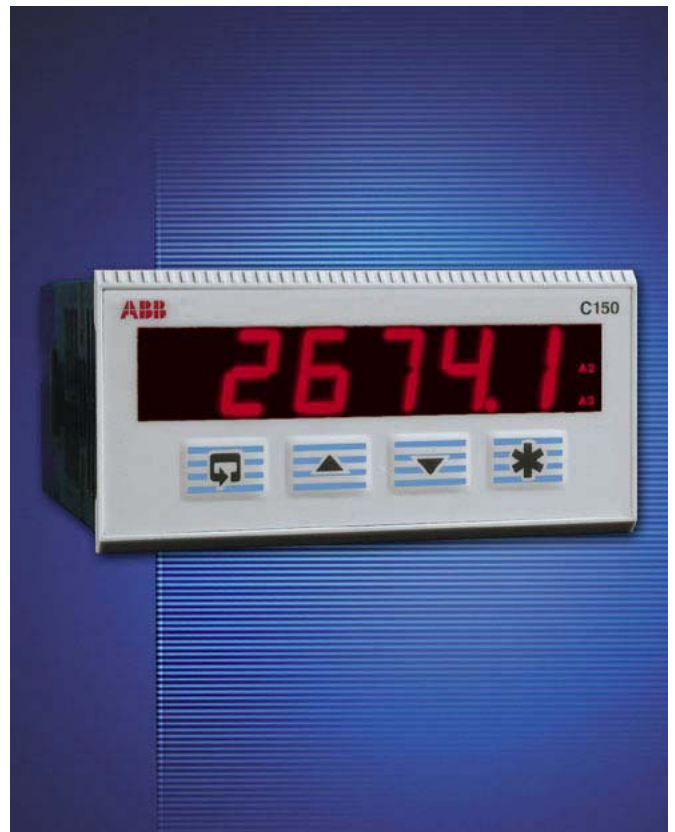


- **High visibility LED display**
 - the clearest view of your process status
- **0.1% measurement accuracy**
 - precise indication of process measurement
- **Analog and relay outputs as standard**
 - alarm and retransmission facilities built-in
- **Universal process input with transmitter power supply**
 - 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

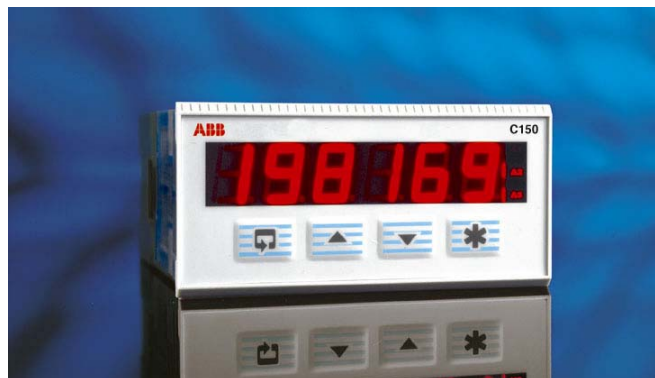
C150

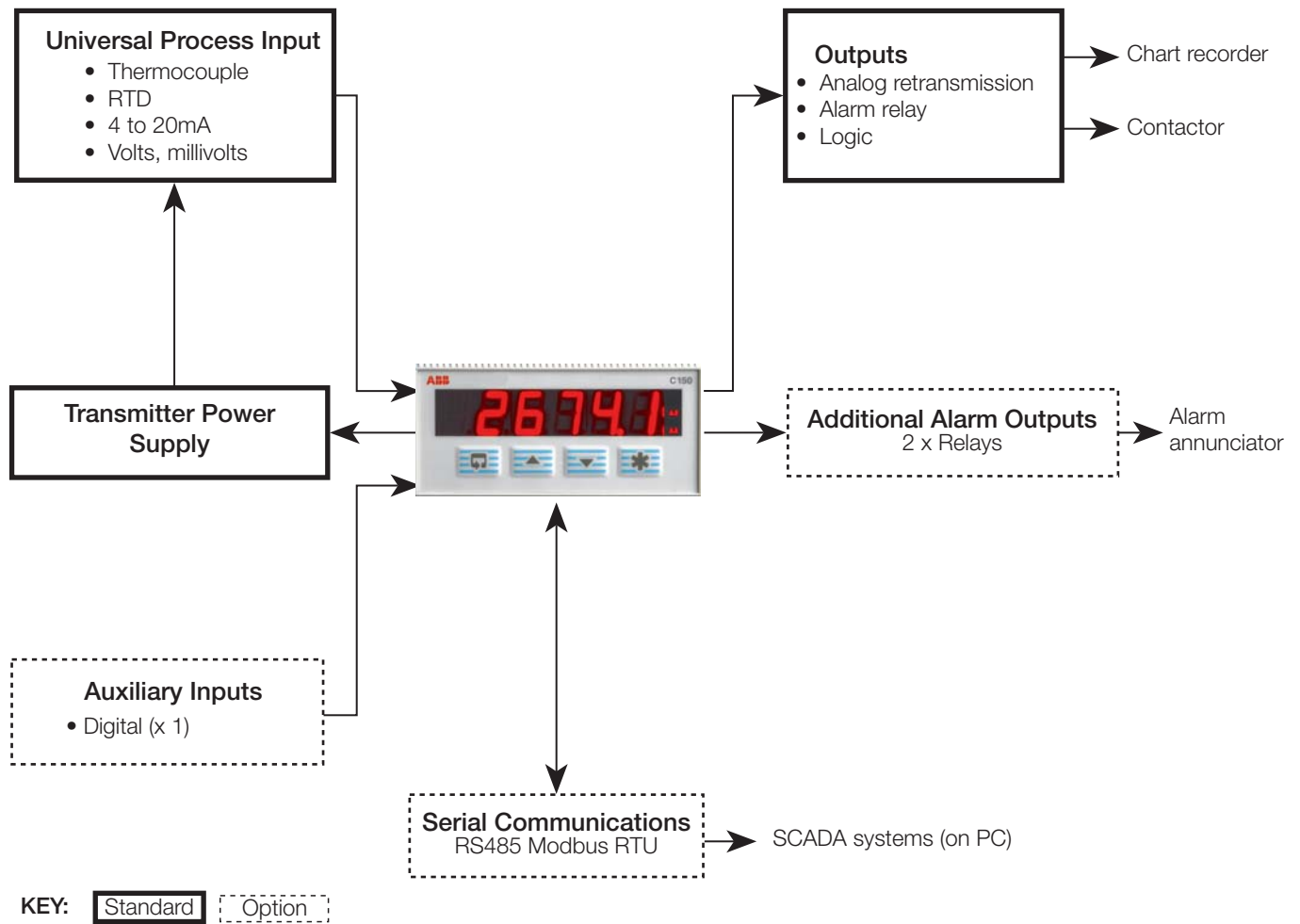
The C150 Universal Process Indicator is a highly versatile, 6-digit industrial display indicator, with the capability to measure and indicate temperature, pressure, flow, level and other process variables.

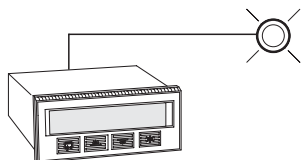
The standard C150 provides a retransmission output and alarm relay. Further relay outputs and RS485 communications may be added to suit your applications.

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.

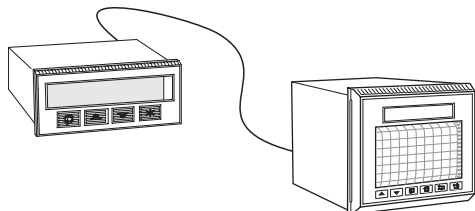






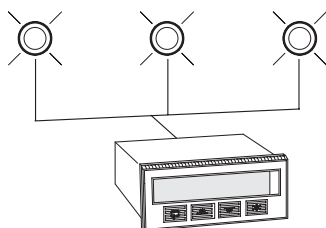
Display and Alarm

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.



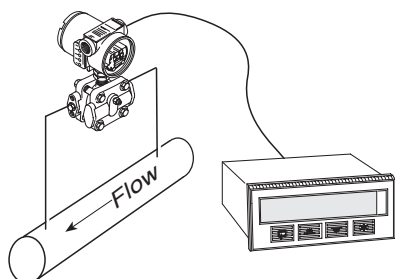
Retransmission

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



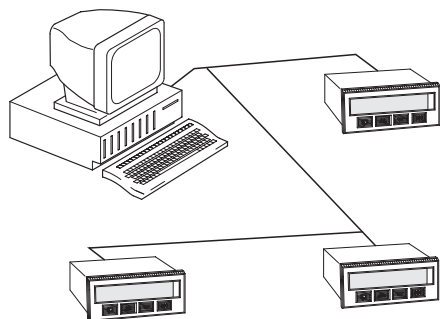
Multiple Alarm Option

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

- mA100Ω
- 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, 5A at 24V DC
- 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

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

EMC

Emissions and Immunity

Meets requirements of IEC 61326 for an Industrial Environment

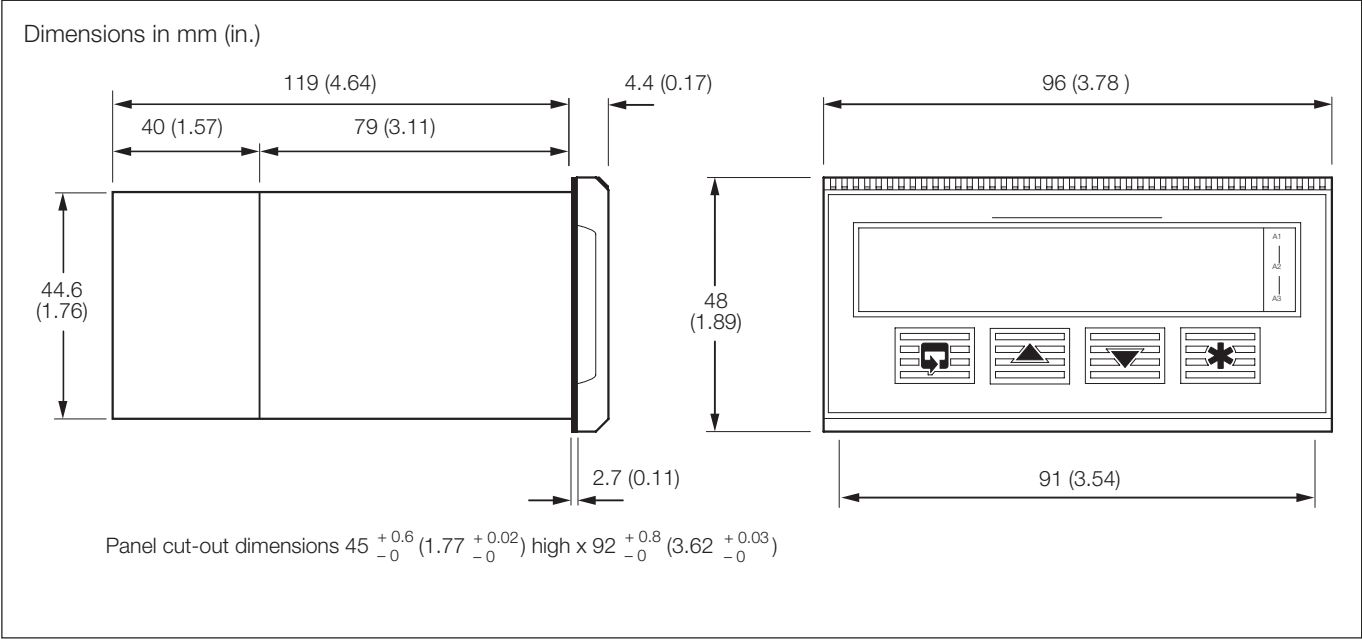
Design and manufacturing standards

CE mark

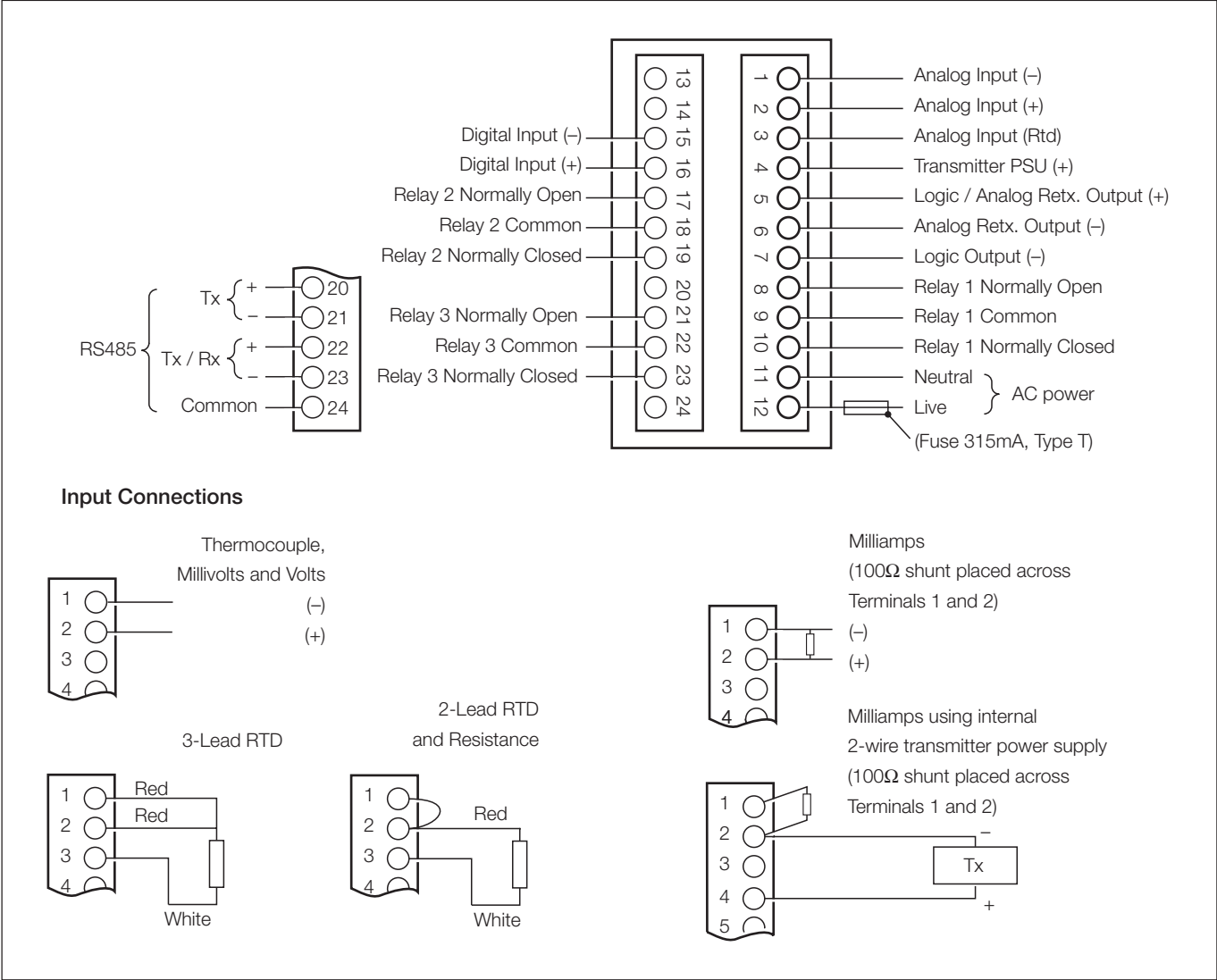
Safety standards

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

Overall Dimensions



Electrical Connections



Ordering Information

C150 1/8 DIN Universal Process Indicator		C150	/	X	X	X	X	/	X	X	X	X
Options												
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							
Power Supply												
85V min. to 265V max. AC							0					
24V DC							1					
Build												
ABB Standard							0					
CSA approval							1					
UL approval							2					
FM approval							4					
Programming/Special Features												
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)

Licensing, Trademarks and Copyrights

Modbus™ is a trademark of Modicon, Inc.

Windows™ is a trademark of the Microsoft Corp.

ABB has Sales & Customer Support
expertise in over 100 countries worldwide

www.abb.com

The Company's policy is one of continuous product
improvement and the right is reserved to modify the
information contained herein without notice.

Printed in UK (08.07)

© ABB 2007



ABB Limited

Howard Road, St Neots
Cambridgeshire
PE19 8EU
UK
Tel: +44 (0)1480 475321
Fax: +44 (0)1480 217948

ABB Inc.

125 E. County Line Road
Warminster
PA 18974
USA
Tel: +1 215 674 6000
Fax: +1 215 674 7183