SCALE
0-9.999mV	0-9.999	X	± 120µV
0-19.99mV	0-19.99	X	± 250µV
0-29.99mV	0-29.99	X	± 400µV
0-39.99mV	0-39.99	X	± 600µV
0-49.99mV	0-49.99	X	± 660µV

END ZONE CONTROLLERS*		
SETPOINT RANGE	PROPORTIONAL BAND	DEVIATION SCALE
0 to ± .999mV	1mV	± 120µV
0 to ± 1.99mV	2mV	± 250µV
0 to ± 2.99mV	3mV	± 400µV
0 to ± 4.99mV	5mV	± 600µV
*All Compatible with "Master" Controller with setpoint range of ten times the above "Half Range" and Prop Band of 10%.		

Table 1
OUTPUT CODES

SINGLE OUTPUT (Heat only)

DESIGNATION	DESCRIPTION	APPLICATION
SCT	Slow Cycle Triac 2A, 240VAC Zero Crossing Fired	Time proportional contactors
ZCP	Zero Crossing SCR trigger pulses	Eurotherm SCR power packs— Resistive loads
PAP	Phase Angle SCR trigger pulses	Eurotherm SCR power packs— Inductive and temperature sensitive loads
0-5V (0-10V)	Isolated 0-5V dc analog output (10mA)	Eurotherm drivers and external analog input devices
4-20mA (1-5mA, 0-10mA)	Isolated 4-20mA analog output (12 Vdc max)	SCR units, reactor control units, etc.
LGC	D.C. Logic output to drive solid state contactors.	Solid state contactors (3-32V dc)

DUAL OUTPUTS (HEAT/COOL)

HEAT CHANNEL	DESCRIPTION	APPLICATION
SCT	Slow Cycle Triac 2A, 240VAC Zero Crossing Fired	Time proportional contactors
ZCP	Zero Crossing SCR trigger pulses	Eurotherm SCR power packs Resistive loads
LGC	D.C. Logic output to drive solid state contactors.	Solid state contactors (3-32V dc)
COOL CHANNEL	**DESCRIPTION**	**APPLICATION**
SCT	Slow Cycle Triac 2A, 240VAC Zero Crossing Fired	Solenoid valves (water) or fan contactors (air)

CYCLE TIME
Slow cycle outputs — approx. 20 seconds at 50% power — not adjustable

Fast cycle outputs (optional) — .2 seconds at 50% power — not adjustable

Table 2
INPUT & RANGES

See Specific Models for Available Inputs

Table 3
PROPORTIONAL BAND

DESIGNATION	DESCRIPTION
P10	1-10% Adjustable Proportional Band
P25	2.5-25% Adjustable Proportional Band

NOTE:
When ordered without access door on front panel, proportional band potentiometer will be pre-set at maximum.

Table 4
3-TERM AMPLIFIER BOARD

DESIGNATION	DESCRIPTION
FT	Fixed Time Constants — Standard; integral (reset) time fixed at 6 minutes and derivative (rate) time fixed at 1 minute
DVT	Digital Variable Time Constants — Optional; integral (reset) time adustable from 1/8 - 32 minutes (9 steps) with off position and derivative (rate) adjustable from 1/16 - 8 minutes (9 steps) with off position

Table 5
VOLTAGE INPUT

DESIGNATION	DESCRIPTION
115V	115 and 230 volts A.C. input
105V	105 and 210 volts A.C. input

Table 6
REAR TERMINALS

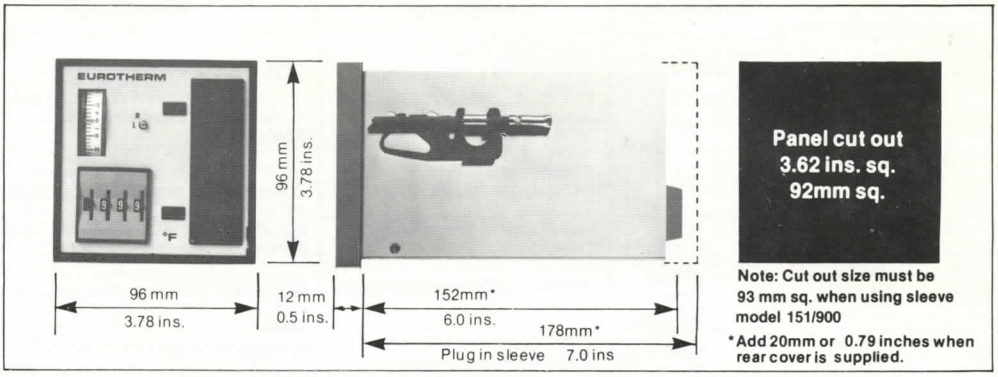
DESIGNATION	DESCRIPTION
S	Standard screw type terminals
X	Optional plug-in connectors for 151/900 sleeve

NOTE:
If plug-in option (x) is selected, Mounting sleeve 151/900 must be ordered separately

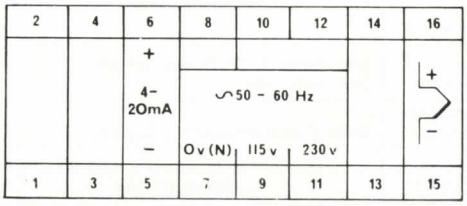
Table 7
OPTIONS

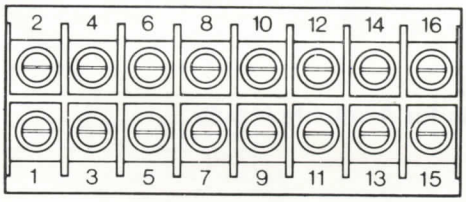
DESIGNATION	DESCRIPTION
A	Access door on instrument fascia for front adjustments
DL	Deviation Limit Alarm - adjustable from ± 1-10% of span above and below setpoint. 2A 240VAC - on-off action with contact closed above and below setpoint.
LL	Low Limit Alarm - adjustable from 1 - 10% of span below setpoint - 2A, 240VAC - on-off action with contact closed below setpoint
HL	High Limit Alarm - adjustable from 1 - 10% of span above setpoint - 2A, 240VAC - on-off action with contact closed above setpoint
RC	Rear terminal cover to shield electrical connections

Installation & Dimensional Details



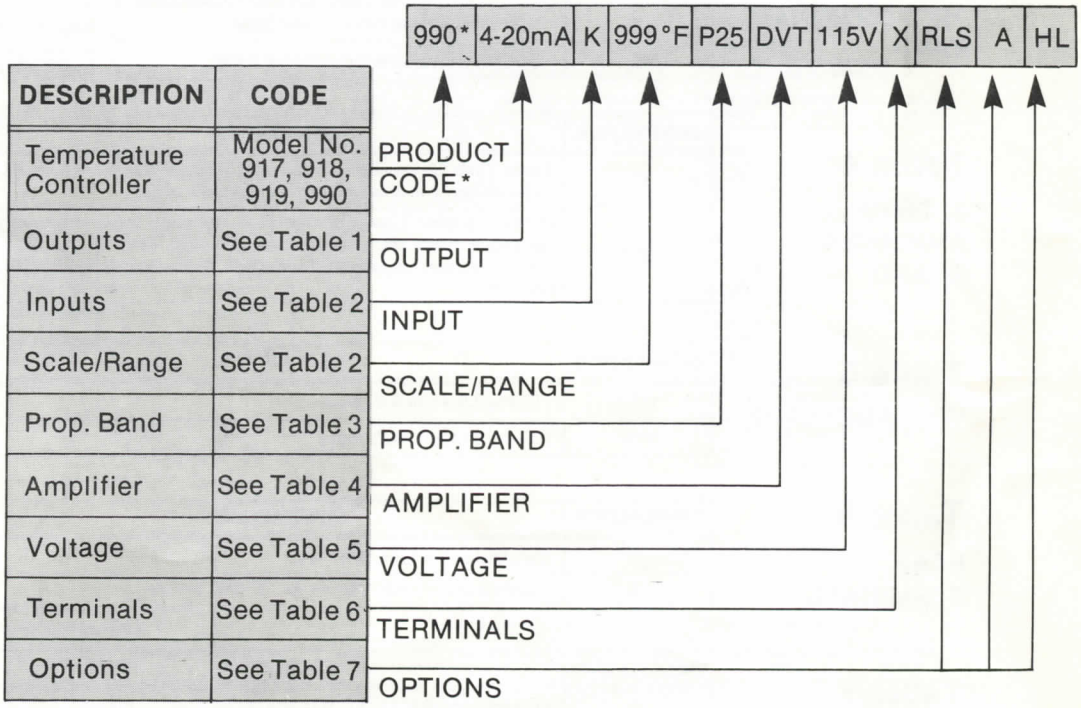
Rear Terminal Block (Typical)





Ordering Code

DESCRIPTION	CODE
Temperature Controller	Model No. 917, 918, 919, 990
Outputs	See Table 1
Inputs	See Table 2
Scale/Range	See Table 2
Prop. Band	See Table 3
Amplifier	See Table 4
Voltage	See Table 5
Terminals	See Table 6
Options	See Table 7



***NOTE: Instruments with either RTD 3 or RTD 4 inputs should have a product code 991 opposed to 990. Example 991/4-20mA/RTD3/K/999 °F/P25/DVT/115V/X/RLS/A/HL**

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