Dynamic Range: 80,000 counts
Ranges: ±64 mV, ±512 mV, ±8V, and ±64V dc
Resolution: 1 µV on 64 mV range, 10 µV on 512 mV range, 100 µV on 8V range, 1 mV on 64V range
Common Mode Noise Rejection: ≥170 dB at 50 or 60 Hz ±0.1%; ≥160 dB at dc; 100 ohm unbalance
Normal Mode Noise Rejection: ≥60 dB at 50 or 60 Hz ±0.1%
Operating Temperature: -20°C to +70°C

2280B/2285B & 2281A Input Options

For These Inputs	Use Connector Option	With Scanner Option	Maximum Inputs Per Scanner
Thermocouples	-175	-162**	20
DC Voltage	-176 or 175	-162**	20
DC Current	-171	-162**	20
AC & DC Voltage	-160	-162**	10 AC 10 DC
RTDs or Ohms	-177	-163**	20
RTDs, Ohms Strain	-174*	-164**	20
Status	-179	-168	20
BCD Digits	-179	-168	5
Binary	-179	-168	17 Bits & Sign
Frequency	-179	-167/AA	4
Frequency	None Req	-167	6 (2280B only)
Totalize Events	-179	-167/AA	4
Totalize Events	None Req	-167	6 (2280B only)

*A dc voltage scanner and companion connector Option (-162 and -176) are also required for each Transducer Excitation Option -164 used for RTDs, Ohms, or Strain measurements
** A/D Converter (-161) required in chassis

Voltage, Thermocouple Inputs

Thermocouple and DC Scanner Option (-162)

Channels: Twenty per option. One 3-pole dry reed relay for each channel (Hi, Lo, Shield)
Ranges: 64 mV, 512 mV, 8V, and 64V, software-selectable
Input Impedance: ≥200 MΩ on 64 mV and 512 mV ranges, 10 MΩ on 8V, and 64 ranges
Thermal Offset: ≤1 µV each channel
Maximum Input Voltage: 250V dc or rms ac between Hi and Lo terminals
Maximum Common Mode Voltage: 250V dc or rms ac between Hi or Lo and ground or between two adjacent channels

Isothermal Input Connector Option (-175)

Channels: Twenty 3-wire sets of screw terminals for thermocouple or voltage input wires. Large, insulated aluminum block serves as reference junction
Maximum Measurable Voltage: 64V dc
Compatibility: Plugs onto scanner module, Option -162

Voltage Input Connector Option (-176)

Channels: Twenty 3-wire sets of screw terminals for dc voltage input wires
Maximum Measurable Voltage: 64V dc
Compatibility: Plugs onto scanner module, Option -162
DC Voltage Accuracy: ±(% of Rdg + Counts)*

Range	90 Days 15°C to 35°C	1 Year 15°C to 35°C	1 Year** -20°C to 70°C
64 mV	0.005% + 7	0.01% + 8	0.03% + 9
512 mV	0.005% + 3	0.01% + 4	0.03% + 5
8 mV	0.005% + 7	0.01% + 8	0.03% + 9
64V	0.009% + 3	0.02% + 4	0.05% + 5

*Total instrument accuracy using Option -162 and -176
**A/D Converter must be in 2281A for operation to -20°C or 70°C

Temperature Measurement Accuracy, Thermocouples

Thermocouples		Accuracy[1,2]		
Type & Range °C	Temperature °C	90 Days 15°C to 35°C	1 Year 15°C to 35°C	1 Year[3] -20° to70°C
J	-100 to -25	0.45	0.5	0.8
-200 to 760	-25 to 760	0.35	0.4	0.7
K	0 to 900	0.4	0.45	0.7
-275 to 1350	900 to 1350	0.52	0.65	1.3
T	-100 to 75	0.58	0.65	1.1
-230 to 400	75 to 150	0.35	0.39	0.7
	150 to 400	0.3	0.34	0.6
E	-100 to -25	0.47	0.54	0.9
-250 to 900	-25 to 750	0.3	0.33	0.6
	750 to 900	0.33	0.4	0.8
R	250 to 450	0.9	1.0	1.3
0 to 1767	450 to 1767	0.8	0.9	1.4
S	200 to 1767	0.97	1.1	1.6
0 to 1767				
B	600 to 800	1.4	1.6	1.9
200 to 1820	800 to 1820	0.96	1.1	1.3
N	-100 to 150	0.6	0.7	1.1
-200 to 400	150 to 400	0.4	0.44	0.7
C	200 to 1000	0.57	0.66	0.94
0 to 2315	1000 to 2000	0.90	1.2	2.1
	2000 to 2315	1.3	1.7	2.9
JDIN	-100 to -25	0.5	0.56	0.9
-200 to 900	-25 to 900	0.4	0.45	0.7
TDIN	0 to 200	0.48	0.53	0.8
-200 to 600	200 to 600	0.37	0.41	0.7

1Total instrument accuracy. Includes all instrument errors such as A/D errors, scanner errors, power supply warm-up, reference junction errors, conformity errors, etc.
2Total instrument accuracy using Option -162 and -175 in 2281A chassis.
3A/D Converter must be in 2281A for operation to -20°C or 70°C.
4For AWG 28 wire.

Current Input Connector Option (-171)

Channels: Twenty 2-wire pairs of screw terminals for current inputs. Typically for 4 to 20 mA or 10 to 50 mA inputs
Maximum Measurable Current: 64 mA per channel
Current-Sense Resistors: 8Ω ±0.02Ω
DC Current Accuracy: ±(0.25% of reading + 4 counts) for 90 days
Compatibility: Plugs onto scanner module, Option -162

AC Voltage Input Connector Option (-160)

Channels: Ten 2-wire sets of terminals for ac voltage and ten for dc voltage
Voltage Range for AC: 5V rms to 250V rms measurable. 250V rms ac or dc maximum between any two terminals on the assembly
Frequency Range for AC: 45 Hz to 450 Hz
Accuracy for AC: 1% of reading ±0.1V for 90 days. Average-responding conversion; calibrated for rms value of sinewaves
Voltage Range for DC: 64V maximum measurable. 250V rms ac or dc maximum between any two terminals on the assembly
Accuracy for DC: Same as for Option -162 with Option -176
Compatibility: Plugs onto scanner module, Option -162

RTDs & Ohms Scanner Option (-163)

A 20-channel scanner module for precision measurements of RTDs and/or resistances.
Measurement Modes: 4-wire or one of two 3-wire modes (both with lead-wire resistance compensation). One 3-wire mode eliminates reed resistance errors
Ranges: Three: 256Ω, 2048Ω and 64 kΩ (or user selectable), software programmed
Current Sources: Two: 1 mA and 32 µA (or user selectable)
Input Isolation: 250V dc or ac rms between separate scanner modules. 250V dc or ac rms between the two decades of channels within a scanner module. 250V dc or ac rms between all channels in two of the three measurement modes. 30V dc or 24V ac rms between terminals of a channel

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