K7 Series 180 mm Strip Chart Recorders

K7 Series Recorder and Data Logger
7 inch (180 mm) Continuous, Multipoint and Videographics

- ***Tracing and/or Data Logging***
- ***Extensive Event Capabilities***
- ***Longer Descriptor Tags***
- ***Easy Function Block Software***

optional optional

This feature rich recorder/data logger provides unmatched event capabilities. It includes a 10 inch feature set in a lower priced 7 inch chassis.

Optional Features

- RS-485 Communications
- Two Levels of Math Capability
- CE, CSA and Certified Calibration
- Memory Card Data Storage

Introduction

Barber-Colman K7 Series Strip Chart Recorders are available with a wide range of features to meet virtually every need. From the two point model K7C continuous trace recorder to the model K7G videographic recorder with 48 inputs, these units represent an unrivaled means of data acquisition and process recording. The models offered in the K7 Series include:

K7C	7” continuous trace with digital display
K7M	7” multipoint trace with digital display
K7G	7” multipoint trace with graphic display

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Ordering Information

MODEL K 7 ☐ ☐ - ☐ ☐ ☐ ☐ ☐ - ☐ ☐ ☐ - ☐ - ☐ ☐

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

Fields 1 through 3. BASE MODEL
K7C - 7" Continuous trace with digital display
K7M - 7" Multipoint trace with digital display
K7G - 7" Multipoint trace with graphic display

Field 4. NUMBER OF TRACES
0 - Multipoint model (K7M or K7G)
Model K7C
2 - Two
3 - Three
4 - Four
6 - Six

Field 5. UNIVERSAL INPUTS*
(Eight inputs per card. Model K7C must use 1, 2, or 3)
0 - None
1 - One card
2 - Two cards
3 - Three cards

Field 6. TWO WIRE DC INPUTS*
(16 inputs per card. Not available on model K7C)
0 - None
1 - One card
2 - Two cards
3 - Three cards

Field 7. LINE VOLTAGE AND MOUNTING
0 - 90 to 130 Vac, 50/60 Hz, panelmount
1 - 90 to 130 Vac, 50/60 Hz, bench stand/handle
2 - 190 to 260 Vac, 50/60 Hz, panelmount
3 - 190 to 260 Vac, 50/60 Hz, bench stand/handle

Field 8. RELAY OUTPUTS*
(Eight outputs per card)
0 - None
1 - One card
2 - Two cards
3 - Three cards

Field 9. 250 Ω SHUNTS
0 - None
1 - One
2 - Two
3 - Three
4 - Four
5 - Five
6 - Six
7 - Seven
8 - Eight
9 - Nine
Additional shunts can be ordered separately: part number CA042K25.

Field 10. DOOR
1 - With glass (required on model K7G)
2 - With polycarbonate

Field 11. MATH
0 - None
1 - Level 1
2 - Level 2
3 - Totalizers, timers, counters
4 - Level 1, plus totalizers, timers, counters
5 - Level 2, plus totalizers, timers, counters
6 - Continuous emissions monitor (CEM)

Field 12. MEMORY CARD
0 - None
1 - Reader only
2 - Reader and 128K card
3 - Reader and 512K card
4 - Reader and 2M card

Field 13. COMMUNICATIONS, CONFIGURATION AND ARCHIVING
0 - None
1 - RS-232/422/485 Communications
2 - PC configuration software
3 - ASCII data logging (product data)
4 - RS-232/422/485 and PC configuration software
5 - RS-232/422/485 and ASCII data logging
6 - PC configuration software and ASCII data logging
7 - RS-232/422/485 and PC configuration software, and ASCII data logging

Field 14. CHART ILLUMINATION
0 - No
1 - Yes

Field 15. SPECIALS
0 - None
1 - Certified calibration
2 - CSA testing/labeling
3 - CE Approval (European Community)
4 - Certified calibration and CSA
5 - Certified calibration and CE
6 - Certified calibration, CSA, and CE

*Cannot exceed combined total of three relay and input cards.

K7 Series 180 mm Strip Chart Recorders

Specifications

Recorder General

Input board types:	8 channel universal input; 16 channel DC input
Output board type:	8 channel relay output
Maximum number of I/O boards per type:	3 off 8 channel input, 3 off relay output 3 off 16 channel input
Maximum number of inputs:	48 DC (Vdc, mVdc, mAdc, T/C, contact closure, but not resistance); 24 resistance; 39 contact closure
Maximum number of relay outputs:	8 times number of free slots
Maximum number of traced channels:	24 total input/derived

Environmental

Performance:	To BS2011: 1981
Temperature limits, operating:	0 to 50°C
Temperature limits, storage:	-20 to 70°C
Humidity, operating:	5 to 80% rh, non-condensing
Humidity, storage:	5 to 90% rh, non-condensing
Protection:	IP54 (door and bezel); IP31 (housing)
Shock:	IEC1010 1990 (safety); IEC 873: 1986
Vibration:	IEC1010 1990 (safety); IEC 873: 1986

Electromagnetic Compatibility (EMC)

Static:	IEC801.2: 15 kVdc (door open)
RF emissions:	To EN 55022 level B
Fast transients:	IEC 801.4; level 3: less than 40µV deviation; level 4: self recovery
RF immunity:	IEC 801.3 less than 40µV deviation
Electrical safety:	To IEC 1010: 1990 Class 1

Physical

Bezel size (mm; inches in parenthesis):	288 H x 288 W x 45 D (11.34 x 11.34 x 1.77)
Panel cutout size (mm; inches in parenthesis):	281 x 281, +1.4, -0 (11.06 x 11.06)
Depth behind bezel rear face:	304 mm with rear cover (11.97”); 275 mm no rear cover (10.83”)
Weight (8 channel instrument):	12.5 kg. maximum (27.6 pounds)
Panel mounting angle:	Up to ±30° from vertical

Performance

Maximum scan and update rate:	All parameters in one second
Maximum print rate (trending):	24 channels in three seconds
Maximum chart speed:	1500 mm/hr
Clock accuracy:	Better than 60 ppm

K7 Series 180 mm Strip Chart Recorders

Specifications (continued)

Printing System

Type:	Printhead with six colored dotting nibs (red, orange, green, blue violet black)
Printhead life:	Greater than 1.5 million dots per color when controller continuously powered; to prolong pen life, remove printhead if recorder is left unpowered for extended period
Dot diameter:	0.35 to 0.6 mm
Dot spacing (vertical):	chart speed less than 300 mm/hr: 0.25 mm chart speed 600 mm/hr: 0.5 mm chart speed 1500 mm/hr: 1.25 mm
Dot spacing (horizontal):	0.39 mm
Characters per line:	77
Noise level:	55 db maximum (door closed)
Maximum trending rate:	24 channels per pass (three seconds)

Paper Transport

Type:	Tractor feed with selectable chart speed from 1 to 1500 mm/hr (0.4 to 60”/hr)
Chart length:	22 meters (z-fold depth 75 mm)
Chart width:	224 mm overall; 180 mm calibrated
Pen to paper accuracy:	0.25% of calibrated chart width
Transport accuracy:	Better than 10 mm in 22 meters

Power Requirements

Line voltage (45 to 65 Hz.):	90 to 132 Vac or 180 to 264 Vac (user selectable)
Maximum power:	70 W
Fuse type:	Ceramic 20 mm 3.15 Amp; fast blow
Interrupt protection:	100 ms at 50% load
Memory Protection:	EEPR0M for configuration; battery backed RAM for operating features
RAM/clock battery type:	Nickel-Cadmium (rechargeable)
Charge period (no power to recorder):	Three months minimum at 25°C; one month minimum at 50°C

Universal 8 Channel Input Board

General:	**Number of inputs:**	Eight
	Termination:	Removable edge connector/terminal block
	Input types:	Vdc, mVdc, mAdc (with shunt), T/C, RTD (2 or 3 wire), Ω, contact closure
	Input type mix:	Software selected on configuration for each channel
	Measurement frequency:	All channels in one second
	Step response to within resolution:	Two seconds
	Noise rejection, common mode:	150 db above 45 Hz channel to channel and channel to grd
	Noise rejection, series mode:	67 db above 45 Hz
	Maximum common mode voltage:	250 Vdc
	Maximum series mode voltage:	20 mVdc at lowest range; 500 mVdc peak at highest range
	Basic isolation (IEC1010):	250 Volts channel to channel and channel to ground
	Dielectric strength:	1500 Vac for one minute channel to channel and channel to ground
	Insulation resistance:	50M Ω at 500 Vdc
	Input impedance:	Greater than10M Ω

Specifications (continued)

	Over voltage protection:	60 Vdc peak, 500 Vdc through 50k Ω resistor
	Open circuit detection (to 200 mV range):	100 nAdc current maximum; eight seconds recognition time (maximum); 40M Ω minimum break resistance
DC Input:	**Ranges:**	-10 to 40 mVdc; -50 to 200 mVdc; -500 mVdc to 1 Vdc; -5 to 10 Vdc
	Temperature performance (typical):	0.0001% of range + 70 ppm of reading per °C
	Shunt:	Externally mounted resistor modules
	Additional error due to shunt:	0.1%

Typical performance of instrument at 20°C

Range	Resolution	Performance
-10 to 40 mV	1.2 µVdc	0.09% reading + 0.1% range
-50 to 200 mV	6.0 µVdc	0.08% reading + 0.0009% range
-0.5 to 1 V	36 Vdc	0.08% reading + 0.008% range
-5 to 10 V	360 µVdc	0.08% reading + 0.007% range

Thermocouple Data:	**Linearization errors:**	0.15 °C or better
	Bias current:	12 nA (40 nA at 70°C)
	Cold Junction (CJ) types (selectable):	Off, internal, external, remote
	CJ error:	0.5 °C or better
	CJ rejection ratio:	25:1 minimum
	Remote CJ:	Via user selected input channel
	Upscale/downscale drive:	Configurable for each channel

T/C Type	Range (°C)	Standard
B	200 to 1800	IEC584.1: 1977 Hoskins
C	0 to 2300	IEC584.1: 1977 Hoskins
E	-200 to 1000	IEC584.1: 1977
J	-200 to 1200	IEC584.1: 1977
K	-200 to 1370	IEC584.1: 1977
L	-200 to 900	DIN 43710
N	-200 to 1300	IEC584.1: 1977
R	-50 to 1760	IEC584.1: 1977
S	-50 to 1760	IEC584.1: 1977
T	-250 to 400	IEC584.1: 1977
U	-100 to 600	DIN 43710-85
NiNiMo	0 to 1300	Chessell
Platinel II	-100 to 1300	Engelhard R83

Specifications (continued)

Three Wire RTD:

Linearizations: Pt100, Pt1000, Cu10, Ni100, Ni120
Linearization errors: 0.012°C or better
Influence of lead resistance: error: 0.15% of lead resistance
mismatch: 1 Ω per Ω

RTD Type	Range (˚C)	Standard
Pt100	-200 to 850	IEC751: 1981
PT1000	-200 to 850	Based on IEC751: 1981
Cu10	-20 to 250	General Electric
Ni100	-50 to 170	DIN 43760
Ni120	-50 to 170	Based on DIN 43760

Typical Pt100 figures:

Range (˚C)	Resolution (˚C)	Performance
-200 to 200	0.032	0.1% reading +0.15˚C
-200 to >1000	0.19	0.1% reading + 0.74˚C

Ω ranges: 0 to 180 Ω; 0 to 1.8k Ω; 0 to 10.0k Ω
Temperature performance: (8 ppm range + 75 ppm reading) per °C (typical)

Range	Lead Resistance	Resolution (mΩ)	Performance (in inst. at 20˚C)
0 to 180 Ω	10 Ω	12.5	0.1% reading + 0.04% range
0 to 1.8 kΩ	10 Ω	75	0.1% reading + 0.02 % range
0 to 10.0 kΩ	10 Ω	750	0.1% reading + 0.06% range

Other linearizations: √value; $(value)^{3/2}$; $(value)^{5/2}$
User defined tables (up to 3 off)

Contact Closure (switch) Inputs:
Type: Volt-free contact
Wetting voltage: 5 volts
Minimum latched pulse width: 10 ms.
De-bounce: inherent 1 second

Specifications (continued)

16 Channel DC Input Board

General:	**Number of inputs:**	16 maximum
	Termination:	Edge connector/terminal block
	Input types:	Vdc, mVdc, mAdc (with shunt), T/C, contact closure (not channels 1, 8, 16)
	Input type mix:	Software selected on configuration for each channel; maximum of eight different linearizations (seven + linear) allowed per board
	Measurement frequency:	All channels in one second
	Step response:	1.5 seconds
	Noise rejection, common mode:	150 db above 45 Hz (channel to channel and channel to grd)
	Noise rejection, series mode:	Greater than 60 db between 10 to 100 Hz
	Maximum series mode voltage:	Hardware range + 15 mVdc
	Basic isolation (IEC1010):	250 Vdc channel to channel and channel to ground
	Dielectric strength:	1500 Vac continuous (channel to channel and channel to ground)
	Insulation resistance:	50M Ω at 500 Vdc
	Input impedance:	Greater than 10M Ω
	Over voltage protection:	60 Vdc peak, 500 Vdc through 50 kΩ resistor
	Open circuit detection (85 mV range only):	250 nA current maximum; eight seconds recognition time (maximum); 40M Ω minimum break resistance
	Damping:	2, 4, 8, 16, 32, 64, 128 or 256 seconds time constant as configured. Damping improves o/p noise and performance figures listed in table below.
DC Input:	**Ranges:**	-15 to 85 mVdc; -1.0 to 5 Vdc
	Temperature performance (typical):	0.01% of reading ±0.1 µV per °C
	Shunt:	Externally mounted resistor modules
	Additional error due to shunt:	0.1%
	Typical performance in instrument at 20°C	

Thermocouple Data (in addition to above):

Range	O/P Noise	Performance
-15 to 85 mV	±6 µV	0.1% reading ±6 µV
-1 to 5 V	±200 µV	0.1% reading ±100 µV

Linearization errors:	0.15 °C or better
Bias current:	Less than 2 nA (Less than 40 nA at 70 °C)
Cold Junction (CJ) types (selectable):	Off, internal, external, remote
CJ error:	1 °C or better
CJ rejection ratio:	25:1 minimum
Remote CJ:	Via user selected input channel
Upscale drive:	Configurable for each channel

Specifications (continued)

T/C Type	Range (˚C)	Standard
B	200 to 1800	IEC584.1: 1977 Hoskins
C	0 to 2300	IEC584.1: 1977 Hoskins
E	-200 to 1000	IEC584.1: 1977
J	-200 to 1200	IEC584.1: 1977
K	-200 to 1370	IEC584.1: 1977
L	-200 to 900	DIN 43710
N	-200 to 1300	IEC584.1: 1977
R	-50 to 1760	IEC584.1: 1977
S	-50 to 1760	IEC584.1: 1977
T	-250 to 400	IEC584.1: 1977
U	-100 to 600	DIN 43710-85
NiNiMo	0 to 1300	Chessell
Platinel II	-100 to 1300	Engelhard R83

Other linearizations: $\sqrt{}$value; (value)$^{3/2}$; (value)$^{5/2}$
User defined tables (up to 3 off)

Contact Closure (switch) Inputs (not available for channels 1, 8, 16):

Type: Volt-free contact
Wetting voltage: 5 Vdc
Minimum latched pulse width: 18 ms.
De-bounce: inherent 1 second

Relay Output Board:

Number of relays per board: Eight
Contact format: Simple pole changeover (single set of common, normally open, and normally closed contacts)
Estimated life at low load (60 VA): 1,000,000 operations
Maximum contact voltage*: 250 Vac
Maximum contact current*: Make: 8 Amps; continuous: 3 Amps; break: 2 Amps
Maximum switchable power*: 60 watts or 500 VA
Basic isolation (IEC 1010): 250 Vac channel to channel and channel to ground
Safety isolation (IEC 1010): 250 Vac channel to channel and channel to ground
Dielectric strength: 1000 Vac for one minute contact to contact
1500 Vac for 1 minute channel to channel/channel to ground

* With resistive load; derate with reactive or inductive load

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Features

Continuous or Multipoint Trace: The K7 series provides up to six traces in both the continuous and multipoint versions. Both models use a single, six nib printhead. A unique writing system, called Trace-Lock, in model K7C operates by storing the incoming signals in a buffer. When the buffer is full, charting starts and a second buffer is immediately used to hold incoming real time signals. The chart and print cartridge move in combination to draw a trace segment. When a trace segment is completed, the chart is backwound and the cartridge positioned for the next channel. The Trace-Lock firmware insures that the segments are drawn accurately and join to form a continuous trace.

Model K7M is capable of recording up to 24 traces at a time.

Annotation is the same in both models K7C and K7M: logs in black, chart range and channel information in the channel color.

Model K7C is particularly well suited for applications with slowly changing variables and reasonably slow chart speeds – i.e., 300 mm/hr or less. It offers six traces, wide chart, good resolution, color printing, fast scanning, excellent accuracy, and low cost per point.

K7C, K7M Display: The two line, 80 character vacuum fluorescent display shows up to four channel values simultaneously, or two channels with full descriptor and engineering units.

Video Graphics: The Barber-Colman color video graphics offering is available in 7” frames. Model K7G features paper back-up for documentation support upon alarm conditions.

Model K7G features a sophisticated, touch sensitive graphics screen using the common hierarchical-oriented software structure found on the continuous and multipoint units. All of this means simple, one time learning for all Barber-Colman recorders.

The recorder displays process values and alarm conditions through group structures. Values can be displayed by groups, bargraphs, trend display or multi-group display. Each method has unique presentation features, allowing you to enhance the look of your equipment.

Printing Systems: Model K7G contains a high speed color printer that allows you to print on alarm, or on demand. In addition, stored process data can be recalled and printed.

K7G Display: The high resolution, color, liquid crystal display (LCD) with its touch sensitive capability allows the user to switch from screen to screen without the reliability problems typically associated with mechanical switches.

Input/Output Cards: The K7 series accommodates eight channel universal input, and eight channel Form C relay output cards. Universal inputs accept most thermocouple types, along with RTD, DC voltage and current. Model K7M also accepts 16 channel DC inputs. The instrument will hold a combined total of three cards.

Input Types: Input types are listed in the specifications section of this bulletin.

Configuration: Configuration is password protected and follows clear English prompts. PC software is available to configure the recorder via a built-in connector, memory card or the optional communications port.

Alarms: Up to four alarms per channel can be configured as absolute high, absolute low, deviation, rising or falling rate of change, or digital change of state. All alarm setpoints are scanned every second.

Digital alarms can be selected only for channels defined as “I/P Type Dig.” Channels defined as “Dig” can have only digital alarms.

For absolute and deviation types, a hysteresis value can be configured to prevent continuous triggering of the alarm if the process variable hovers near the setpoint (or threshold). A “dwell” period can be configured in all types of alarms to delay the alarm becoming active after it has been triggered. If the value goes out of alarm during the dwell time, the alarm is ignored.

Alarms can be used to initiate a wide range of jobs, including operating output relays.

Features (continued)

Alarm Action:

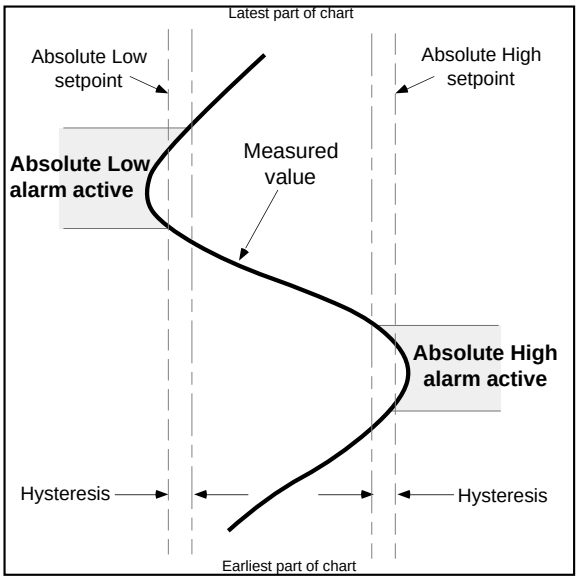
The four types of alarm are as follows:

Off: The alarm is disabled.

Trigger: Once active, the alarm stays active until the alarm source returns to a non-alarm state. Any continuous job – e.g., change print mode – remains active for the duration of the alarm state. Trigger alarms are not annunciated in any way (no bell symbol displayed; no message printed) and do not appear in history lists.

Latching: Once active, the alarm stays active until it is acknowledged *and* the alarm source has returned to a non-alarm state. Any continuous job will remain active for the duration of the alarm state.

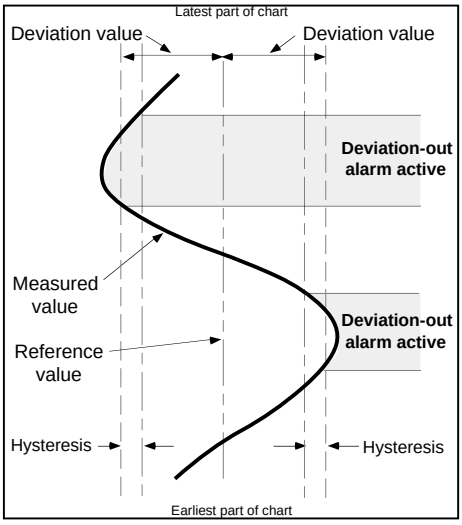
Non-latching: Once active, the alarm stays active until the alarm source returns to a non-alarm state. Any continuous job will remain active for the duration of the alarm state.

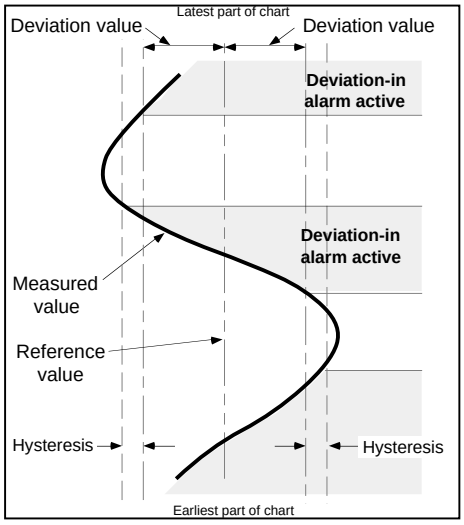


Absolute Alarm Definitions

An absolute high alarm becomes active when its setpoint value is exceeded. The alarm remains active until the measured value falls below setpoint minus hysteresis.

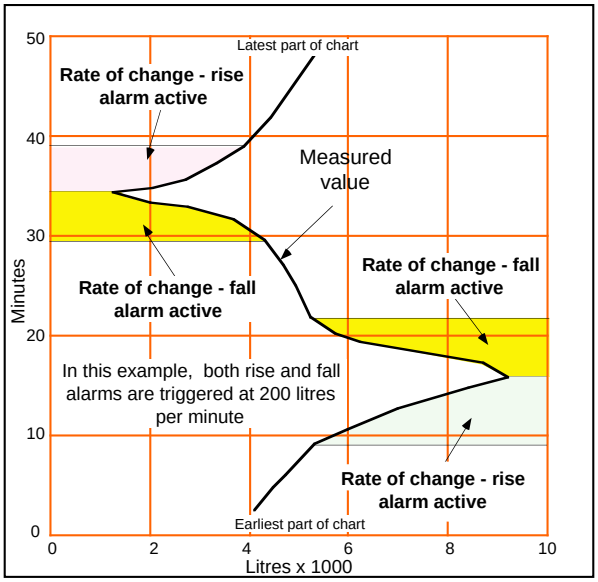
An absolute low alarm becomes active when its setpoint is exceeded in the negative sense. It remains active until the value rises above setpoint plus hysteresis.





Deviation Alarm Definitions

Features (continued)



Rate of Change Alarm Definitions

With rate of change alarms, a value, a time period, and an averaging period must be configured. The alarm is triggered if the measured value changes by more than the configured value in less than the configured time period. The averaging period is used to change the sensitivity of the alarm, such that noise spikes, or normal oscillations in the input signal do not trigger false alarms.

Status Indicators:

During normal operation of the recorder, i.e., not in configuration, characters 39 and 40 of the top line of the display indicate recorder/input status as follows:

The bell symbol indicates channel alarm. The bell symbol flashes when an unacknowledged active alarm is present. It is steadily illuminated if an acknowledged alarm is present, but again flashes if a further unacknowledged alarm becomes active.

The letter “p” appears if the printer drive has been switched off.

The letter “I” appears if any item listed below is true. Current system errors can be viewed via the operator menu or instrument configuration menu:

- Fault with remote CJ temperature
- Battery is exhausted or missing
- Failure in RTC, or time/date have not been set
- Fault in the writing system
- Fault in an input or derived channel
- Battery-backed RAM failure or EEPROM failure
- Memory card battery low or exhausted

Features (continued)

Jobs:

A job is defined as an action that can be initiated by an alarm. You can configure jobs to be active continuously while the initiating source is active (or inactive), e.g., select chart speed B; or to carry out a particular task, e.g., increment totalizer number 3, as the result of a single trigger going active or inactive. Up to two jobs can be initiated by each trigger. Job triggers and possible job actions are listed below:

Job triggers: channel alarm; contact closure i/p; counter setpoint; totalizer setpoint; timer trigger; operator softkeys; instrument alarm.

Job Types	Job Actions
Chart jobs:	Switch chart drive on; switch to chart speed B; switch to print mode B; chart advance.
Trace jobs:	Trace specified channel/group; select color B for channel/group; rapid scale print.
Alarm jobs:	Acknowledge alarms of specified group; Disable alarms of specified group; sound buzzer.
Message jobs:	Output specified message to the chart, display or memory card.
Logging jobs:	Output specified log; switch to log interval B; switch to archive interval B.
Derived channel jobs:	Reset/trigger/disable/switch/trace specified or group of channels.
Timer jobs:	Start/reset specified timer; reset all timers (global reset).
Counter jobs:	Increment/decrement/pre-set/disable specified counter; pre-set/disable group of counters.
Totalizer jobs:	Pre-set specified totalizer/group of totalizers; Disable specified totalizer/group of totalizers.
Relay jobs:	Operate specified relay on specified (by address) relay board.
Clock jobs:	Add/subtract one hour; load pre-set time.

Optional Features

Memory Card:

These recorders offer the personal computer memory card reader option. The memory card is a convenient, cost effective means of capturing, storing, and transferring information – both process data and instrument configurations. Furthermore, it allows a user the convenience and time to prepare a configuration at a personal computer, and then download it to the instrument.

Model K7 recorders are designed for Type I, Release 2, SRAM (static random access memory) cards. Several different types of PCMCIA (Personal Computer Memory Card International Association) cards are commercially available. Each type is manufactured to specific sets of operating and electrical standards. Although commercially available cards are acceptable, all Barber-Colman PCMCIA cards have been modified to provide additional grounding to protect against static electricity. Since it is not practical to always power down a recorder before inserting or removing a memory card, the additional grounding minimizes the danger of static discharge damage.

Field 12 allows you to include the PCMCIA card reader and configuration storage to your recorder. Field 13 ASCII data logging allows the PCMCIA to store process data.

Communications:

This optional feature permits two way communication up to 19,200 baud with built-in MODBUS® protocol assuring compatibility with any standard SCADA system and many other instruments. A host computer can read up to 16 recorders on the RS-232/422-485 multi-drop communications loop.

Math:

A wide range of calculations from channel averages to complex formulas are possible with the use of math function blocks. More advance strategies can be implemented by the use of timers and counters, while totalizers are available for tasks such as integration of liquid flow or power signals.

Optional Features (continued)

Math Options	K7C	K7M, K7G
Level 1	8 DVs, basic	24 DVs, basic
Level 2	8 DVs, basic, advanced	24 DVs, basic, advanced
Totalizers	6	12
Timers	6	12
Counters	6	12
CEM	Level 2, TTC	Level 2, TTC

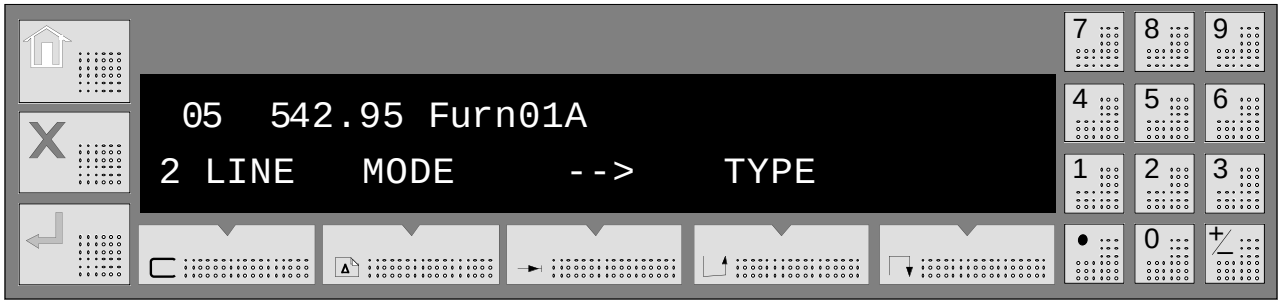
DV = Derived variable.
Basic math = Addition, subtraction, multiplication, division, constant, copy.
Advanced math = Square root, averaging, exponent, rate of change, minimum, maximum, rh, time stamp.
CEM = Continuous emissions monitoring.
TTC = Totalizers, timers, counters.

Certified Calibration: Upon request, factory calibration will be documented on certification form showing results of performance tests, and adherence to pre-defined standards.

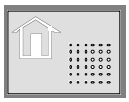
CSA: Upon request, factory testing and labeling of CSA approved product can be provided.

CE: Upon request, factory testing and labeling of CE approved product can be provided.

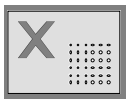
Operator Interface



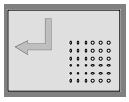
The three keys at the left end of the operator interface are the display control hardkeys They allow you to access and edit items with minimum effort.



The “home” key (top, left) returns the display to top level menus. When in an operating menu, the home key re-displays the top level operating menu. During configuration, the first press on the home key recalls the top level configuration menu; the second press displays the top level operator menu.

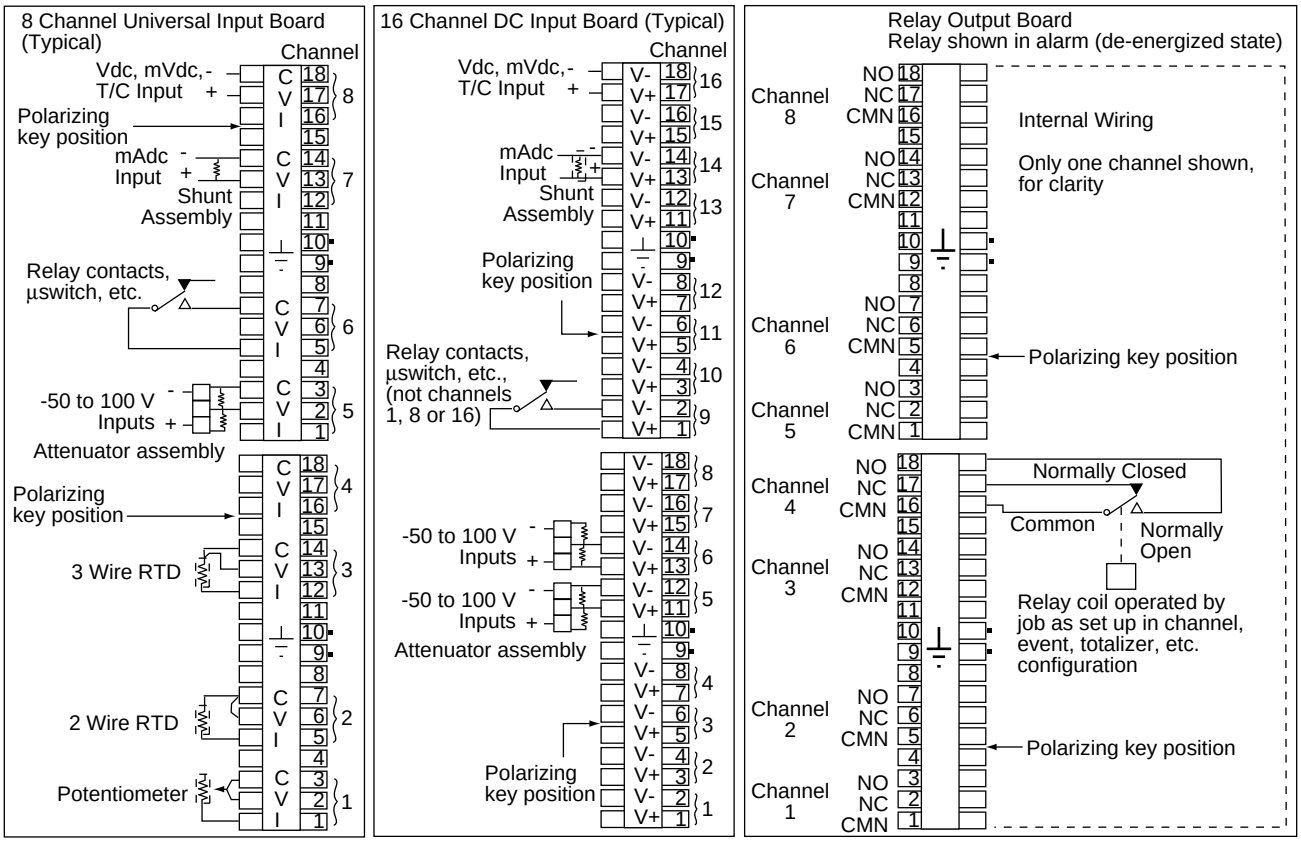


The “cancel” key (center, left) cancels all changes made since the “enter” key was last pressed. Each subsequent press of the key moves the user back one menu level.

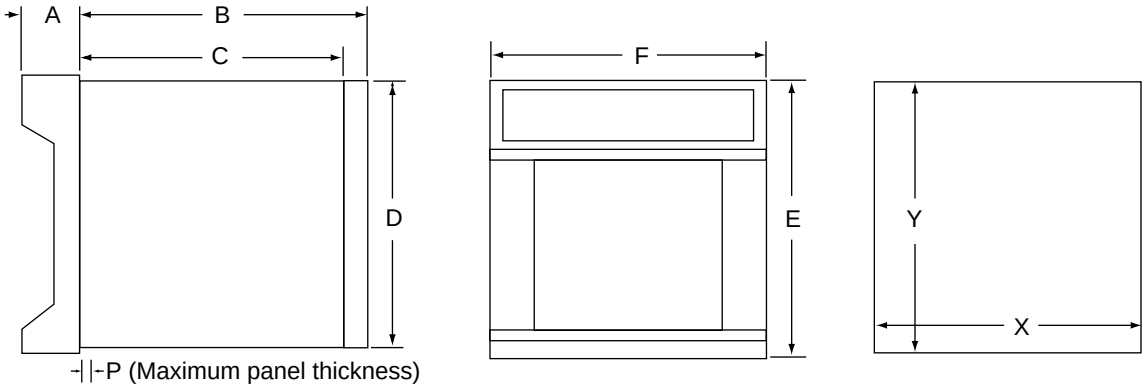


The “enter” key (bottom, left) confirms all the changes made and saves them in the recorder’s data base. Each subsequent press of the key moves the user back one menu level.

Wiring



Mounting Information



Side View | Front View | Panel Cutout

Model	Dimensions							Cutout	
	A	B	C	D	E	F	P	X	Y
K7C	45 (1.77)	304 (11.97)	275 (10.83)	276 (10.87)	288 (11.34)	288 (11.34)	42 (1.65)	281 (11.06) +1 -0 (+.04 -0)	281 (11.06) +1 -0 (+.04 -0)
K7M									
K7G	60 (2.36)								

Dimensions shown in millimeters, inches in parenthesis ( ).