

# 8100

## 1/8 DIN Process Controller



The 8100 combine's technical functionality, field flexibility and ease of use to give you the best in comprehensive process control.

- Heat/Cool operation
- Two process alarms
- Loop alarm
- RS485 comms
- Ramping setpoint
- Auto/manual tuning
- Dual setpoint selection
- PC configuration



### Technical Data

#### Features

Control Types

Auto/Manual

Output Configuration

Alarm 1 & 2 Types

Human Interface

PC Configuration

#### Input

Thermocouple

RTD

DC Linear

Impedance

Accuracy

Sampling

Sensor Break Detection

#### Outputs & Options

Control & Alarm Relays

Control SSR Outputs

Solid State (Triac)

Outputs

Control DC Outputs

Retransmit Outputs

Communications

Dual Setpoint Selection

#### Operating & Environmental

Temperature & RH

Power Supply

Front Panel Protection

Approvals and Certification

Full PID with Pre-tune, Self-tune, Manual Tuning, or On-Off control. Heat only or heat & cool

Selectable from front panel, with bumpless transfer

Up to 3 total. Max 2 for control (Heat & Cool), max 2 for Alarms, max 1 for retransmit Process value or Setpoint

Process high, process low, SP deviation, band, logical OR and hysteresis. Also 1 loop alarm

4 button operation, dual 4 digit 10mm & 8mm high LED displays, plus 3 LED indicators

Off-line configuration from serial port to dedicated config socket (comms option not required)

J, K, R, S, T, B, L, & N.

3 Wire PT100, 50Ω per lead maximum (balanced)

0-20/4-20mA, 0-50/10-50mV, 0-5/1-5/0-10/2-10V. Scaleable -1999 to 9999, dec point available

>100MΩ for Thermocouple and mV ranges, 47KΩ for V ranges and 4.7Ω for mA ranges

+/- 0.25% of input span +/- 1 LSD (T/C CJC better than 0.7°C)

4 per second, 14 bit resolution approximately

<2 secs (except zero based DC ranges), control O/P's turn off, high alarms activate for T/C and mV ranges, low alarms activate for RTD, mA or V ranges

Contacts SPDT 2 Amp resistive at 240V AC, >500,000 operations

Drive capability >4.2V DC in 1KΩ (10V 500Ω version available)

0.01 to 1 Amp AC 20 to 280V, 47 to 63Hz

0-20/4-20mA into 500Ω max, 0-10/0-5V into 500Ω min. Accuracy typically +/- 0.5%

0-20/4-20mA into 500Ω max, 0-10/0-5V into 500Ω min. Accuracy typically +/- 0.25%

2 Wire RS485, 1200 to 9600 Baud, ASCII (Modbus Optional)

Selects between 2 SP's using volt free or TTL input (SP1 = -0.6 to 0.8V, SP2 = 2 to 24V)

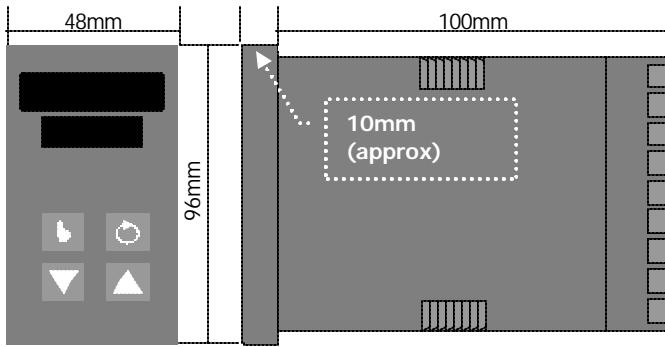
0 to 55°C (-20 to 80°C storage), 20% to 95% RH non-condensing

100 to 240V AC 50/60Hz (optional 20 to 55V AC/22 to 65V DC), approx 4 Watts

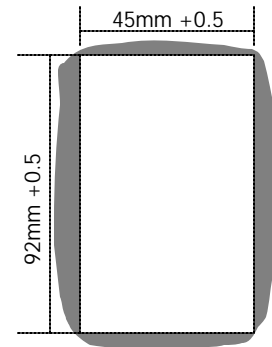
IEC IP66 (Behind panel protection is IP20)

CE, UL & ULc

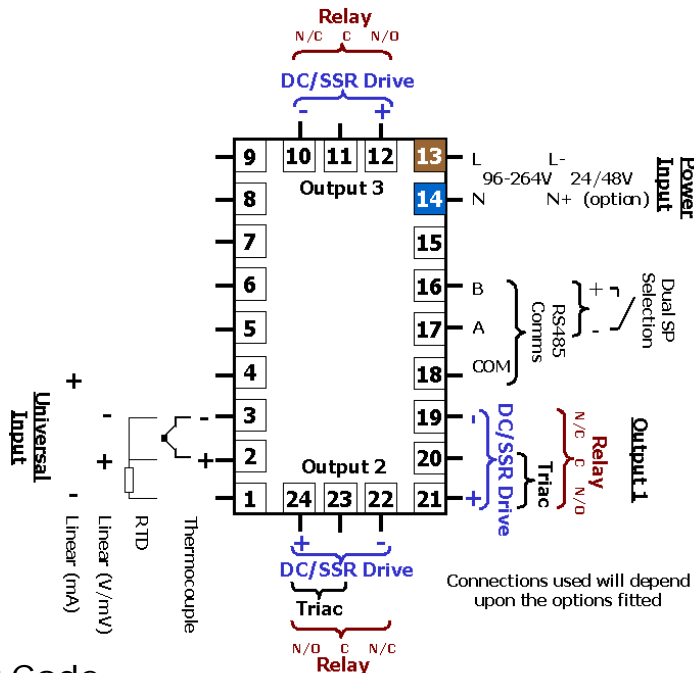
## Dimensions



## Panel Cut-out



## Connection Details



## Field Reconfiguration

### Input

Configurable to any type, no extra parts required

### Output 1

Type is fixed as ordered. Either Relay/SSR (selectable), Triac or DC Linear (selectable for mV, mA, Volts)

### Output 2

Configurable as Cool O/P or Alarm via plug-in Relay, SSR, Triac or DC Linear modules

### Output 3

Configurable as Alarm via plug-in Relay or SSR modules, or retransmit using DC Linear module

### Option Slot

Configurable as RS485 comms or dual setpoint selection, via plug-in modules

## Order Code

N8100 - X - X - X - X - XX

### Input type

3 Wire RTD or DC mV	1
Thermocouple	2
DC mA	3
DC Voltage	4

### Output 1

Relay Control	1
DC for SSR Control	2
DC 0-10V Control	3
DC 0-20mA Control	4
DC 0-5V SP Control	5
DC 4-20mA Control	7
Triac Control	8

### Output 2

Not fitted	0
Relay Control or Alarm 2	1
DC for SSR Control or Alarm 2	2
DC 0-10V Control	3
DC 0-20mA Control	4
DC 0-5V Control	5
DC 4-20mA Control	7
Triac Control	8

### Special Variants

Blank	Special variant not required
S09	MODBUS instead of ASCII comms (requires RS485 option)
S14	10V DC SSR outputs (requires SSR output codes)

### Options and Power Supply

00	No Options/100-240V AC line supply
02	No Options/24-48V AC or DC line supply
10	RS485 Comms/100-240V AC line supply
12	RS485 Comms/24-48V AC or DC supply
30	Dual Setpoint/100-240V AC line supply
32	Dual Setpoint/24-48V AC or DC supply

### Output 3

0	Not fitted
1	Relay Alarm 1 output
2	DC for SSR Alarm 1 output
3	DC 0-10V Re-Transmit PV or SP
4	DC 0-20mA Re-Transmit PV or SP
5	DC 0-5V Re-Transmit PV or SP
7	DC 4-20mA Re-Transmit PV or SP

In accordance with our policy of continuous improvement, we reserve the right to change specifications from those shown in this document.