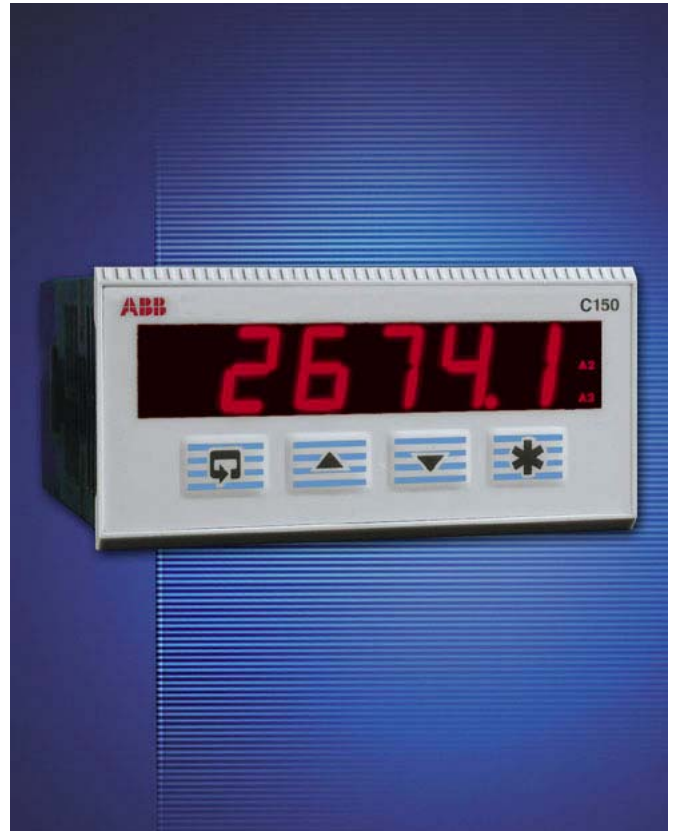


- **High visibility LED display**
  - the clearest view of your process status
- **0.1% measurement accuracy**
  - precise indication of process measurement
- **Analog and relay outputs as standard**
  - alarm and retransmission facilities built-in
- **Universal process input with transmitter power supply**
  - direct connection for any process signal
- **Hoseproof front panel and full noise immunity**
  - reliability in the harshest environments
- **RS485/Modbus serial communications**
  - SCADA, PLC and open system integration



**C150**  
the 1/8 DIN indicator to match all  
your display requirements



## C150

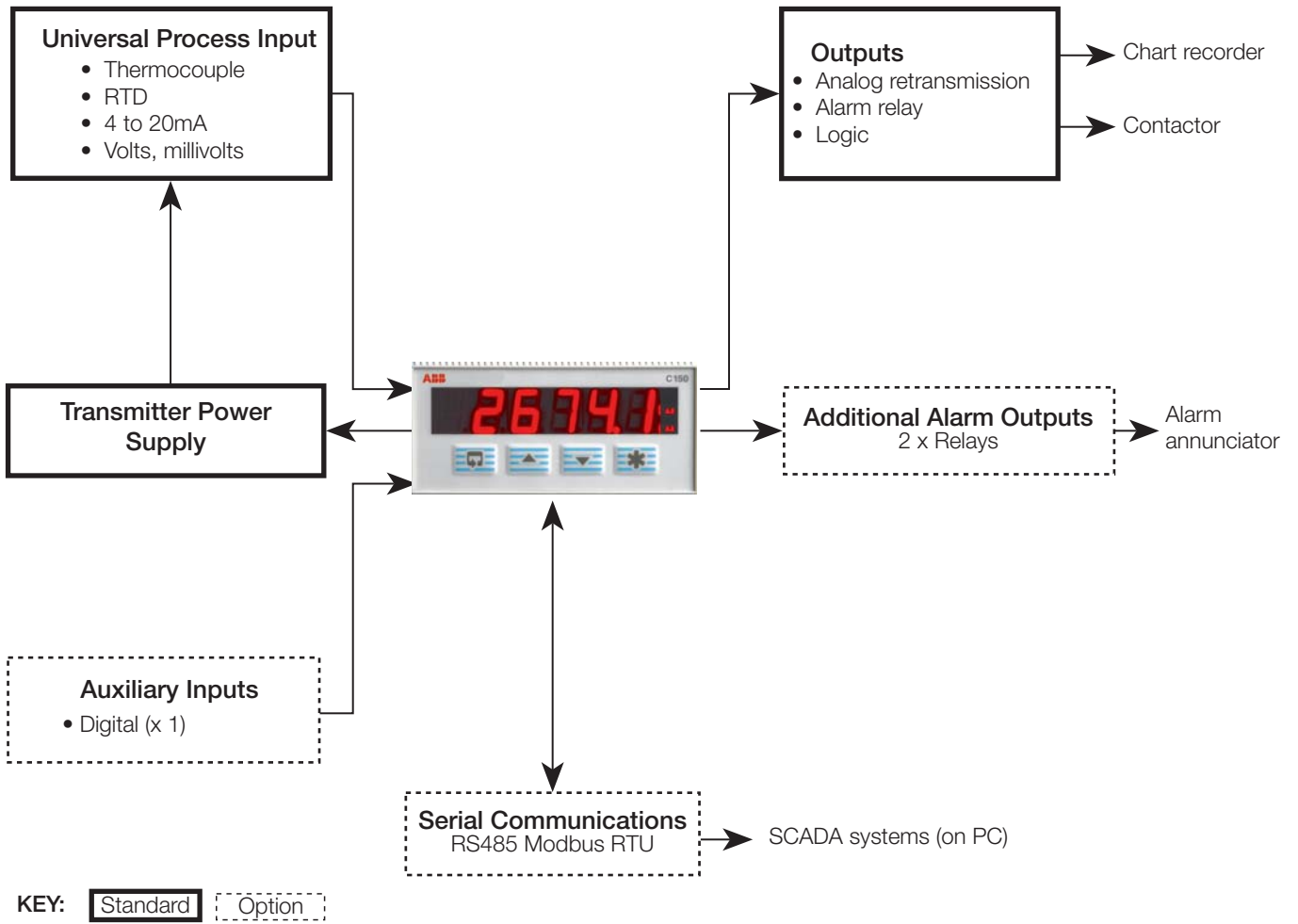
The C150 Universal Process Indicator is a highly versatile, 6-digit industrial display indicator, with the capability to measure and indicate temperature, pressure, flow, level and other process variables.

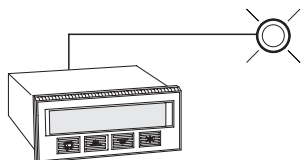
The standard C150 provides a retransmission output and alarm relay. Further relay outputs and RS485 communications may be added to suit your applications.

The configuration of the C150 is achieved simply by moving the security switch and entering a 4-digit code from the front panel keys. No passwords, no input links, no complications.

With hoseproof front panel protection as standard, and superior RF immunity, the C150 has been designed to provide reliable indication in the harshest environments.

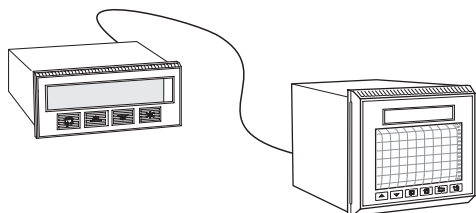






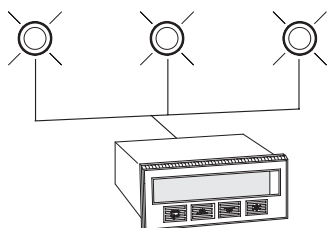
### Display and Alarm

The unit's built-in 5A relay can be used to annunciate a high or low process alarm. Active alarms are indicated by flashing LEDs to the right of the main display.



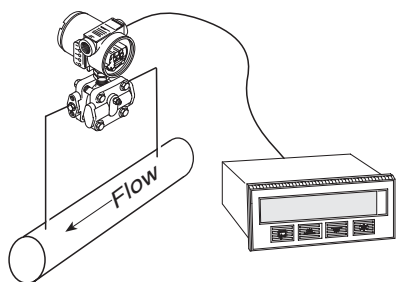
### Retransmission

The C150 has, as standard, a 4 to 20mA output for retransmission of the process variable to a chart recorder or data logger.



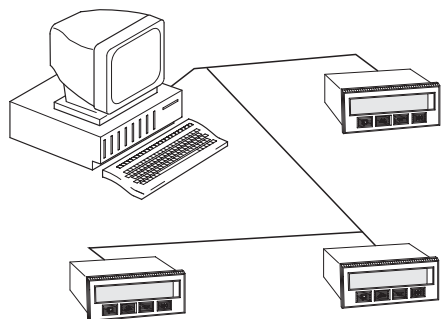
### Multiple Alarm Option

In addition to the standard alarm relay up to two extra alarm relays can be fitted to indicate a range of alarm states.



### Flow Totalization, 6 digits

A standard feature in the C150 is flow totalization. This totals any 4 to 20mA flow signal. With the built-in transmitter power supply and root extraction this makes the C150 ideal for use in simple Differential Pressure flow loops. Can also be configured for simple batch control by use of preset and predetermined totals.



### RS485/Modbus

Fitted with an optional RS485 serial communication board the C150 can communicate with PLCs and SCADA using the Modbus protocol.

## Specification

### Summary

Fully user-configurable  
Hoseproof front face  
Large six-digit display  
Totalizer/math functions as standard

### Operation

#### Display

High-intensity 7-segment, 1 x 6-digit LED display  
Three alarm LED indicators  
Display range                    -9999 to +99999  
Display resolution            ±1 digit  
Display height                 14mm (0.56inches)

#### Configuration

User-defined via front panel and internal links.

---

### Standard Functions

#### Totalizer

Six-digit, batch and secure totals

#### Alarms

Number                         Three user-defined  
Types                            High/low process  
                                      High/low latch

#### Math function

Maximum and minimum value detection  
Average value calculation



## ...Specification

### Analog Inputs

#### Number

One as standard

#### Input sampling rate

250ms per channel

#### Type

Universally configurable to provide:

- Thermocouple (THC)
- Resistance Thermometer (RTD)
- Millivolt
- Current
- DC Voltage

#### Input Impedance

mA 100Ω  
mV, V >10MΩ

#### Linearizer functions

Programmable for:

SqRoot, THC types B, E, J, K, N, R, S, T or Pt100

#### Broken sensor protection

Upscale drive on thermocouple and RTD

Downscale drive on milliamps and voltage

#### Cold junction compensation

Automatic CJC incorporated as standard

Stability <0.05°C/°C change in ambient temperature

#### Input protection

Common mode isolation >120dB at 50/60Hz with 300Ω imbalance resistance

Series mode rejection >60db at 50/60Hz

#### Transmitter power supply

24V, 30mA max. powers one 2-wire transmitter

### Standard Analog Input Ranges

Thermocouple	Maximum Range °C	Maximum Range °F	Accuracy (% of reading)
B	-18 to 1800	0 to 3270	0.1% or ±2°C (3.6°F) [above 200°C (392°F)] *
E	-100 to 900	-140 to 1650	0.1% or ±0.5°C (0.9°F)
J	-100 to 900	-140 to 1650	0.1% or ±0.5°C (0.9°F)
K	-100 to 1300	-140 to 2350	0.1% or ±0.5°C (0.9°F)
N	-200 to 1300	-325 to 2350	0.1% or ±0.5°C (0.9°F)
R	-18 to 1700	0 to 3000	0.1% or ±1.0°C (1.8°F) [above 300°C (572°F)] *
S	-18 to 1700	0 to 3000	0.1% or ±0.5°C (0.9°F) [above 200°C (392°F)] *
T	-250 to 300	-400 to 550	0.1% or ±0.5°C (0.9°F)

\* For B, R and S thermocouples, performance accuracy is not guaranteed below value stated

Min. span below zero Type T 70°C (126°F) Type N 105°C (189°F)  
THC standards DIN 43710 IEC 584

RTD	Maximum Range °C	Maximum Range °F	Accuracy (% of reading)**
Pt100	-200 to 600	-325 to 1100	0.1% or ±0.5°C (0.9°F)

\*\* RTD, 3-wire platinum, 100Ω per DIN 43760 standard (IEC 751), with range of 0 to 400Ω

Linear Inputs	Range	Accuracy (% of reading)
Milliamps	0 to 20mA	0.2% or ±2μA
Milliamps	4 to 20mA	0.2% or ±2μA
Volts	0 to 5V	0.1% or ±200μV
Volts	1 to 5V	0.1% or ±200μV
Millivolts	0 to 50mV	0.1% or ±20μV

Square Root Input	Range	Accuracy (% of reading)***
Milliamps	4 to 20mA	0.2% or ±2μA

\*\*\* Below input of 4.64mA (20% flow) the input is linear



## Outputs

### Retransmission

Analog, configurable in the range of 4 to 20mA  
Max. load 15V (750Ω at 20mA)  
Accuracy ≤ 0.25% of span  
Dielectric 500V DC from I/P  
(not isolated from logic O/P)  
Assignable to Process Variable or Average PV

### Logic output

18V DC at 20mA  
Min. load 400Ω  
Isolation 500V from I/P  
(not isolated from retransmission O/P)

### Relay output

One relay as standard (SPDT) 5A at 115/230V AC  
Assignable to alarms, totalizer count pulse, totalizer wrap pulse or end of batch alarm.

## Options

One option board can be installed from

Type 1	One relay
Type 2	Two relays + one digital I/P
Type 3	One relay + one digital I/P + Modbus serial communications

### Relay output

SPDT	5A at 115/230V AC
Assignable to	alarms

### Digital input

Type	Volt-free
Minimum pulse	250ms

### Modbus serial communications

Connections	RS422/RS485, 2 or 4-wire
Speed	2.4k or 9.6k baud rate
Protocol	Modbus RTU slave



## ...Specification

### Physical

#### Size

96mm wide x 48mm high x 125mm depth  
(3.78 in. wide x 1.89 in. high x 4.92 in. depth)

#### Weight

250g (0.5lb) approximate

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### Electrical

#### Voltage

85V min. to 265V max. AC 50/60Hz  
(24V DC option)

#### Power consumption

<6VA

#### Power interruption protection

<60ms/< 3 cycles, no effect  
>60ms/>3 cycles, instrument returns to operation after a controlled reset

### Environmental

#### Operating limits

0 to 55°C (32 to 131°F)  
5 to 95% RH non-condensing

#### Temperature stability

< 0.02% of reading or 2µV/°C (1µV/°F)

#### Front face

IP65 (NEMA3), case rear IP20

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### EMC

#### Emissions and Immunity

Meets requirements of IEC 61326 for an Industrial Environment

#### Design and manufacturing standards

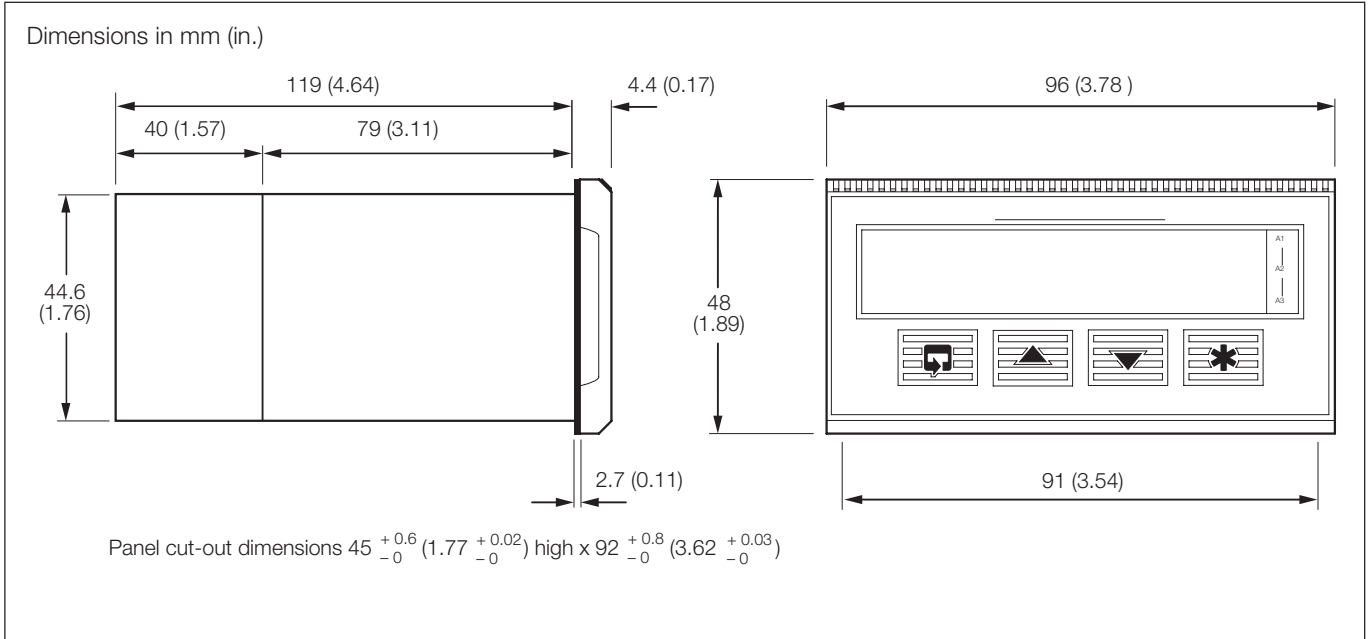
CE mark

#### Safety standards

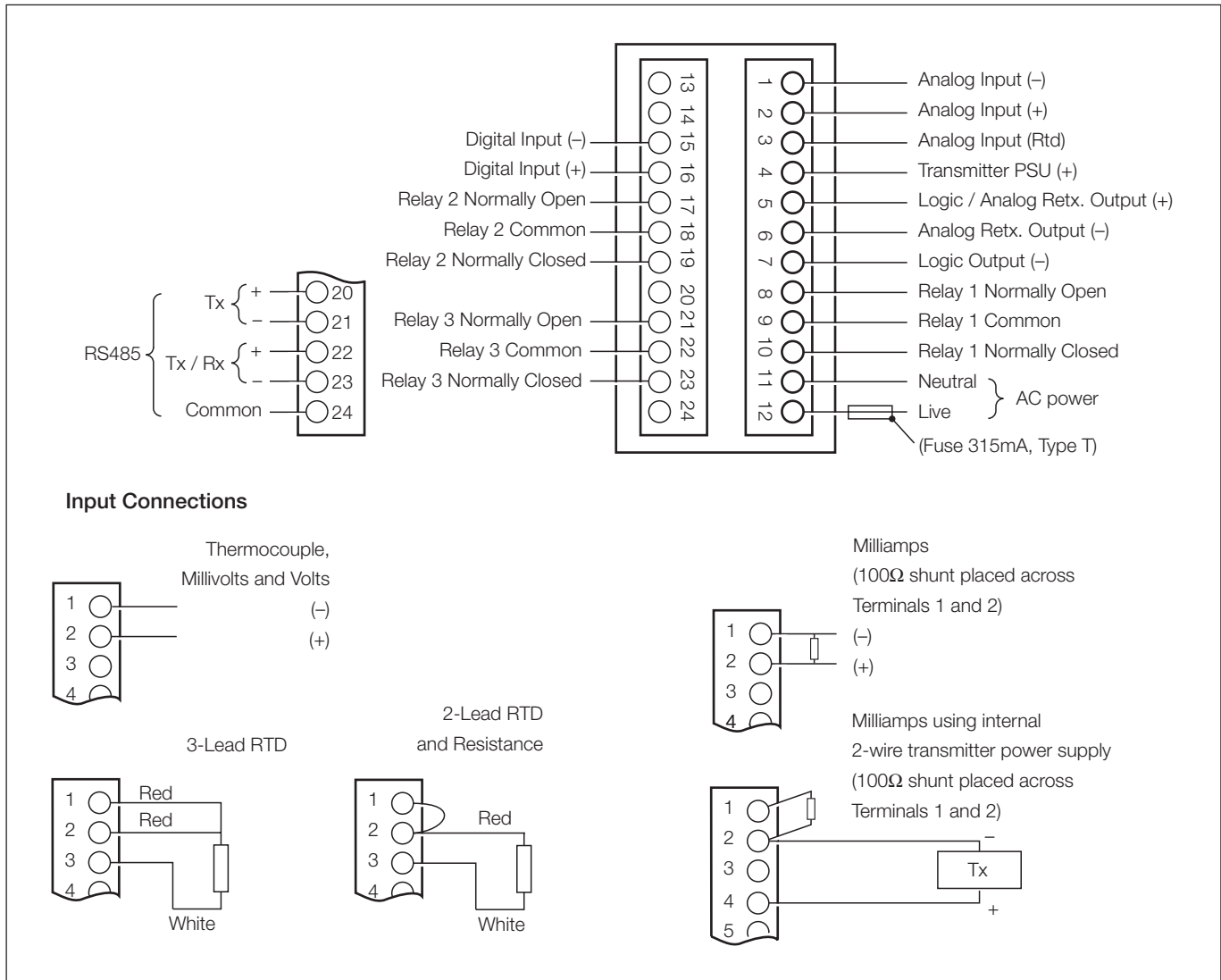
EN61010 – 1  
C22.2 No. 1010  
UL 310 – 1  
FM 3810



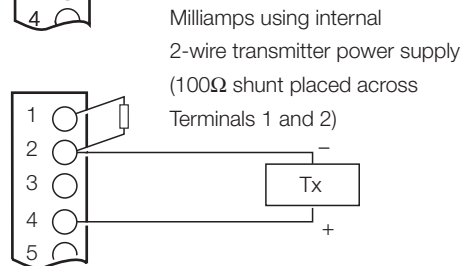
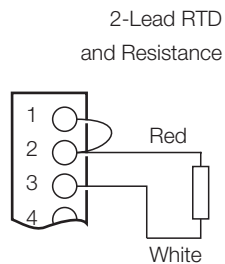
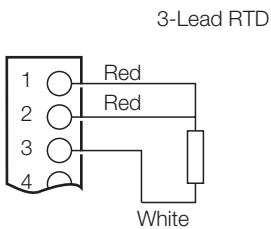
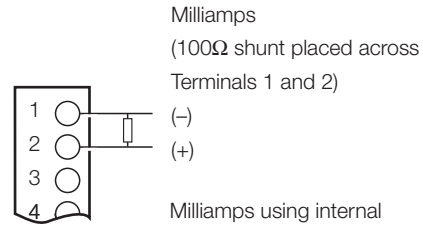
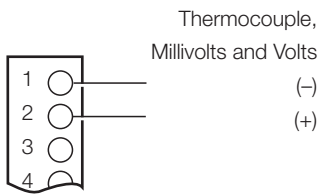
### Overall Dimensions



## Electrical Connections



### Input Connections



### Ordering Information

C150 1/8 DIN Universal Process Indicator	C150	/	X	X	X	X	/	X	X	X	X
<b>Options</b>											
None			0	0							
1 additional relay			0	1							
2 additional relays + one digital input			0	2							
1 additional relay + one digital input +RS485/Modbus			0	3							
<b>Power Supply</b>											
85V min. to 265V max. AC										0	
24V DC										1	
<b>Build</b>											
ABB Standard											0
CSA approval											1
UL approval											2
FM approval											4
<b>Programming/Special Features</b>											
Configured to factory standard											S T D
Configured to customer requirements											C U S
Special features											S P X X

\* As standard the C150 is fitted with one relay, analog output, logic output, universal input and transmitter power supply

### Accessories

PC Configuration Kit (part no. C100/0700)

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