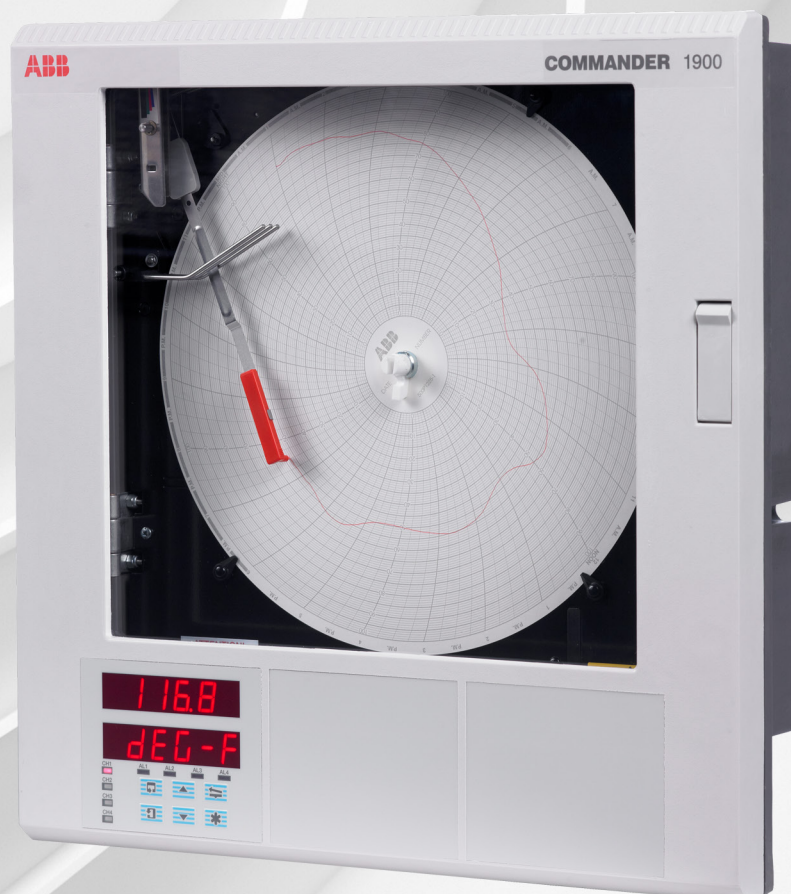


ABB MEASUREMENT & ANALYTICS | DATA SHEET

C1901

Single pen circular chart recorder



Measurement made easy

C1901 – a rugged, reliable recorder for all single channel recording applications

Universal process input

- mA, mV, V, thermocouples and resistance

Signal linearization

- full range of linearizers included as standard

6-digit indicator panel

- continuous display of process value

NEMA 4X/IP66 construction

- hosedown protection

Optional totalizer function

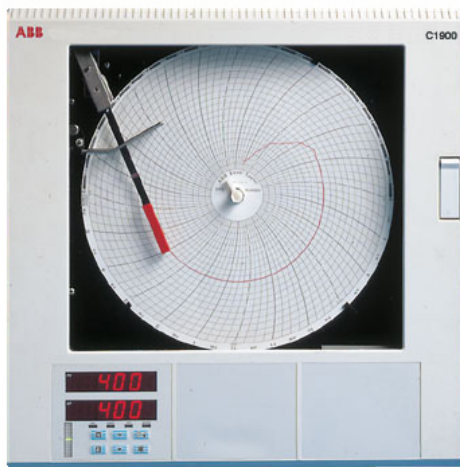
- 8-digit flow totalizer

C1901

The C1901 is a single pen, fully programmable circular chart recorder. The instrument's straightforward operator controls and robust construction make it suitable for a variety of industrial environments.

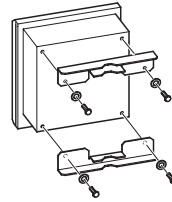
Designed to survive

NEMA 4X protection ensures the C1901 can survive in the harshest environments and makes the recorder ideal for use in panels which are regularly hosed down. The tough, acid-resistant case and secure cable-entry glands maintain the NEMA 4X rating for wall-mount or pipe-mount instruments.

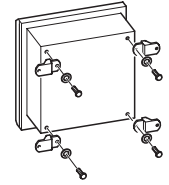


Easy to install

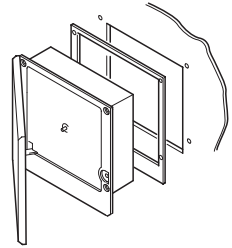
A choice of mounting options enables simple installation of the recorder in a panel, on a wall or on a pipe. Mains isolation can be provided by an optional power switch within the instrument.



Pipe-mounting



Wall-mounting



Panel-mounting

Specification

Construction

Size (h x w x d)

386.0 x 382.0 x 141.5 mm (15.23 x 15.04 x 5.57 in.)

Weight

8.2 kg (18 lb)

Case material

Glassfiber-filled reinforced polyester

Window material

Polycarbonate

Door latch

High-compression with optional lock

Environmental

Operational temperature range

0 to 55 °C (32 to 130 °F)

Operational humidity range

- 5 to 95 %RH (non-condensing)
- 5 to 80 %RH (chart only)

Case sealing

NEMA 4X (IP66)

Fast transients

IEC 801-4 Level 3

Installation

Mounting options

Panel, wall or pipe

Terminal type

Screw

Wire size (max.)

14 AWG (I/O), 12 AWG (power)

Operation and configuration

Programming method

Via front panel keys

Security

Password-protected menus

Safety

General safety

IEC348

Isolation

2 kV DC (channel / ground)

Memory protection

Nonvolatile FRAM

Approvals

- CE (panel, wall or pipe)
- CSA (option)
- CSA/FM Class 1 Div. 2 (option)
- UL (option)

Power supply

Voltage

100 to 240 V AC \pm 10 %

(90 V min. to 264 V max. AC), 50/60Hz

Consumption

<30 VA

Line interruption

Up to 60 ms

Totalizer

Size

99,999,999 max.

Count direction

Up or down

Preset

User-programmable

Process input

Noise rejection

Common mode:

>120 dB at 50/60Hz

Normal (series) mode:

>60 dB at 50/60Hz

CJC rejection ratio

<0.05°C/°C

Sensor break protection

Upscale or downscale drive

Out of range detection

0 to 100 % of engineering span

Temperature stability

<0.02 % of reading/°C or 1 μ V/°C

Long-term drift

<0.01 % of reading 10 μ V annually

Input impedance

- >10 M Ω (mV and V inputs)
- 100 Ω (mA inputs)

Analog input

Signal types

mV, V, mA, Ω

Thermocouple types

B, E, J, K, N, R, S, T

Resistance thermometer

Pt100

Other linearizations

$x^{3/2}$, $x^{5/2}$, square root

Sample interval

250 ms

Digital filter

0 to 60s programmable

Recording system

Pen color

Red

Pen response

7 seconds (full scale)

Pen resolution

0.1 % steps

Pen lift

Motor-driven, with optional auto-drop

Chart size

10 in. or 105 mm

Chart speed

7 seconds (full scale) 1 to 167 hours

or 7 to 32 days per revolution

Rotation accuracy

<0.5 % of rotation time

Display and operator panels

Display type

6-digit red LED, 14 mm (0.56 in.) high

Panel keys function

Programming access, increment / decrement, pen lift and user-defined function key.

EMC

Emissions and Immunity

Meets requirements of:

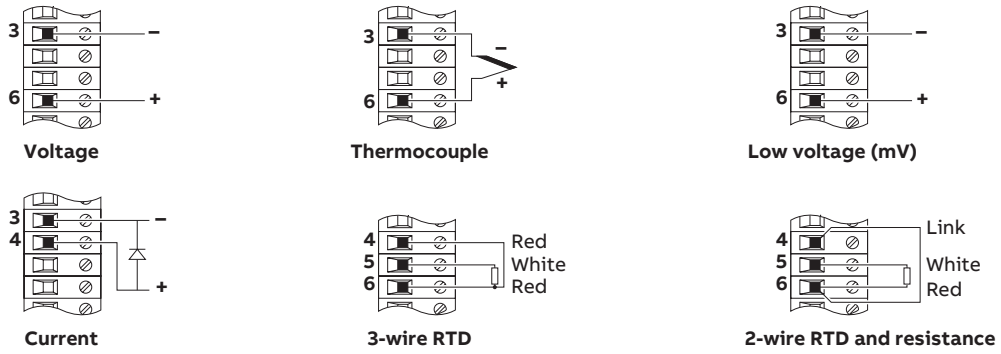
- EN 50081-2
- EN 50082-2
- IEC 61326 for an industrial environment
- CE Mark

Analog input performance

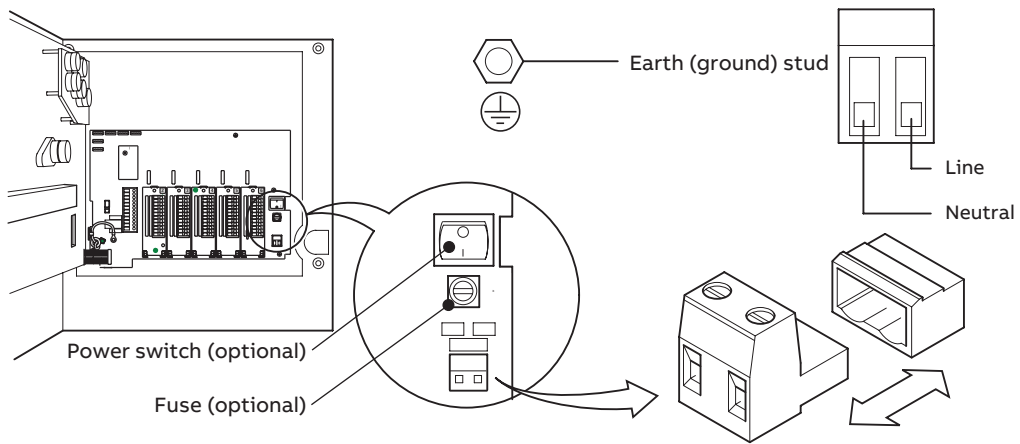
Type	Range Lo	Range Hi	Min. span	Accuracy
mV	0	150	5	±0.1 % reading or 10 μV
V	0	5	0.1	±0.1 % reading or 20 mV
mA	0	50	1	±0.2 % reading or 0.2 μA
Ω (low)	0	750	20	±0.5 % reading or 10 Ω
Ω (high)	0	10 k	400	±0.5 % reading or 0.1 Ω

Type	°C		°F		Accuracy (excl. CJC)
	Range Lo	Range Hi	Range Lo	Range Hi	
B	-18	1800	0	3270	±2 °C (above 200 °C) (3.6 °F above 434 °F)
E	-100	900	-140	1650	±0.5 °C (±0.9 °F)
J	-100	900	-140	1650	±0.5 °C (±0.9 °F)
K	-100	1300	-140	2350	±0.5 °C (±0.9 °F)
N	-200	1300	-325	2350	±0.5 °C (±0.9 °F)
R	-18	1700	0	3000	±1 °C (above 300 °C) (1.8 °F above 572 °F)
S	-18	1700	0	3000	±1 °C (above 200 °C) (1.8 °F above 572 °F)
T	-250	300	-400	550	±0.5 °C (±0.9 °F)
PT100	-200	600	-325	1100	±0.5 °C (±0.9 °F)

Wiring connections



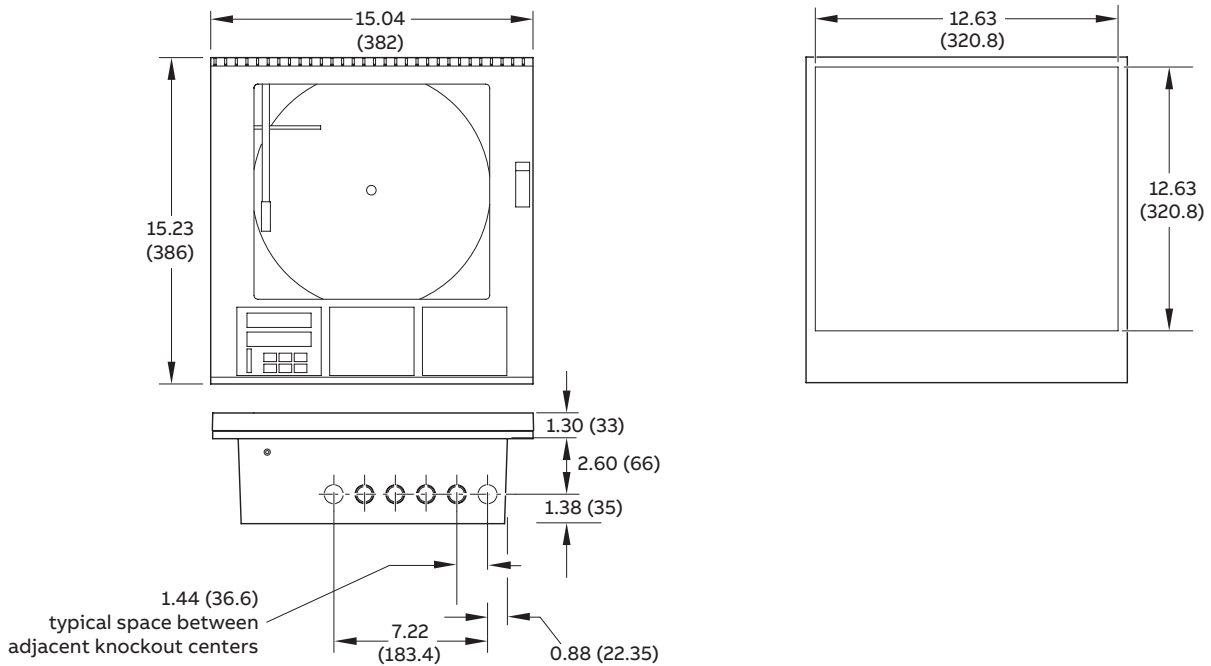
Standard input connections



Power supply connections

Overall dimensions

Dimensions in mm (in.)



Ordering information

C1901 single pen circular chart recorder	1901	X	X	0	X	X	X	0	0	0	0	0	0	XXX	OPT
Chart type															
Taylor (ER/C) charts		J													
KPC 105, Kent PX and Kent PXR type charts		K													
Chessell brand charts		C													
Build															
ABB standard		A													
CSA approved		B													
CSA/FM Class 1 Division 2 approved		F													
UL approved		U													
Options															
None								0							
Totalizer								3							
Door lock															
Not fitted															1
Fitted															2
Power supply															
115 V AC															1
230 V AC															2
115 V AC with on / off switch															4
230 V AC with on / off switch															5
Programming / Special features															
Configured to factory standard															STD
Configured to customer requirements (customer to complete and supply C1901 custom configuration sheet – INF08/031)															CUS
Special features															SXX
Engineered configuration (customer to supply configuration details required)															ENG
Calibration certificate **															

C1

** When a calibration certificate is ordered it is performed according to the specified configuration type:
 CUS/ENG – Inputs and outputs calibrated according to the customer supplied configuration details and ranges.
 STD – Inputs and outputs calibrated according to the instrument factory standard configuration and ranges.

Accessories

ENG/REC After-sales engineered configuration service

Sales



Service



Software



ABB Limited**Measurement & Analytics**

Howard Road, St. Neots
Cambridgeshire, PE19 8EU
UK

Tel: +44 (0)1480 475 321

Fax: +44 (0)1480 217 948

Mail: instrumentation@gb.abb.com

ABB Inc.**Measurement & Analytics**

125 E. County Line Road
Warminster, PA 18974
USA

Tel: +1 215 674 6000

Fax: +1 215 674 7183

abb.com/recorders

We reserve the right to make technical changes or modify the contents of this document without prior notice. With regard to purchase orders, the agreed particulars shall prevail. ABB does not accept any responsibility whatsoever for potential errors or possible lack of information in this document.

We reserve all rights in this document and in the subject matter and illustrations contained therein. Any reproduction, disclosure to third parties or utilization of its contents – in whole or in parts – is forbidden without prior written consent of ABB.