



ELC-10JT

High-density Signal Conditioners 10-RACK	
THERMOCOUPLE TRANSMITTER (field-programmable)	MODEL 10JT

MODEL & SUFFIX CODE SELECTION

10JT-□□□-R□

MODEL _____

INPUT THERMOCOUPLE _____

1 : (PR)	6 : B (RH)
2 : K (CA)	7 : R
3 : E (CRC)	8 : S
4 : J (IC)	N : N
5 : T (CC)	0 : Specify

OUTPUT 1 _____

A : 4 – 20mA DC

6 : 1 – 5V DC

OUTPUT 2 _____

0 : None

6 : 1 – 5V DC

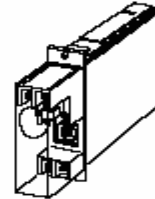
POWER INPUT _____

R : 24V DC

OPTIONS _____

/BN: No burnout

/BL : Downscale burnout



Functions & Features

- Accepting direct input from a thermocouple and providing two standard process signals
- Micro-processor based
- Field-programmable T/C type and temperature range
- Linearization
- Burnout protection
- High accuracy cold junction compensation
- Loop testing via hand-held programmer PU-2□
- Optional second channel output available at the front terminals and at the Standard Rack connector
- Fuse

Typical Applications

- Ideal for quick spare part
- High-accuracy cold junction compensation benefits narrow span measurements
- 0.1µA burnout sensing enables long distance transmission with minimum offset drifts
- Electric furnace (isolation)
- No burnout type can connect to a single T/C in parallel with a recorder

ORDERING INFORMATION

Specify code number and variables. Default setting (table below) will be used if not otherwise specified. K thermocouple setting will be used if the input code is not specified.

- Code number (e.g. 10JT-2A6-R/BL)
- Temperature range (e.g. 0 – 800°C)

INPUT CODE	DEFAULT	TEMPERATURE RANGE
1	PR	0 – 1800°C
2	K	0 – 1000°C
3	E	0 – 500°C
4	J	0 – 500°C
5	T	0 – 300°C
6	B	0 – 1800°C
7	R	0 – 1600°C
8	S	0 – 1600°C
N	N	0 – 1000°C

RELATED PRODUCTS

- Programming unit (model: PU-2□)

GENERAL SPECIFICATIONS

Construction: rack-mounted; terminal access via screw terminals at the front and via card-edge connector at the rear; terminal cover provided

Connection: M3.5 screw terminals (nickel-plated steel; torque ≤0.8 N-m) and card-edge connector

Housing material: flame-resistant resin (black)

Power input: supplied from card-edge connector

Power fuse: 0.5A

Isolation: input to output 1 to output 2 to power

Overrange output: approx. -10 – +120% at 1 – 5V

Adjustments: Programming Unit (model: PU-2□);

T/C type, temp. range, zero and span, simulating output, etc.

Burnout protection: upscale standard; downscale or no burnout optional

Linearization: standard

Cold junction compensation: CJC sensor attached to the input terminals

Specifications subject to change without notice

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INPUT & OUTPUT

INPUT: thermocouples
 Minimum span: 3mV
 Zero suppression/elevation: max. 3 times span
 Input resistance: 20k Ω minimum
 Burnout sensing: 0.1 μ A
 Temperature range

T/C	USABLE RANGE		MIN. SPAN	
	$^{\circ}$ C	$^{\circ}$ F	$^{\circ}$ C	$^{\circ}$ F
(PR)	0 to 1760	32 to 3200	370	670
K (CA)	-270 to +1370	-450 to +2500	75	140
E (CRC)	-270 to +1000	-450 to +1830	50	100
J (IC)	-210 to +1200	-350 to +2190	60	110
T (CC)	-270 to +400	-450 to +750	75	140
B (RH)	0 to 1820	32 to 3300	780	1440
R	-50 to +1760	-50 to +3200	360	680
S	-50 to +1760	-50 to +3200	380	700
N	-270 to +1300	-450 to +2370	110	200

Remark: For the temperatures that range below 0 $^{\circ}$ C, the transmitter may partially not satisfy the described accuracy. Consult factory.

OUTPUT 1

•DC Current: 4 – 20mA DC
 Load resistance: 600 Ω maximum

•DC Voltage: 1 – 5V DC
 Load resistance: 500 Ω minimum

OUTPUT 2: 1 – 5V DC

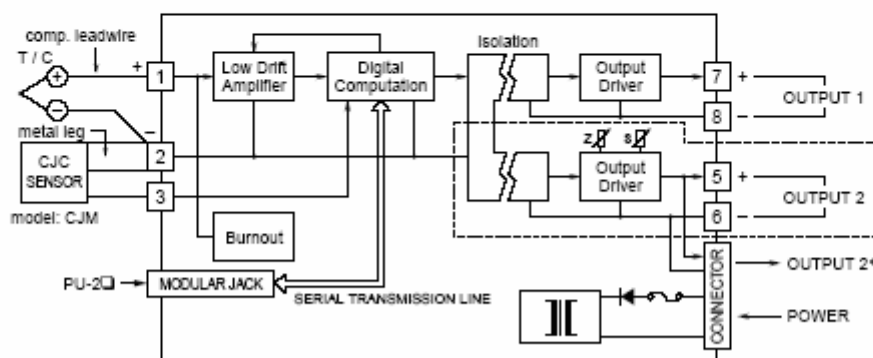
Load resistance: 5000 Ω minimum

INSTALLATION

Power input: 24V DC \pm 10% (ripple 10% p-p max.)
 approx. 60mA with voltage output 1
 approx. 90mA with current output 1
 Operating temperature: -5 to +55 $^{\circ}$ C (23 to 131 $^{\circ}$ F)
 Operating humidity: 30 to 90% RH (non-condensing)
 Mounting: Standard Rack 10BX \square
 Dimensions: W25 \times H99 \times D180 mm (0.98 \times 3.90 \times 7.09")
 See General Spec. Sheet Figure A-1.
 Weight: 220 g (0.49 lbs)
 Terminal assignment: See General Spec. Sheet Figure B-3.

PERFORMANCE in percentage of span

Accuracy: \pm 0.1%
 Linearization accuracy: \pm 0.05%
 Cold junction compensation error: \pm 0.5 $^{\circ}$ C or \pm 0.9 $^{\circ}$ F
 maximum (at 20 $^{\circ}$ C \pm 10 $^{\circ}$ C or 68 $^{\circ}$ F \pm 18 $^{\circ}$ F)
 Temp. coefficient: \pm 0.015%/ $^{\circ}$ C (\pm 0.008%/ $^{\circ}$ F)
 Response time: \leq 0.8 seconds (0 – 90%)
 Burnout response: \leq 10 seconds
 Line voltage effect: \pm 0.1% over voltage range
 Insulation resistance: \geq 100M Ω with 500V DC
 Dielectric strength: 500V AC @1 minute
 (input to output 1 to output 2 to power)
 1500V AC @1 minute
 (input or output or power to ground)

SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM

*1 output type has the output 1 connected to the card-edge connector in parallel.
 Remark 1) The section enclosed by broken line is only for 2nd output channel.

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