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.
**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 ±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 µV/°C
Long-term drift
<0.01 % of reading 10 µV annually
Input impedance
• >10 MΩ (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^{2/3}, 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

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<th>Type</th>
<th>Range Lo</th>
<th>Range Hi</th>
<th>Min. span</th>
<th>Accuracy</th>
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<tr>
<td>mV</td>
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<td>150</td>
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<td>±0.1 % reading or 10 µV</td>
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<td>V</td>
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<td>±0.1 % reading or 20 mV</td>
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<td>Ω (low)</td>
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<th>°C Range Lo</th>
<th>°F Range Lo</th>
<th>°C Range Hi</th>
<th>°F Range Hi</th>
<th>Accuracy (excl. CJC)</th>
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<td>B</td>
<td>-18</td>
<td>0</td>
<td>1800</td>
<td>3270</td>
<td>±2 ºC (above 200 ºC) (3.6 ºF above 434 ºF)</td>
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<td>E</td>
<td>-100</td>
<td>-140</td>
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<td>±0.5 ºC (±0.9 ºF)</td>
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Wiring connections

Voltage

Thermocouple

Low voltage (mV)

Current

3-wire RTD

2-wire RTD and resistance

Standard input connections

Power switch (optional)

Fuse (optional)

Earth (ground) stud

Line

Neutral

Power supply connections

Overall dimensions

Dimensions in mm (in.)

15.04 (382)

15.23 (396)

1.30 (33)

2.60 (66)

1.38 (35)

1.44 (36.6)

typical space between adjacent knockout centers

7.22 (183.4)

0.88 (22.35)

12.63 (320.8)

12.63 (320.8)
### Ordering information

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**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.

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### Accessories

ENG/REC  After-sales engineered configuration service