

signal

**JOFRA**<sup>®</sup>  
calibration **»K**

» **Temperature signal calibrator**

Robust custom housing. Ideal for both field and workshop use. An excellent calibrator and a convenient tool for a process engineer

» **High accuracy**

CSC201 is designed to meet high accuracy demands from modern sensors and transmitters

» **Thermocouple and RTD calibrator in the same unit**

16 types of RTD's and 13 types of TC's. Plus ohms, mV and customised RTD curves

» **Advanced step and ramp functions**

Easy zero / full span entry, step / ramp functions including user defined time settings

» **Fast RTD simulation**

CSC201 will work with pulsed excitation transmitters and PLC's

» **Calibrate pressure**

CSC201 will measure or calibrate pressure; just apply a JOFRA APM and a JOFRA calibration pump

» **Optimal display**

Large ClearBrite™ display, optimal readout in sunlight or dark

## Compact Signal Calibrator **CSC201**



JOFRA CSC201 is a compact temperature signal calibrator. Calibrate or measure thermocouples and RTD's. A large number of predefined sensor types are available. Easy-to-use, intuitive user interface, with comprehensive ramp and step functions. All functions are displayed on the large ClearBrite™ display. The high accuracy of CSC201 has not been achieved on account of fragile measurement or source circuitry, CSC201 has fuseless protection – this might save you a calibrator or lower your cost of ownership.

ISO 9001 Manufacturer

Specification Sheet  
SS-CSC201

**AMETEK**<sup>®</sup>  
TEST & CALIBRATION INSTRUMENTS

**Large ClearBrite display**

The large graphical display ensures an excellent overview with all information in one window.

**Menu keys**

Three navigation keys. Their function is clearly explained in the menu bar

**Electrical connections**

All input and output connectors are placed away from the display and keyboard to provide the best operation conditions.

**Cursor keys**

Increment / decrement output, set step & ramp range



**JOFRA APM pressure modules**

When used with pressure modules the CSC201 becomes a pressure calibrator / indicator. The APM series of pressure modules by JOFRA are compatible with the AMC900, AMC910, ASC300, ASC301, or HPC500, HPC502 and HPC600 calibrators. The APM external pressure modules include more than 24 models available with gauge, absolute, differential, and vacuum pressure references and in metric and imperial engineering units. The modules are engineered for in-plant, field or laboratory use. They are ready-to-use with immediate recognition of the module once it is plugged into the calibrator.



**SPECIFICATIONS**

**Ambient temperature specifications**

Operating temperature..... -10 to 50°C / 14 to 122°F  
 Storage temperature..... -20 to 60°C / -4 to 140°F  
 All specifications specified  
 at ambient temperature:..... 23°C ±5°C / 73°F ±9°F  
 Outside ambient 23°C ±5°C .....±0.003% rdg/°C  
 Outside ambient 73°F ±9°F..... ±0.0017% rdg/°F

**Power specifications**

Batteries ..... 4 x AA batteries  
 Battery life ..... Approx. 20 hours  
 Low battery warning..... Yes

**RS232 communication interface**

Connector: ..... RS232 connector - LEMO connector  
 Communication rate..... 9600 baud, ASCII

**Physical specifications (LxHxW)**

Instrument ..... 235x57x97 mm / 9.3x2.3x3.8 in  
 Weight incl. batteries..... 590 g / 21 oz  
 Instr. in soft case..... 250x95x110 mm / 9.8x3.7x4.3 in  
 Weight incl. test leads & shoulder strap .... 1030 g / 360 oz  
 Shipping cargo box size ..... 285x110x160 mm  
 ..... 11.2x4.3x6.3 in  
 Shipping weight ..... 1380 g / 38 oz

**Miscellaneous**

CE - EMC ..... EN61326: 2006, ANNEX A  
 Safety ..... CSA C22.2 No. 1010.1: 1992

**Thermocouple - TC**

TC types ..... J K T E R S B C X K B P L U N  
Cold junction compensation ON/OFF control ..... Yes

Thermocouple mV	Range		Accuracy ±
	min	max	12 months
TC mV read	-10.000 mV	75.000 mV	0.015% rdg +10µV
TC mV source	-10.000 mV	75.000 mV	0.015% rdg +10µV

Maximum current output is 1 mA with an output impedance of ≤ 1 ohm.

Thermocouple Cold junction	Range		Accuracy ±
	min	max	12 months
CJC compensation	18°C 64°F	28°C 83°F	0.2°C 0.36°F
CJC outside above			0.05°C/°C 0.03°F/°F

TC Type	Temperature range				12-month accuracy	
	°C		°F		°C	°F
	From	To	From	To		
J	-210	-150	-346	-238	0.4	0.8
	-150	1200	238	2192	0.2	0.4
K	-200	-100	-328	-148	0.5	0.9
	-100	600	-148	1112	0.2	0.4
	600	1000	1112	1832	0.3	0.6
T	1000	1372	1832	2501	0.4	0.8
	-250	-200	-418	-328	1.5	1.7
	-200	0	-328	32	0.5	0.9
E	0	400	32	752	0.2	0.4
	-250	-200	-418	-328	1.0	1.8
	-200	-100	-328	-148	0.3	0.6
R	-100	1000	-148	1832	0.2	0.4
	0	200	32	392	1.7	3.1
S	200	1767	392	3212	1.0	1.8
	0	200	32	392	1.7	3.1
B	200	1767	392	3212	1.1	2.0
	600	800	1112	1472	1.5	2.7
	800	1000	1472	1832	1.2	2.2
C	1000	1820	1832	3308	1.0	1.8
	0	1000	32	1832	0.5	0.9
XK	1000	2316	1832	4200	1.5	2.7
	-200	800	-328	1472	0.2	0.4
BP	0	800	32	1472	1.9	3.5
	800	2500	1472	4532	0.6	1.1
L	-200	900	-328	1652	0.2	0.4
	-200	0	-328	32	0.4	0.8
U	0	600	32	1112	0.2	0.4
	-200	-100	-328	-148	0.8	1.5
N	-200	1300	-148	2372	0.3	0.6

Does not include thermocouple wire error and CJC.

**Resistance Temperature Detector - RTD**

RTD Types:..... See RTD table below  
Response time: ..... Less than 5 mSec  
Connection ..... 2, 3, and 4-wire

Ohm	Range		Accuracy ±
	min	max	12 months
Ohm read (low)	0.00	400.00	0.015% rdg +0.03 ohm
Ohm read (high)	401.0	4000.0	0.015% rdg +0.3 ohm
Ohm source (low) @ 0.1 to 0.5 mA @ 0.5 to 3 mA	5.0	400.0	0.015% rdg +0.1 ohm
	5.0	400.0	0.015% rdg +0.03 ohm
Ohm source (high) @ 0.05 to 0.8 mA @ 0.05 to 0.4 mA	400	1500	0.015% rdg +0.3 ohm
	1500	4000	0.015% rdg +0.3 ohm

Unit is compatible with pulsing transmitters.  
Pulse response is ≤ 5 mSec.

4-wire RTD Type	Temperature range				12-month accuracy	
	°C		°F		°C	°F
	From	To	From	To		
P10(90)385	-200	100	-328	212	0.85	1.53
	100	400	328	752	1.00	1.80
	400	800	752	1472	1.20	2.16
P50(90)385	-200	100	-328	212	0.20	0.32
	100	400	212	752	0.30	0.54
	400	800	752	1472	0.40	0.72
P100(90)385	-200	100	-328	212	0.15	0.27
	100	400	212	752	0.20	0.36
	400	800	752	1472	0.30	0.54
P200(90)385	-200	100	-328	212	0.40	0.72
	100	630	212	1166	0.50	0.90
P400(90)385	-200	100	-328	212	0.20	0.36
	100	630	212	1166	0.25	0.45
P500(90)385	-200	100	-328	212	0.20	0.36
	100	630	212	1166	0.30	0.54
P1K(90)385	-200	100	-328	212	0.15	0.27
	100	630	212	1166	0.20	0.36
P50(90)391	-200	100	-328	212	0.20	0.36
	100	400	212	752	0.30	0.54
	400	800	752	1472	0.40	0.72
P100(90)391	-200	100	-328	212	0.15	0.27
	100	400	212	752	0.20	0.36
	400	800	752	1472	0.30	0.54
P100(90)392	-200	100	-328	212	0.10	0.18
	100	630	212	1166	0.20	0.36
M10(90)427	-100	260	-148	500	0.75	1.35
M50(90)428	-180	200	-292	392	0.15	0.27
M100(90)428	-180	200	-292	392	0.10	0.18
H120(90)672	-80	260	-112	500	0.10	0.18
P100(90)JIS	-200	100	-328	212	0.10	0.18
	100	630	212	1166	0.20	0.36
YSI(90)400	15	50	59	122	0.10	0.18

Read accuracy is based on 4-wire input.  
Source accuracy in terminals 2-wire source.

## ORDERING INFORMATION

Order no.	Description
CSC201	Handheld Temperature Signal Calibrator
<b>Certification</b>	
G	NIST traceable temperature certificate (standard)
H	Accredited calibration certificate
<b>Accessories</b>	
B	Rechargeable battery pack
C	Large padded softcase with shoulder strap
T	Temperature sensor Pt100
<b>CSC201GB</b>	<b>Sample order number</b> CSC201 calibrator with standard NIST traceable temperature certificate and rechargeable battery pack

## STANDARD DELIVERY

- JOFRA CSC201 Temperature Signal Calibrator
- Traceable calibration certificate
- Reference manual
- Test leads

## ACCESSORIES

120519	Thermocouple Male Plug - Type Cu-Cu - White
120518	Thermocouple Male Plug - Type R / S - Green
120517	Thermocouple Male Plug - Type K - Yellow
120516	Thermocouple Male Plug - Type J - Black
120515	Thermocouple Male Plug - Type T - Blue
120514	Thermocouple Male Plug - Type N - Orange
121983	Extension Cable for Type K - 5 m
122523	Extension Cable for Type N - 5 m
2206011	Thermocouple plug + K wire + alligator
2206012	Thermocouple plug + T wire + alligator
65-PT100-LB-CABLE	Cable 2 m (6.6 ft.) with LEMO / Banana connectors
124716	4x1.5 Volt rechargeable batteries
124718	Charger for rechargeable batteries - 115/230 VAC
127403	RS232 to LEMO cable



**AMETEK Test & Calibration Instruments**  
A business unit of AMETEK Measurement & Calibration Technologies Division offering the following industry leading brands for test and calibration instrumentation.

**JOFRA Calibration Instruments**  
*Temperature Calibrators*  
Portable dry-block calibrators, precision thermometers and liquid baths. Temperature sensors for industrial and marine use.  
*Pressure Calibrators*  
Convenient electronic systems ranging from -25 mbar to 1000 bar - fully temperature-compensated for problem-free and accurate field use.  
*Signal Instruments*  
Process signal measurement and simulation for easy control loop calibration and measurement tasks.

**M&G Dead Weight Testers & Pumps**  
Pneumatic floating-ball or hydraulic piston dead weight testers with accuracies to 0.015% of reading. Pressure generators delivering up to 1,000 bar.

**Crystal Pressure**  
Digital pressure gauges and calibrators that are accurate, easy-to-use and reliable. Designed for use in the harshest environments; most products carry an IS, IP67 and DNV rating.

**Lloyd Materials Testing**  
Materials testing machines and software that guarantees expert materials testing solutions. Also covering Texture Analysers to perform rapid, general food testing and detailed texture analysis on a diverse range of foods and cosmetics.

**Davenport Polymer Test Equipment**  
Allows measurement and characterization of moisture-sensitive PET polymers and polymer density.

**Chatillon Force Measurement**  
The hand held force gauges and motorized testers have earned their reputation for quality, reliability and accuracy and they represent the de facto standard for force measurement.

**Newage Hardness Testing**  
Hardness testers, durometers, optical systems and software for data acquisition and analysis.

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