

KR Series 100 mm Circular Chart Recorders

KR Series 100 mm 1 to 4 Pen Circular Chart Recorders

- ***Universal Inputs TCs, RTDs, mA, mV and Volts***
- ***Derived Variable Capability
for Math or Special Calculated Channels***
- ***Linearizations: 3/2, 5/2, Square Root and Log 10***
- ***.02% Operating Span Digital Accuracy***
- ***Four Alarms per Channel***
- ***Four Totalizers with Integral Nine Digit Readout***



Introduction

Field upgrades, addition of features and maintenance are quick, easy and affordable. Custom linearization for non-linear inputs, such as pH and conductivity, permits the use of standard linear charts. The KR Series integrators provide up to four channels of totalization in nine digits for flow and power applications. Totalization factors, low cutoff point, and reset on/off are entered via the keypad.

The KR Series is available in either a black or off-white housing to allow greater flexibility in panel design and appearance. Both housings are available with a NEMA 4X rating for those tough environments that require protection from the harmful effects of water and weather.

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Ordering Information

MODEL KR - - - -

Field No. 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

Fields 1, 2, 3. BASE MODEL (See Note 1)

- KR1- Base Model with 1 Pen
- KR2- Base Model with 2 Pens
- KR3- Base Model with 3 Pens
- KR4- Base Model with 4 Pens

Field 4. VOLTAGE (50/60 HZ)

- 1 - 110/120 Vac, 50/60 Hz
- 3 - 220/240 Vac, 50/60 Hz
- 5 - 24 Vdc

Field 5. INPUT TYPE, PEN 1*

Field 6. INPUT TYPE, PEN 2

Field 7. INPUT TYPE, PEN 3

Field 8. INPUT TYPE, PEN 4

- 0 - None
- 1 - Universal: Vdc, mVdc, (mA dc requires shunt); T/C types B, C, E, J, K, L, N, R, S, T, Ni/Ni/Mo; and RTDs 100 Pt, 100 Ni, 120 Ni, 10 Cu.
- 2 - 5 to 100 Vdc (1 megohm, 100:1 resistor)
- 3 - 4 to 20 mA dc (250 ohm shunt)**
- * Must select option code 1, 2 or 3.
- ** AH20-3447U005 250 ohm shunt

Field 9. ALARM RELAYS (See Note 2)

- 0 - None
- 2 - Two
- 4 - Four
- 6 - Six
- 8 - Eight

Field 10. DOOR/CASE

Black color

- A - Non-locking, glass window, NEMA 3
- B - Locking, glass, NEMA 3
- C - Non-locking, acrylic window, NEMA 3
- D - Locking, acrylic window, NEMA 3
- E - Non-locking, glass window, NEMA 4
- F - Locking, glass, NEMA 4X
- G - Non-locking, acrylic window, NEMA 4
- H - Locking, acrylic window, NEMA 4

Off-white color

- 0 - Non-locking, glass window, NEMA 3
- 1 - Locking, glass, NEMA 3
- 2 - Non-locking, acrylic window, NEMA 3
- 3 - Locking, acrylic window, NEMA 3
- 4 - Non-locking, glass window, NEMA 4
- 5 - Locking, glass, NEMA 4X
- 6 - Non-locking, acrylic window, NEMA 4
- 7 - Locking, acrylic window, NEMA 4

Field 11. ANALOG RE-TRANSMITTED SIGNAL AND TRANSDUCER POWER SUPPLY (See Note 2)

- 0 - None
- 1 - One transmitted signal
- 2 - Two transmitted signals
- 3 - Three transmitted signals
- 4 - Four transmitted signals
- 5 - Transducer power supply
- 6 - Transducer power supply, one signal
- 7 - Transducer power supply, two signals
- 8 - Transducer power supply, three signals
- 9 - Transducer power supply, four signals

Field 12. DIGITAL COMMUNICATION AND EVENT INPUTS (See Note 2)

- 0 - None
- 1 - RS-422
- 2 - Eight event inputs
- 3 - Sixteen event inputs
- 4 - RS-422, eight event inputs
- 5 - RS-422, sixteen event inputs

Field 13. TOTALIZERS (assignable to any input)

- 0 - None
- 1 - One
- 2 - Two
- 3 - Three
- 4 - Four

Fields 14, 15. SPECIALS

- 00 - None
- 01 - Not factory programmed

Note 1. Each unit is shipped with one box of standard circular charts (0-100); one instruction manual; two sets of pens for each pen; and one set of mounting hardware, except wall mounted recorders. If chart requested is other than "GDXX," four additional charts must be purchased. Customer specified charts could be shipped under separate cover.

Note 2. If more than four alarm relays are ordered, recorder is limited to maximum of eight event inputs and two transmitted signals. If more than eight event inputs, or more than two transmitted signals are ordered, recorder is limited to maximum of four relays.

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Specifications

General:	Number of Inputs:	1, 2, 3 or 4
	Configuration:	Digital display and integral keypad
	Writing System:	Blue, red, green and black disposable markers. 1500 feet of line.
	Chart Type:	Circular, 100 mm calibrated width
	Chart Speeds:	One to 4096 hours per revolution
	Display:	40 character, vacuum fluorescent
	Power Requirements:	90 to 260 Vac, 25 VA. Switch selectable for nominal 120 or 240 Vac operation. 24 Vdc, 25 W.
Physical:	Environment:	0 to 50°C; 10 to 90% rh
	Panel Space:	13.96" x 14.17" (380 mm x 360 mm)
	Cutout:	13.58" x 13.39" (345 mm x 340 mm)
	Depth:	5.8" (148 mm)
	Weight:	15 pounds (7 kg)
Performance:	Input Resolution:	0.01% of operating gain span
	Pen Response:	Five seconds full scale
	Channel Update:	Each channel scanned every 500 milliseconds
	Pen Position Resolution:	0.2% of chart range
	Display Accuracy:	0.2% of operating gain span
	CJC Rejection:	0.04°C/°C from 25°C
	Input Isolation:	250 Vac
	Input Impedance:	Greater than 20 megohm
	Rejection:	Common mode: 120 dB @ 50/60 Hz Normal mode: 60 dB @ 50/60 Hz
	Basic Parameters:	Input Types:
Linearizations:		T/C, RTD, square root, 3/2 and 5/2 power, log and custom curve
Memory:		Configuration saved in EEPROM, active values (totalizers, average, etc.) saved 100 hours by a "super" capacitor
Alarms:		Four per channel, including derived channels: high, low, deviation, and rate of change
Options:		NEMA 4X case
		Alarm Relays: Up to eight individually assignable 30 Wdc or 37.5 Vac res. <i>Maximum:</i> 125 V; 0.3 amps @ 125 Vac; 1.0 amp @ 30 Vdc
		Input Current Shunts
		Input Voltage Attenuators
		Totalizer: Up to four assignable integrators
		Transmitter Power Supply: Four isolated, 24 Vdc, 20 mAdc supplies
	Derived Variable: Standard formulas for mass flow, humidity, F ₀ , ZrO ₂ , user entered customized calculation: +, -, *, /, average, high/low select, high/low peak, log 10 power 10, 3rd order polynomial.	
	Retransmission: 1, 2, 3 or 4 isolated, scaled 4 to 20 mAdc (into up to 600 Ω) or 1 to 5 V outputs.	
	Custom Linearization: Uses polynomial curve fit for 11 user entered data point pairs.	
	Communications: One asynchronous RS-422 serial channel, software selectable. Baud rates of 9600, 4800, 2400, 1200, 600, 300.	

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Features

Programmability

The recorder can be quickly and easily configured to your exact application using the integral keyboard and display. Menu driven selections provide plain English prompts on the alpha-numeric display. Six front panel keys are used to completely configure the KR. Operator control functions are separate from the password protected configuration inputs.

Inputs

Universal input channels provide flexibility and can be configured to accept inputs from RTDs, TCs, current Vdc and mVdc sources. Four periodic timers work with derived variable calculations and totalizers for expanded operating capabilities.

Math

The KR offers a derived variable capability of up to two general (math) or specialized (mass flow, relative humidity, etc.) calculated channels, as well as custom linearization to match a specific transducer output, tank profile, etc.

Display

Channel information is displayed individually with measured value, channel number, engineering units, tag name and alarm information. Tag names can be up to sixteen characters in length to fully identify the channel to the operator.

Alarms

Up to four alarms per channel can be configured to provide absolute alarming, deviation alarming to "bracket" a setpoint, or rate-of-change alarming to "predict" problems.

Options

An optional remote counter output can be used to drive electro-mechanical counters. An optional RS-422 serial channel provides communications with computers and data acquisition systems and permits remote programming from a control or host computer.

Mounting Dimensions

