

SQ2020/SQ2040 Accuracy Figures

The accuracy figures are quoted over a logger temperature range of +5 to +45°C and assume that the logger is at a constant temperature. If the logger's temperature is varying then the errors could be considerably worse, especially for thermocouple measurements. These are worst case figures and are given as \pm (percentage of reading + percentage of range) or \pm (percentage of reading + fixed value). The errors at 25°C are generally less than half of those quoted and over the ranges -30 to +5 and +45 to +65°C the errors are generally about twice those quoted.



Analogue Range	% of Reading	% of Range	Default Resolution
Reference Temperature	0.0	0.1	0.01
High Voltage			
4 to 60Vdc	0.15	0.025	0.001
4 to 40Vdc	0.15	0.03	0.001
4 to 20Vdc	0.15	0.05	0.001
Voltage Differential			
-6 to 25Vdc	0.1	0.025	0.001
-6 to 12Vdc	0.1	0.025	0.001
-6 to 6Vdc	0.1	0.025	0.0001
-3 to 3Vdc	0.1	0.025	0.0001
-0.6 to 2.4Vdc	0.05	0.025	0.0001
-0.6 to 1.2Vdc	0.05	0.025	0.0001
-0.6 to 0.6Vdc	0.05	0.025	0.00001
-0.3 to 0.3Vdc	0.05	0.025	0.00001
-0.15 to 0.15Vdc	0.05	0.025	0.00001
-0.075 to 0.075Vdc	0.05	0.05	0.000001
Voltage Single Ended			
-6 to 25Vdc	0.1	0.025	0.001
-6 to 12Vdc	0.1	0.025	0.001
-6 to 6Vdc	0.1	0.025	0.0001
-3 to 3Vdc	0.1	0.025	0.0001
-0.6 to 2.4Vdc	0.05	0.025	0.0001
-0.6 to 1.2Vdc	0.05	0.025	0.0001
-0.6 to 0.6Vdc	0.05	0.025	0.00001
-0.3 to 0.3Vdc	0.05	0.05	0.00001
-0.15 to 0.15Vdc	0.05	0.1	0.00001
-0.075 to 0.075Vdc	0.05	0.2	0.000001
Current Differential			
-30 to 30mA	0.05	0.03	0.001
4 to 20mA	0.05	0.03	0.001

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DATA ACQUISITION

Hints and Tips

Analogue Range	% of Reading	% of Range	Default Resolution
Resistance 2 Wire			
0 to 300000Ω sub-range 0 to 33000Ω	0.1	0.0005	1.0
0 to 300000Ω sub-range 33000 to 300000Ω	0.4	0.0005	1.0
0 to 20000Ω	0.05	0.005	0.1
0 to 5000Ω	0.1	0.01	0.1
0 to 1250Ω	0.05	0.04	0.01
Resistance 3 Wire			
0 to 4000Ω	0.1	0.01	0.1
0 to 500Ω	0.05	0.05	0.01
Resistance 4 Wire			
0 to 4000Ω	0.075	0.005	0.1
0 to 500Ω	0.075	0.025	0.01
Thermistor U type			
-50 to 150°C sub-range -50 to 100°C	0.15	0.01	0.01
-50 to 150°C sub-range 100 to 150°C	0.5	0.0	0.01
Thermistor Y type			
-50 to 150°C sub-range -50 to 100°C	0.2	0.015	0.01
-50 to 150°C sub-range 100 to 150°C	0.5	0.0	0.01
Thermistor S type			
-30 to 150°C sub-range -30 to 15°C	0.1	0.03	0.01
-30 to 150°C sub-range 15 to 150°C	0.05	0.01	0.01
Pt100 BS EN 60751 2 wire			
-200 to 850°C	0.1	0.1	0.1
Pt100 JIS 1604 2 wire			
-200 to 850°C	0.1	0.1	0.1
Pt1000 BS EN 60751 2 wire			
-200 to 850°C	0.1	0.02	0.01
Pt100 BS EN 60751 3 wire			
-200 to 850°C	0.1	0.1	0.1
Pt100 JIS 1604 3 wire			
-200 to 850°C	0.1	0.1	0.1
Pt1000 BS EN 60751 3 wire			
-200 to 850°C	0.1	0.02	0.01
Pt100 BS EN 60751 4 wire			
-200 to 850°C	0.075	0.05	0.1
Pt100 JIS 1604 4 wire			
-200 to 850°C	0.075	0.05	0.1
Pt1000 BS EN 60751 4 wire			
-200 to 850°C	0.075	0.02	0.01

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Hints and Tips

Analogue Range	% of Reading	% of Range	Default Resolution
Thermocouple J Type Differential			
-200 to 1200°C sub-range -200 to -50°C	0.4	0.1	0.1
-200 to 1200°C sub-range -50 to 1200°C	0.0	0.1	0.1
Thermocouple J Type Single Ended			
-200 to 1200°C sub-range -200 to -50°C	0.8	0.18	0.1
-200 to 1200°C sub-range -50 to 1200°C	0.0	0.18	0.1
Thermocouple K Type Differential			
-200 to 1372°C sub-range -200 to -50°C	0.7	0.1	0.1
-200 to 1372°C sub-range -50 to 1372°C	0.05	0.1	0.1
Thermocouple K Type Single Ended			
-200 to 1372°C sub-range -200 to -50°C	0.15	0.18	0.1
-200 to 1372°C sub-range -50 to 1372°C	0.05	0.18	0.1
Thermocouple N Type Differential			
-200 to 1300°C sub-range -200 to -50°C	1.5	0.13	0.1
-200 to 1300°C sub-range -50 to 1300°C	0.0	0.13	0.1
Thermocouple N Type Single Ended			
-200 to 1300°C sub-range -200 to -50°C	2.5	0.25	0.1
-200 to 1300°C sub-range -50 to 1300°C	0.0	0.25	0.1
Thermocouple R Type Differential			
-50 to 1768°C sub-range 0 to 350°C	0.0	0.4	0.1
-50 to 1768°C sub-range 350 to 1768°C	0.0	0.23	0.1
Thermocouple R Type Single Ended			
-50 to 1768°C sub-range 0 to 350°C	0.0	0.8	0.1
-50 to 1768°C sub-range 350 to 1768°C	0.0	0.5	0.1
Thermocouple S Type Differential			
-50 to 1768°C sub-range 0 to 350°C	0.0	0.4	0.1
-50 to 1768°C sub-range 350 to 1768°C	0.0	0.25	0.1
Thermocouple S Type Single Ended			
-50 to 1768°C sub-range 0 to 350°C	0.0	0.8	0.1
-50 to 1768°C sub-range 350 to 1768°C	0.0	0.5	0.1
Thermocouple T Type Differential			
-200 to 400°C sub-range -200 to 0°C	0.7	0.3	0.1
-200 to 400°C sub-range 0 to 400°C	0.0	0.3	0.1
Thermocouple T Type Single Ended			
-200 to 400°C sub-range -200 to 0°C	1.5	0.6	0.1
-200 to 400°C sub-range 0 to 400°C	0.0	0.6	0.1
Digital			
All Ranges	0.0035	+1 Hz/Count	