

ABB MEASUREMENT & ANALYTICS | DATA SHEET

# C1901

## Single pen circular chart recorder



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## **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**

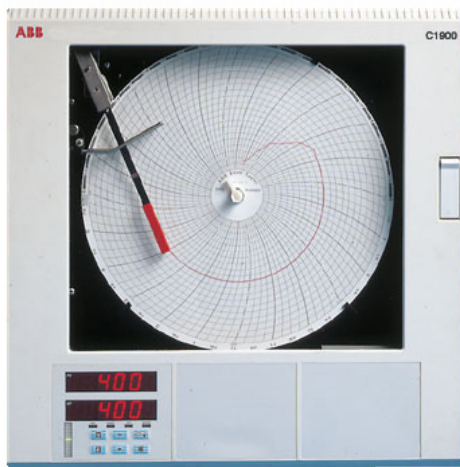
- 8-digit flow totalizer

## 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.

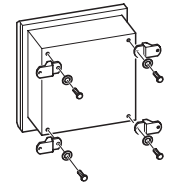
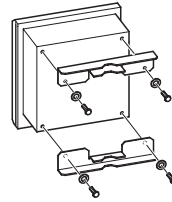
## Designed to survive

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.

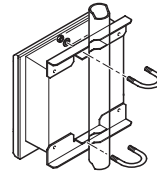


## Easy to install

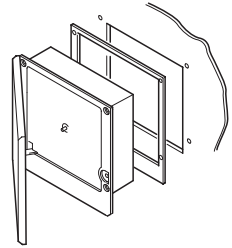
A choice of mounting options enables simple installation of the recorder in a panel, on a wall or on a pipe. Mains isolation can be provided by an optional power switch within the instrument.



Wall-mounting



Pipe-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

#### Altitude

2000 m (6562 ft) max. above sea level

### 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  $\mu$ V/°C

#### Long-term drift

<0.01 % of reading 10  $\mu$ V annually

#### Input impedance

- >10 M $\Omega$  (mV and V inputs)
- 100  $\Omega$  (mA inputs)

### Analog input

#### Signal types

mV, V, mA,  $\Omega$

#### 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:

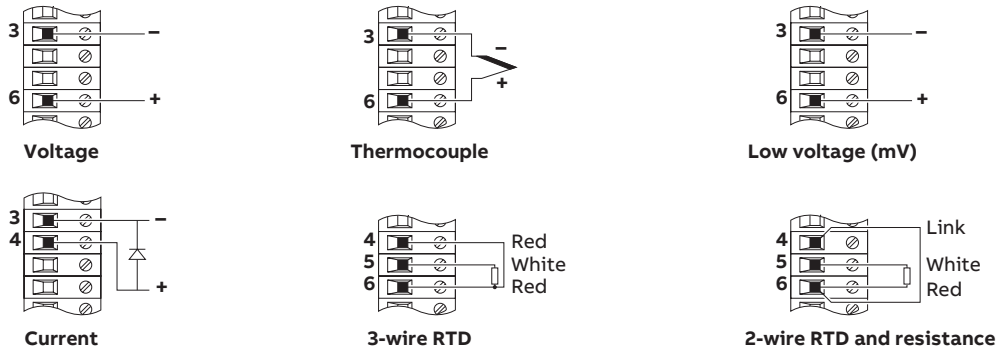
- EN 50081-2
- EN 50082-2
- IEC 61326 for an industrial environment
- CE Mark

## Analog input performance

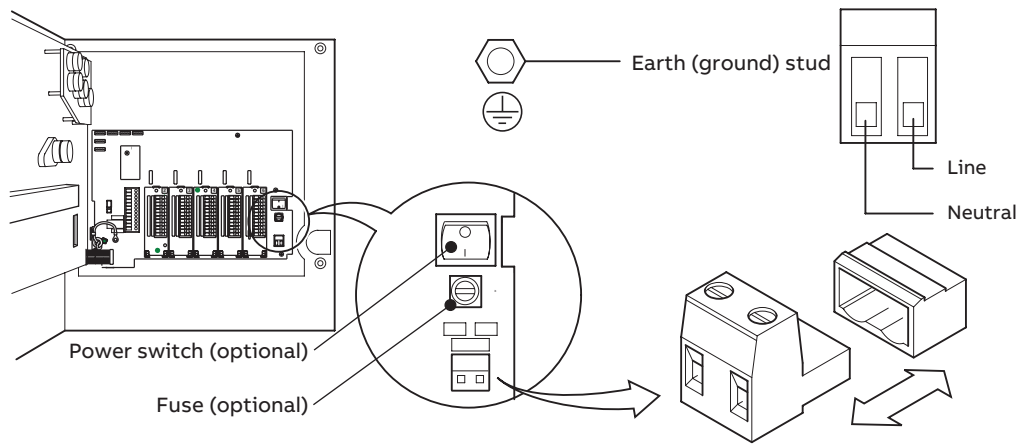
Type	Range Lo	Range Hi	Min. span	Accuracy
mV	0	150	5	±0.1 % reading or 10 µV
V	0	5	0.1	±0.1 % reading or 20 mV
mA	0	50	1	±0.2 % reading or 0.2 µA
Ω (low)	0	750	20	±0.5 % reading or 10 Ω
Ω (high)	0	10 k	400	±0.5 % reading or 0.1 Ω

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



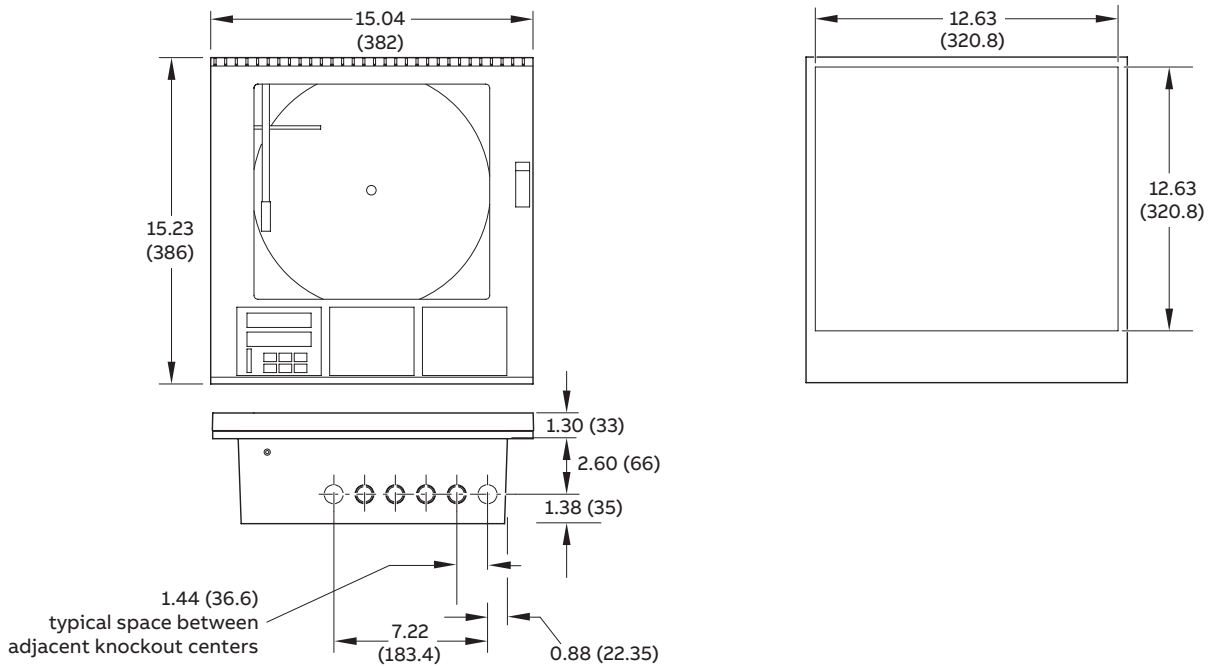
### Standard input connections



### 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
<b>Chart type</b>															
Taylor (ER/C) charts		J													
KPC 105, Kent PX and Kent PXR type charts		K													
Chessell brand charts		C													
<b>Build</b>															
ABB standard		A													
CSA approved		B													
CSA/FM Class 1 Division 2 approved		F													
UL approved		U													
CSA + UL approved***		D													
<b>Options</b>															
None				0											
Totalizer				3											
<b>Door lock</b>															
Not fitted							1								
Fitted							2								
<b>Power supply</b>															
115 V AC								1							
230 V AC								2							
115 V AC with on / off switch								4							
230 V AC with on / off switch								5							
<b>Programming / Special features</b>															
Configured to factory standard														STD	
Configured to customer requirements (customer to complete and supply C1901 custom configuration sheet – <a href="#">INF08/031</a> )														CUS	
Special features														SXX	
Engineered configuration (customer to supply configuration details required)														ENG	
Calibration certificate **															C1
<b>Printed instruction manual</b>															
English															M5
German															M1
Spanish															M3
French															M4
Italian															M2

\*\* 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.

\*\*\* Instrument supplied with both CSA and UL approvals.

## Accessories

ENG/REC After-sales engineered configuration service

Sales



Service



Software



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