sauermann®

TECHNICAL DATA SHEET

SAUERMANN DATA LOGGERS
KT 220 / KH 220 / KTT 220

Temperature / Humidity / Light / Current / Voltage / Pulse / Water Pressure

KEY FEATURES

- Record up to 5 parameters simultaneously
- Monitoring mode for detailed reporting outside of set points
- Large storage capacity of 1 million points
- Fast data downloading (18,000 points/second)
- Magnetic back for fast & simple mounting
- Large easy to read 2-line display
- 2 configurable set point alarms for each channel
- Free, downloadable basic software

SELECTION

Part No.	Display	Internal sensor		External sensor		Parameters	Number of record points
		Number	Type	Number	Type		
KT 220 - O	✓	1	Temperature	1	Input for universal probe[1]	Temperature, humidity, current, voltage, pulse & water pressure	1,000,000
KT 220 - N							
KH 220 - O	✓	3	Temperature, humidity & light			Temperature, humidity, current, voltage, pulse, water pressure & light	
KH 220 - N							
KTT 220 - O	✓	N/A		2	Inputs for thermocouple probes[2]	Temperature	
KTT 220 - N							

HOUSING

Dimensions
3.78'' x 2.57'' x 1.2''
(93.2 x 65.2 x 30.5 mm)

Weight
4 oz (115g)

Display (for models w/ display)
2 lines of LCD screen
Screen: 1.53'' x 1.33'' (39 x 34 mm)
2 indication LEDs (red and green)

Control
1 OK button
1 Selection button

Material
Compatible with food industry environment
ABS housing

Battery power supply
1 AA lithium 3.6 V battery

Protection
IP 65: KT 220
IP 54: KTT 220[3]
IP 40: KH 220

PC communication
1 micro USB input

Environmental conditions of use
Non-corrosive or combustible gases
Hygrometry: in non-condensing condition
Maximum altitude: 6561' (2000 m)

[1] Universal input allows compatibility with multiple probes. Reference page 3 for further information.
[2] More details about thermocouple probes on page 2.
[3] With all the thermocouple probes connected.

TECHNICAL FEATURES

	KT 220	KH 220	KTT 220
Units displayed	°F, °C, °Ctd, °Ftd, %RH, mV, V, mA, A, bar[1]	°F, °C, °Ctd, °Ftd, %RH, lux, fc, mV, V, mA, A, bar[1]	°F, °C
Resolution	0.1°F, 0.1°C, 0.1%RH, 1 mV, 0.00 V, 0.001mA, 0.1 A, 0.1 bar	0.1°F, 0.1°C, 0.1%RH, 1 lux, 0.1 fc, 1 mV 0.001 V, 0.001 mA, 0.1 A, 0.1 bar	0.1°F, 0,1°C
External input	Female micro-USB connector	Female micro-USB connector	Female micro-USB connector
Input for probe	1 universal input[2]	1 universal input[2]	2 inputs for thermocouple probes (K, J, T, N, S)
Internal sensor	Temperature	Temperature, humidity, light	Temperature
Type of sensor	Thermistor (NTC)	Thermistor (NTC), capacitive, photodiode	Thermocouple
Measuring range	Internal sensor[3]: -40 to 158°F (-40 to 70°C)	Internal sensor[3]: Temp.: -4 to 158°F (-20 to 70°C) Humidity: 0 to 100%RH Light: 0 to 10,000 lux	K: -328 to 2372°F (-200 to 1300°C) J: -148 to 1382°F (-100 to 750°C) T: -328 to 752°F (-200 to 400°C) N: -328 to 2372°F (-200 to 1300°C) S: 32 to 3200°F (0 to 1760°C)
Accuracies[4]	±0.8°F from -4 to 158°F (±0.4°C from -20 to 70°C) ±1.5°F below -4°F (±0.8°C below -20°C)	Temp: ±0.8°F from 32 to 122°F (±0.4°C from 0 to 50°C) ±1.5°F below 32°F or above 122°F (±0.8°C below 0°C or above 50°C) Humidity[5]: ±2%RH from 5 to 95%RH @ 59 to 77°F (15°C to 25°C) Light: ±10% of reading 10 lux	K, J, T, N: ±0.8°F from 32 to 2372°F (±0.4°C from 0 to 1300°C) ±(0.3% of the reading 0.8°F) below 32°F (±(0.3 % of the reading 0.4°C) below 0°C) S: ±1.1°F (±0.6°C)
Operating temperature	-40 to 158°F (-40 to 70°C)	-4 to 158°F (-20 to 70°C)	-4 to 158°F (-20 to 70°C)
Storage temperature	-40 to 185°F (-40 to 85°C)	-40 to 185°F (-40 to 85°C)	-40 to 185°F (-40 to 85°C)
Alarm set points	2 alarm set points per channel	2 alarm set points per channel	2 alarm set points per channel
Frequency of measurement	1 s to 24 h	1 s to 24 h	1 s to 24 h
Battery life	4 years[6]	4 years[6]	4 years[6]
Warranty	1 year	1 year	1 year
Directives	2011/65/EU RoHS II; 2012/19/EU WEEE; FCC part 15; UL 61010		

[1] Some units are available only with optional probes.
[2] Input allows to utilizing different compatible probes; see optional probes and cables on page 3.
[3] Other measuring ranges are available according to the connected probe; see optional probes on page 3.
[4] All accuracies specified in this document were conducted under laboratory conditions and can be guaranteed for measurement carried out in the same conditions, or carried out with calibration compensation.
[5] Factory calibration tolerance: ±0.88%RH; Temperature dependence: ±0.04 x [((T °F -32) x 5/9) -20] %RH (if T≤59°F or T≥77°F) / ±0.04 x (T-20) %RH (if T≤15°C or T≥25°C)
[6] On the basis of 1 measurement each 15 minutes at 77°F (25°C).

KTT 220 OPTIONAL THERMOCOUPLE PROBES[1]

Part No.	Description	Measuring ranges	Accuracies[2]	T$_{99}$[3]	Image & dimensions
Pipes					
SKV 150	Velcro probe for up to 4" pipes (Type K)	-4 to 194°F (-20 to 90°C)	±2.7°F (±1.5°C)	50 s	
SKCT	Pipe clamp probe for up to 2" pipes (Type K)	-40 to 302°F (-40 to 150°C)	±2.7°F (±1.5°C)	15 s	
Contact					
SCLK 150	Surface probe with handle and coiled cable (Type K)	-40 to 482°F (-40 to 250°C)	±2.7°F (±1.5°C)	5 s	5.9'' (150 mm) Ø0.59'' (Ø15 mm)
SCLCK 150	90° Surface probe with handle and coiled cable (Type K)	-40 to 482°F (-40 to 250°C)	±2.7°F (±1.5°C)	5 s	5.9'' (150 mm) Ø0.59'' (Ø15 mm)
Penetration					
SPK 150	S.S. Penetration probe with coilled cable (Type K)	-40 to 482°F (-40 to 250°C)	±2.7°F (±1.5°C)	30 s	5.9'' (150 mm) Ø0.12'' (Ø3 mm)
Immersion					
SIT 300 BT	Very low temperature immersion probe with coiled cable (Type T)	-328 to 122°F (-200 to 50°C)	±(-1.5% of reading +0.5°F) from -328 to -88.6°F (±1.5% of reading from -200 to -67°C) ±1.8°F from -88.6 to -40°F (±1°C from -67 to -40°C) ±0.9°F from -40 to 122°F (±0.5°C from -40 to 50°C)	2 s	11.81'', Ø 0.06'' (300 mm, Ø1.5 mm)

[1] All of the thermocouple temperature probes for the KTT 320 data loggers have a class 1 sensitive element as per IEC 584-1, 2 and 3 standards.
[2] All accuracies specified in this document were conducted under laboratory conditions and can be guaranteed for measurement carried out in the same conditions, or carried out with calibration compensation.
[3] Response time. Under application condition

KT 220 AND KH 220 OPTIONAL PROBES, CABLES AND AMMETER CLAMPS

Part No.	Description	Measuring ranges	Accuracies*	Image & dimensions
Temperature and humidity probe				
KTHA	RH / temp. stub probe	0 to 100%RH -4°F to 158°F (-20°C to 70°C)	Humidity**: ±2%RH from 5 to 95%RH @ 59°F to 77°F (15 to 25°C) Temp: ±0.8°F from 32 to 122°F (±0.4°C from 0 to 50°C) ±1.5°F below 32°F or above 122°F (±0.8°C below 0°C or above 50°C)	2.56'' (65 mm)
KTHD	RH / temp. remote probe			5.12'' (130 mm)
NTC Thermistor temperature probe				
KSI-50	2" immersion probe IP 65	-40 to 248°F (-40 to 120°C)	±0.8°F from -4 to 158°F (±0.4°C from 20 to 70°C) ±1.5°F (±0.8°C) beyond	Ø0.24'' x 1.97'' (Ø6 x 50 mm)
KSI-150	6" immersion probe IP 65	-40 to 248°F (-40 to 120°C)	±0.8°F from -4 to 158°F (±0.4°C from 20 to 70°C) ±1.5°F (±0.8°C) beyond	Ø0.24'' x 5.9'' (Ø6 x 150 mm)
KSA-150	Ambient air probe	-40 to 248°F (-40 to 120°C)	±0.8°F from -4 to 158°F (±0.4°C from 20 to 70°C) ±1.5°F (±0.8°C) beyond	Ø0.24'' x 5.9'' (Ø6 x 150 mm)
KSF-2	Wire probe	-4 to 212°F (-20 to 100°C)	±0.8°F from -4 to 158°F (±0.4°C from 20 to 70°C) ±1.5°F (±0.8°C) beyond	Ø0.12'' (Ø3 mm)
KSPP-150	Penetration probe IP 68	-40 to 248°F (-40 to 120°C)	±0.8°F from -4 to 158°F (±0.4°C from 20 to 70°C) ±1.5°F (±0.8°C) beyond	Ø0.12'' x 5.9'' (Ø3 x 150 mm)
KSP-150	Penetration probe IP 65	-40 to 248°F (-40 to 120°C)	±0.8°F from -4 to 158°F (±0.4°C from 20 to 70°C) ±1.5°F (±0.8°C) beyond	Ø0.18'' x 5.9'' (Ø4.5 x 150 mm)
KCV-220	Velcro probe	-4 to 194°F (-20 to 90°C)	±0.8°F from -4 to 158°F (±0.4°C from 20 to 70°C) ±1.5°F (±0.8°C) beyond	Ø0.18'' x 5.9'' (Ø4.5 x 150 mm)
Relative pressure probe (water probes)				
KSPE	Pressure probe	0 to 150 psi (0 to 10 bar)	±2.9 psi (±0.2 bar)	3.66'' (93 mm)
KSPE-2	High pressure probe	0 to 300 psi (0 to 20 bar)	±2.9 psi (±0.2 bar)	3.66'' (93 mm)
Current / voltage / pulse input cables				
KCTD-10-B	Voltage input cable for 220 Series	0 to 5V or 0 to 10V	±0.2% of the measurement ±1mV	
KCCD-02-B	Current input cable for 220 Series	0 to 20mA or 4 to 20mA	±0.2% of the measurement ±1mA	
KCTD-I-B	Pulse input cable for 220 Series		Max. voltage:5 V Input: TTL frequency counting Max. frequency: 10KHz	
Ammeter clamps				
KPID-100-BRF	Low current ammenter clamp probe	1 to 100A$_{AC}$ Frequency range: 40Hz to 5000Hz	±1% of reading ±0.1A	
KPID-200-BRF	Current ammeter clamp probe	1 to 200A$_{AC}$ Frequency range: 40Hz to 5000Hz	±1% of reading ±0.2A	
KPID-600-BRF	High current ammeter clamp probe	1 to 600A$_{AC}$ Frequency range: 40Hz to 5000Hz	±2.5% of reading ±0.6A	

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** Factory calibration tolerance: ±0.88 %RH; Temperature dependence: ±0.04 x [((T °F -32) x 5/9) -20] %RH (if T≤59°F or T≥77°F) / ±0.04 x (T-20) %RH (if T≤15°C or T≥25°C)

ACCESSORIES

Part No.	Description	Image
KILOG-LITE	Free basic software for configuration, and data download (tabular & graphical).	
KILOG-3-N	Premium software for configuration, data download, and fast and easy data saving, processing and calculations.	
KBL-AA	1 AA lithium battery	
KAV-220	Wall bracket and lock for 220 loggers	
KRB-220	Wired extension for class 220 data logger probes 16' (5 m) length with male & female mini-DIN connectors (up to 5 extensions can be wired together for greater length requirements)	
CK-50	USB / micro USB cable (connects the data logger to a PC)	

i **Recommended accessories to be used with data loggers**

50 series	120 series	220 series	320 series
Mini Loggers	*USB Loggers*	*Multi-function Loggers*	*Bluetooth Loggers*

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