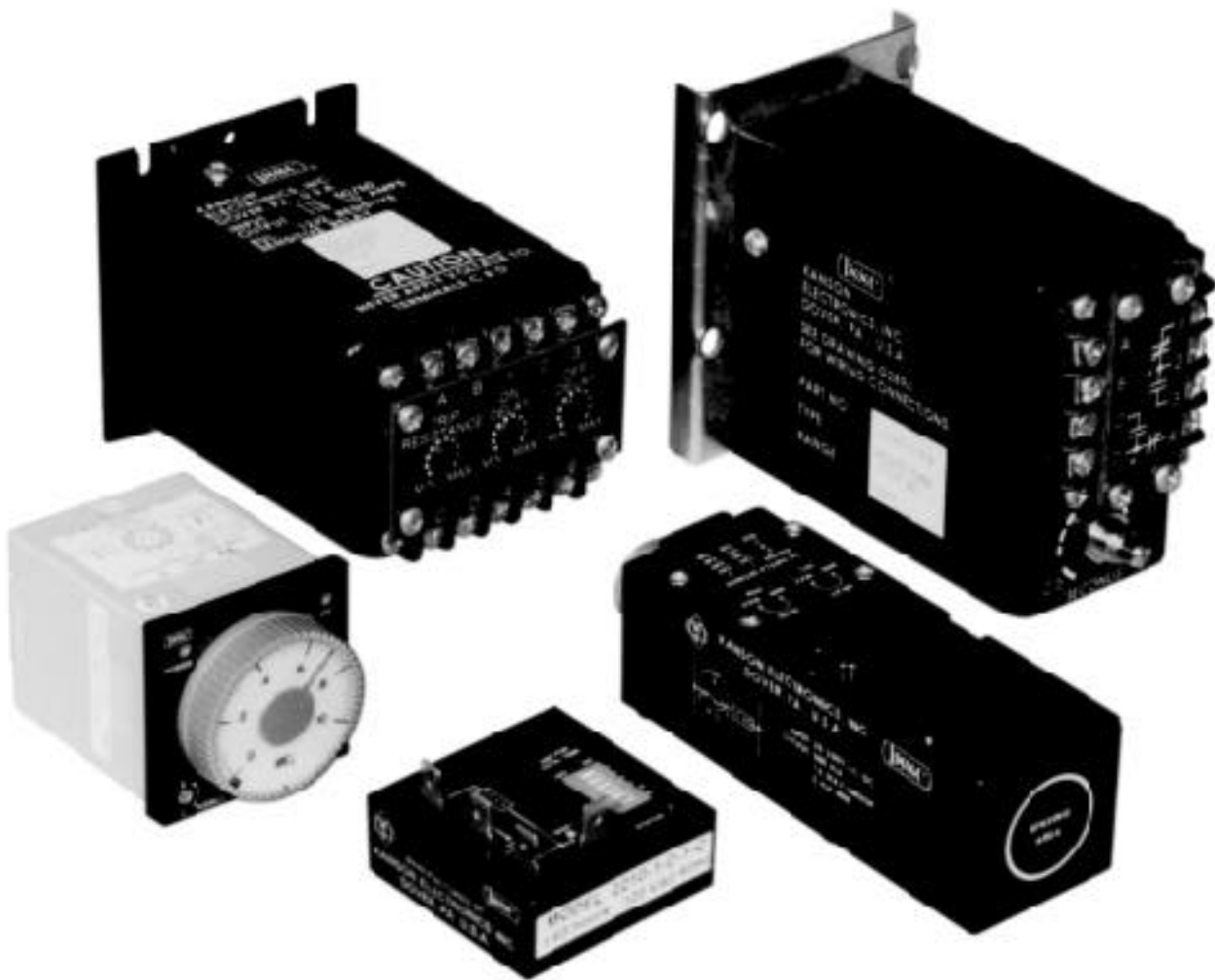




SOLID STATE TIMER AND CONTROL COMPONENT CATALOG



(ISSC)

KANSON ELECTRONICS, INC.

1017-SP7

Utility Industry on delay timer with high voltage DC output. Time proven circuitry in a rugged metal can housing, functions reliably in the toughest environments. See page 5.



2210 Non-volatile on delay timer suitable for machine maintenance applications. This same timer is also available with custom timing functions. See pages 16 and 17.

PLC watchdog applications.

Many designers are specifying external watchdog timers in PLC systems. The 1217 motion detector is an ideal selection for this application. It is available with a 24V AC/DC power supply for use in low voltage systems. See page 28.



1248A our popular combination proximity sensor and motion detector in a compact limit switch housing. See page 29.



1232 Resistance detector with built-in time delays, eliminate problems caused by part bounce or poor initial contact. See page 36.



Analog setting dials
pages 18 thru 21

New to this catalog!

DIN style timers in both analog and digital versions.



Pushbutton
setting controls
pages 22 thru 24

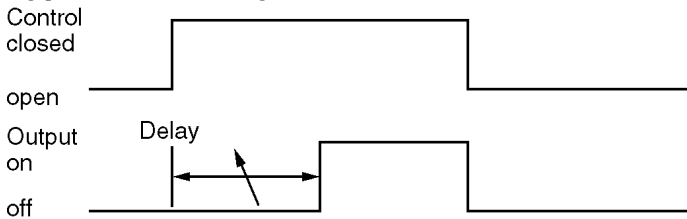
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TIMING FUNCTIONS

(ISSC)

KANSON ELECTRONICS, INC.

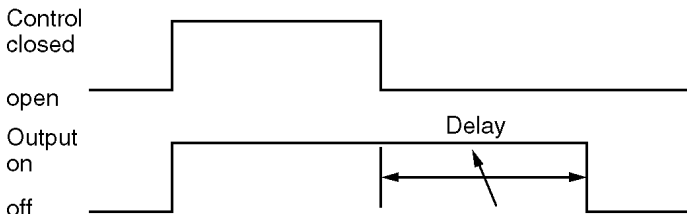
Type 1 - On Delay



Adjustable time delay on energizing

- Closing the control circuit starts the time delay
- Opening the control circuit during timing resets time delay to zero - no accumulation of time delay or false output

Type 2 - Off Delay



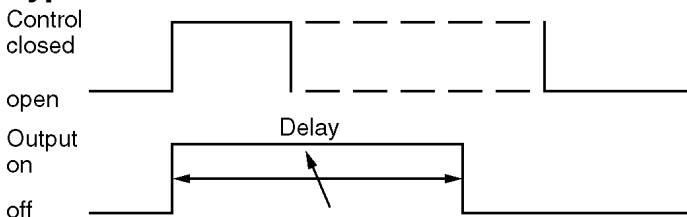
Adjustable time delay on de-energizing

- Closing the control circuit energizes output
- Opening the control circuit starts the time delay
- Reclosing the control circuit during timing resets time delay to zero no accumulation of time delay or false output

Type 3 - Programmable

User programmable to either On Delay, Off Delay, Pulsed Interval, Maintained Interval or other function

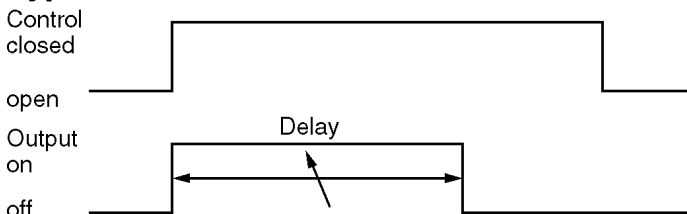
Type 4 - Pulsed Interval



Adjustable time output pulse

- Closing the control circuit initiates timed output pulse
- Opening and closing the control circuit during timing will not effect timing or output

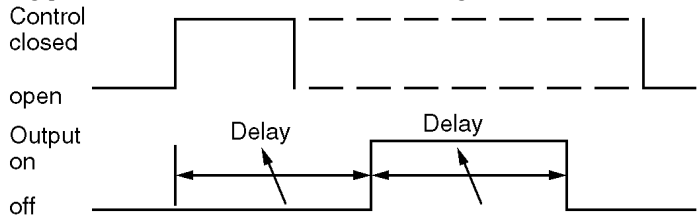
Type 5 - Maintained Interval



Adjustable timed output interval

- Closing the control circuit starts timed output interval
- Opening the control circuit during timing resets time delay to zero and de-energizes output

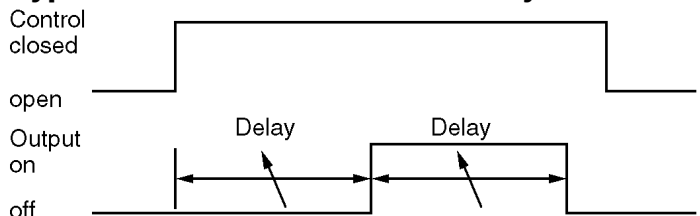
Type 6 - Pulsed Off-On One Cycle



Adjustable dual time delay

- Closing the control circuit initiates timing sequence
- Opening and closing the control circuit during timing will not effect timing or output

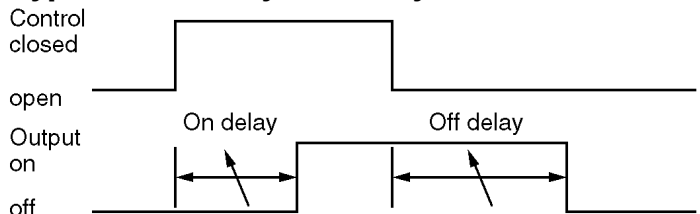
Type 7 - Maintained Off-On One Cycle



Adjustable dual time delay

- Closing the control circuit starts timing sequence
- Opening the control circuit during timing resets both time delays to zero and de-energizes output

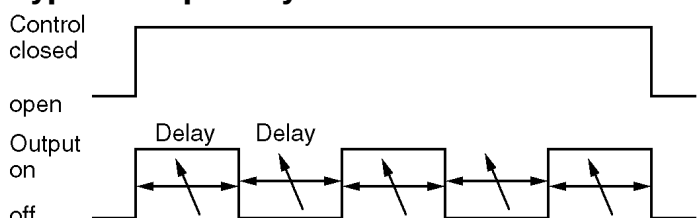
Type 8 - On Delay/Off Delay



Adjustable dual time delay

- Closing the control circuit starts timing sequence
- Combines functions of On Delay and Off Delay into a single timer

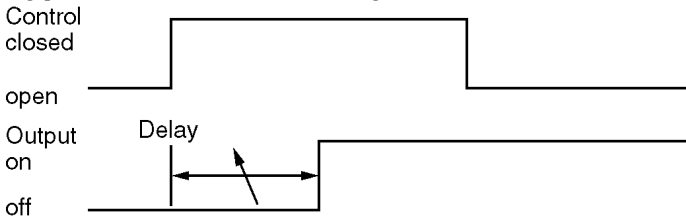
Type 9 - Repeat Cycle



Adjustable dual time delay

- Closing the control circuit starts timing sequence
- Opening the control circuit during either timing period resets both time delays to zero and de-energizes output

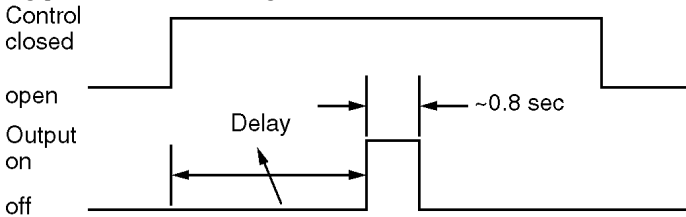
Type E - Pulsed On Delay Latched



Adjustable dual time delay

- Closing the control circuit initiates timing sequence
- Opening and closing the control circuit during timing will not effect timing or output

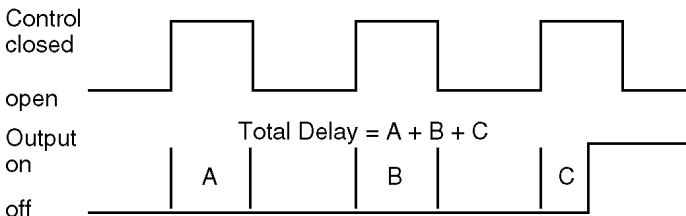
Type OC - One Cycle, Maintained Interval



Fixed time (0.8 sec.) output pulse

- Closing the control circuit starts the timing sequence. The output contacts change state for 0.8 sec. after time delay is completed
- Opening the control circuit during timing resets the time delay to zero

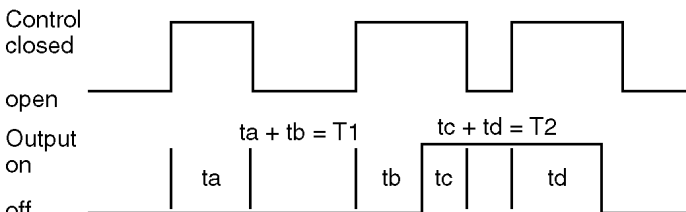
Type G - On Delay, Time Totalizing



Adjustable time delay on energizing

- Closing the control circuit starts the timing sequence
- Opening control circuit during timing stops the timing sequence but does not reset the time accumulated
- Upon time-out, the output will remain latched until reset.

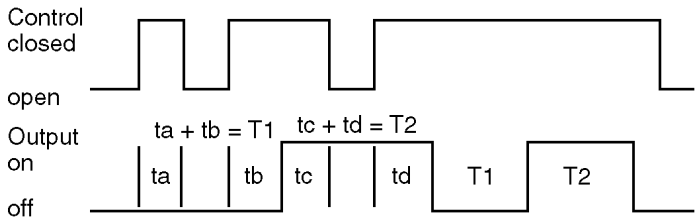
Type Total A - Maintained On Delay/Off Delay One Cycle, Time Totalizing



Programmable dual time delay

- Closing control circuit starts timing sequence
- Opening the control circuit during either timing period stops the timing sequence but does not reset the time accumulated
- Reset is achieved via external reset control

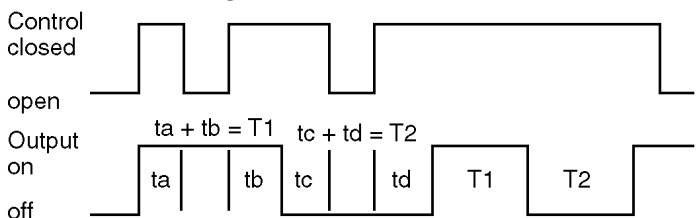
Type Total B - Repeat Cycle, Start Off Time Totalizing



Programmable dual time repeat cycle

- Closing control circuit starts timing sequence
- Opening the control circuit during either timing period stops the timing sequence but does not reset the time accumulated
- Reset is achieved via external reset control

Type Total C - Repeat Cycle, Start On Time Totalizing



Programmable dual time repeat cycle

- Closing control circuit starts timing sequence
- Opening the control circuit during either timing period stops the timing sequence but does not reset the time accumulated
- Reset is achieved via external reset control

SELECTOR GUIDES



KANSON ELECTRONICS, INC.

TIMERS

Timing Function	Time Range Capability	Mounting				Input	Output	Model
		Base	Plug-in	Block	Panel			
Type 1 On Delay	0.06-500 secs	X				AC	R/SS(1)	1010
		X				AC	R	1013
		X				AC	R(3)	1014
	0.025-10 secs					AC	R	1017
	0.02-300 secs	X				AC/DC	R	1017 SP7
	0.02-500 secs		X			AC/DC	R	1019
	0.025-2000 secs(2)		X			AC/DC	R	1071
	0.1-10230 sec			X		AC/DC	SS	2110
	0.02-100 hrs(2)		X		X	AC/DC	R	1073
	0.1 sec-1000 min			X		AC	SS	2112
	1 min-6300 days			X		AC	SS	2210
Type 2 Off Delay	0.06-500 secs	X				AC	R/SS(1)	1010
		X				AC	R	1013
		X				AC	R(3)	1014
	0.06-1000 secs		X			AC/DC	R	1018
	0.02-500 secs		X		X	AC/DC	R	1081
Type 3 Programmable	0.1 sec-500 hrs		X		X	AC/DC	R	1073
	0.02 sec-100 hrs		X		X	AC/DC	R	1090
	0.01 sec-9,999 hrs		X		X	AC/DC	R/SS	1095
	0.02 sec-9,999 hrs		X		X	AC/DC	R/SS	1096
	Counter		X		X	AC/DC	R/SS	1105C
Type 4 Pulsed Interval	0.06-500 secs	X				AC	R/SS(1)	1010
		X				AC	R	1013
	0.06-1000 secs		X			AC/DC	R	1018
Type 5 Maintained Interval	0.06-500 secs	X				AC	R/SS(1)	1010
		X				AC	R	1013
	0.06-1000 secs		X			AC/DC	R	1018
	0.1-10230 secs			X		AC	SS	2115
Types 6 & 7 Pulsed/Maintained Off/On One Cycle	0.06-500 secs	X				AC	R/SS(1)	1030
Type 8 On Delay/Off Delay	0.06-500 secs	X				AC/DC	R/SS(1)	1030
Type 9 Repeat Cycle	0.06-500 secs	X				AC	R/SS(1)	1060
	0.06-500 secs	X				AC/DC	SS	1061
	0.02 sec - 100 hr(2)		X		X	AC/DC	R	1068

Notes:

- (1) R=relay SS=solid state R/SS=relay standard, solid state optional.
- (2) Programmable time ranges.
- (3) Timed and instant contacts.



KANSON ELECTRONICS, Inc.

SELECTOR GUIDES

MOTION DETECTORS

Sensor Application	Adjustment Range	Operating Speed	Mechanical Input	Prox Input	Model
Zero Speed	0.06-100 secs	1,080 ppm	X		1214
	5-5000 ppm(1)	12,000 ppm	Self contained		1248A
	0.06-500 secs	2,400 ppm	X	X	1260
	0.02-1000 secs	108,000 ppm	X	X	1262
Underspeed	5-5000 ppm	12,000 ppm	Self contained		1248A
	0.02-1000 secs	108,000 ppm	X	X	1262
	0.06-100 secs	1080 ppm	X	X	1217
Overspeed	5-5000 ppm	12,000 ppm	Self contained		1248A
	0.02-1000 secs	108,000 ppm	X	X	1262

Notes:

(1) ppm = pulses per minute

PLC WATCHDOG TIMERS

Adjustment Range	Power Supply	Output	Model
0.06-500 secs	120 VAC	Relay	1260
0.06-100 secs	24 VAC/DC	Relay	1217C
0.06-100 secs	120 VAC	Relay	1217C
0.02-1000 secs	120 VAC	Relay	1262

RESISTANCE/VOLTAGE DETECTORS

Special Features	Base Mount	Plug-in	Input	Output	Model
Voltage detection	X		AC	R	1213
Compact size		X	AC	SS	1230
Time delays	X		AC/DC	R	1232
High/low detection	X		AC/DC	R	1234
Liquid level detection	X		AC	SS	LLD-100

PROXIMITY SWITCHES

Type	Style	Supply	Output	Model
Inductive	Limit switch	10-40 VDC	100 mA	1217P
Inductive	Limit switch	10-26 VDC	100 mA	1221
Inductive	Limit switch	20-250 VAC/DC	500 mA	1248A(1)
Inductive	Limit switch	20-250 VAC/DC	500 mA	1250
Magnetic	Cylindrical	9-26 VDC	100 mA	TMS-D

Notes:

(1) with built in motion detector timer circuitry

CSA (Canadian Standards Association) The agency for testing and approving products sold in Canada.

INSTANT CONTACTS Relay contacts which energize or de-energize in conjunction with the input power switch or control device. These contacts operate independently of the timed contacts and can be used to control a separate function.

MAINTAINED INTERVAL A delay which energizes an output for a preset period of time. The control switch or input power must be maintained during the timing interval to complete the delay. This timing function is also known as interval delay, or interval ON.

MOTION DETECTOR A device to detect zero, underspeed or overspeed conditions of pumps, conveyors, blower fans and other similar equipment which requires proper machine speed.

MOV (metal oxide varistor) A component which provides transient protection.

OFF DELAY A delayed de-energization of an output. The delay begins when the control switch is opened. This timing function is also known as delay on break, delay on release, delay on de-energization or slow release.

ON DELAY A delayed energization of an output. The delay begins when the control switch is closed or power applied to the input. This timing function is also known as a time delay, delay on make, delay on operate, delay on energization, or slow operate.

ON DELAY/OFF DELAY This timing function is a combination of on delay and off delay.

POWER ACTUATION The control of a timing function through the application or removal of input power.

PULSED INTERVAL A delay which energizes an output for a preset period of time. The control switch must close only momentarily to initiate this delay. This timing function is also known as a single shot, one shot, pulse stretcher, or latching interval.

RANGE TOLERANCE Factory calibration of time range at room temperature and nominal input voltage.

REPEAT ACCURACY The maximum deviation in the time setting of a timer when operated under constant conditions (constant ON/OFF times, input voltage and temperature). The average of five consecutive operations, starting with the second operation, will serve as the reference for determining the maximum deviation.

REPEAT CYCLE A timing function in which the output is turned ON and OFF repeatedly as long as the control switch is closed or power remains applied to the input. This timing function is also known as a recycle timer or flasher.

RESET TIME The minimum period of time the timer requires to prepare for a new cycle.

TIMING VARIATION VS TEMPERATURE The timing change relative to a reference time delay at any temperature within specified limits. The reference time delay is based on five consecutive operations starting with the second operation and is measured at approximately 23°C, with constant ON/OFF times and input voltage.

TOLERANCE The variation in a quantity from specified values or times.

TRANSIENT PROTECTION Internal protection which prevents damage to the circuit from sudden changes in voltage.

UL (Underwriter's Laboratories, Inc.) The agency for testing and approving products sold in the United States.

An external timing potentiometer (pot) wired to remote adjust terminals can be used to adjust the time setting from a remote location; to extend the time range of the unit; or to act as a vernier control. Determining the resistance value of the unit's internal pot is necessary for selecting the proper external pot. Calculate resistance value as follows:

- 1) Determine time range of unit.
example : 0.06 - 5 secs
- 2) Determine from specifications the timing ramp (Ω/sec ratio) for that time range. The timing ramp is specified with the minimum time of the time range.
example : 0.06 -100k Ω /sec
- 3) Multiply timing ramp by maximum time of time range.
example : 100k Ω /sec x 5 sec = 500k Ω
- 4) The product is the resistance value of the unit's internal pot.

Remote adjustment is useful in applications requiring frequent time setting changes due to machine variations or changes in machine function. The external pot can be run from the control cabinet to the work station where time variations occur. Install external pot for remote adjustment as follows:

- 1) Wire a remote pot of the same resistance value as the unit's internal pot to the remote adjust terminals (remove jumper between terminals).
- 2) Set unit's internal pot at minimum setting. The remote pot will then provide the same time range as the unit.

The time range of a unit can be extended if an application occasionally requires a slightly longer time than the unit is capable of providing. This capability should be used for minimal time range extensions only. Install external pot for extending time range as follows:

- 1) Wire a remote pot of the same resistance value as the unit's internal pot to the remote adjust terminals.
- 2) The internal and external pots are wired in series, so their resistance value is additive and provides an extended time range. Add time ranges of both pots to determine new time range.
example : Time range of pots is 0.06 - 5 secs.
Set internal pot at 2 secs
Set external pot at 5 secs
Total 7 secs
Extended time range is 2 - 7 seconds.

Using an external pot as a vernier control provides fine adjustment of the time setting. Use in applications which require precise adjustment of slight changes in time setting. Install external pot for vernier control as follows:

- 1) Determine time range of unit.
example : 0.06 - 5 secs
- 2) Determine range of variation in time setting.
example : If time setting will vary between 3 and 4 seconds, range of variation in time setting is 1 second: therefore, an external pot is used to make time adjustments within a 1 second time period.
- 3) Determine timing ramp for unit (see specifications)
example : 100k Ω /sec
- 4) Multiply timing ramp by range of variation in time setting.
example : 100k Ω /sec x 1 sec = 100k Ω /sec
- 5) The product is the resistance value of the external pot which will provide vernier control for a 1 second time period.
- 6) Set unit's internal pot for 3 seconds.
- 7) Use external pot for adjusting time between 3 and 4 seconds.

NOTES

MODEL 1005 INDUSTRIAL SOLID STATE BASE MOUNT TIMER



KANSON ELECTRONICS, INC.



**Panel Mount
General Purpose Relay**

ORDERING DATA

ORDERING CODE 1005 — 1 — A — 1

BASIC MODEL NUMBER 1005

INPUT VOLTAGE

- 1 24 V AC / DC
- 2 48 V AC / DC
- 3 120 V AC / DC
- 4 250 V AC / DC

OUTPUT

- A DPDT
- B 3PDT
- C 4PDT

FUNCTION

- 1 General purpose relay

SPECIFICATIONS

INPUT

VOLTAGE: 24, 48, 120, or 250 V AC/DC
FREQUENCY: 50/60 Hz
TOLERANCE (VOLTAGE): +15% or -45% of rated
POWER CONSUMPTION: 10VA maximum

OUTPUT

TYPE: Electromechanical relay
RATING: 10A—250VAC maximum
 10A—125VDC maximum
SWITCHING TIME: 25ms operate time
 25ms release time

OPERATING TEMPERATURE: -40° to 70°C
 (-40° to 158°F)

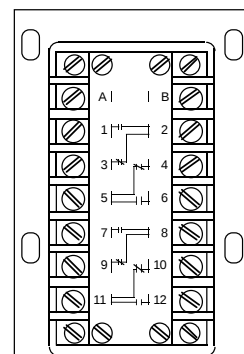
PHYSICAL

MOUNTING: Base mount
TERMINATION: Terminal blocks on face of unit
HOUSING: Metal
HI-POT: 1500V terminals to case
 1200V between open contacts
CONTACT MATERIAL: AgCdO
SERVICE LIFE: 100,000 switches minimum

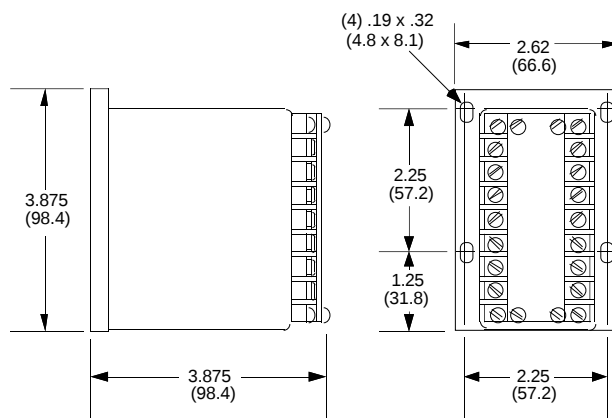
WIRING

OUTPUT C

A-B Voltage input (constant)
 1-2 Normally Open.
 2-3 Normally Closed.
 5-4 Normally Closed.
 5-6 Normally Open.
 7-8 Normally Open.
 9-8 Normally Closed.
 11-10 Normally Closed.
 11-12 Normally Open.



DIMENSIONS Inches (millimeters)



SPECIFICATIONS

INPUT

VOLTAGE: 120VAC, 230VAC
FREQUENCY: 50/60 Hz
TOLERANCE (VOLTAGE): $\pm 15\%$ of nominal
POWER CONSUMPTION: 10 VA maximum
TRANSIENT PROTECTION: Isolation transformer

OUTPUT

TYPE: Electromechanical relay
(solid state available as accessory)
RATING: 10A @ 240VAC maximum

TIMING

AVAILABLE TYPES: On delay, Off delay,
Pulsed interval, Maintained interval
REPEAT ACCURACY: $\pm 1\%$ of setting
RESET TIME: 50 msec minimum
INDICATION: Optional LED - ON when timing
(off delay - LED ON when output energized)
TIMING RAMP: 0.06 sec minimum time - 100k Ω /sec
0.5 sec minimum time - 10k Ω /sec
TIME RANGE: 0.06 to 500 secs in 12 ranges
RANGE TOLERANCE: $\leq 10\%$ at max., $\leq 0\%$ at min.
CONTROL: Isolated contact closure
CONTROL TERMINALS: E-F
VOLTAGE PRESENT AT CONTROL TERMINALS:
24VDC min., 40VDC max.

PHYSICAL

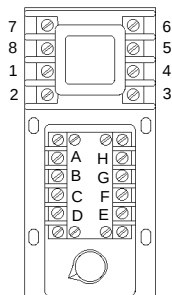
OPERATING TEMP: 0° to 50° C (32° to 120°F)
TIMING VARIATION VS. TEMP: $\pm 5\%$ maximum
MOUNTING: Base mount
TERMINATION: Terminal blocks on face of timer
HOUSING: Metal

WIRING

OUTPUT B

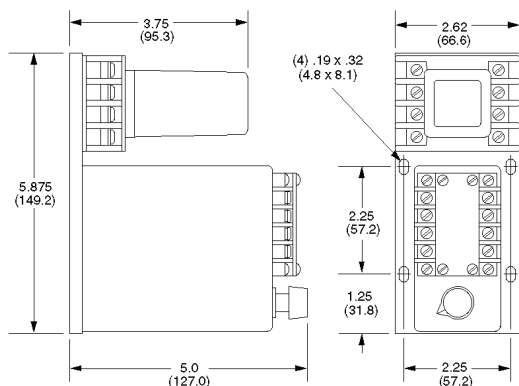
A-B Voltage input (constant)
C-D Remote adjust (jumper if not used)
E-F Control (starts timing function)
G-H Not used
1-3 N.O. timed
1-4 N.C. timed
5-8 N.C. timed
6-8 N.O. timed

Wiring Terminal Location



Caution: Never apply voltage
to terminals C-D-E-F

DIMENSIONS Inches (millimeters)



**Pulsed Interval
Maintained Interval**

**On Delay
Off Delay**

Plug-in DPDT relay output can be quickly replaced or
interchanged with optional solid state output. The 1010
is especially useful in applications which require fast
timing cycle rate and numerous operations in a short
period of time.

ORDERING DATA

ORDERING CODE 1010 - 1 - F - 2 - B OP6

BASIC MODEL NUMBER

1010

INPUT VOLTAGE

1 120VAC
2 230VAC

TIME RANGE (Secs)

A 0.06-0.10 F 0.06-5.0 L 0.5-250
B 0.06-0.25 G 0.06-10.0 M 0.5-500
C 0.06-0.50 H 0.06-25.0 W Fixed time
D 0.06-1.0 J 0.5-50.0 (see note)
E 0.06-2.5 K 0.5-100

NOTE: Specify W and desired fixed time.
Factory will set time within 5%

TIMING FUNCTION

1 On delay 4 Pulsed interval
2 Off delay 5 Maintained interval

OUTPUT

B Relay DPDT
(solid state outputs available as accessories)

OPTION (If desired)

OP6 Timing indication light.

APPLICABLE ACCESSORIES

See accessory section for details

Output modules RP-101,RP-103 thru RP-106
Potentiometers RP-201 thru RP-210
Reference dial RP-216
Locking attachment RP-217

MODEL 1013
BASE MOUNT

INDUSTRIAL SOLID STATE
TIMER

(ISSC)
KANSON ELECTRONICS, INC.

Models 1013UL
and 1013CSA



On Delay
Off Delay
Pulsed Interval
Maintained Interval

Model 1013

All-Purpose Design is economical and useful in a variety of industrial applications.

 UL File No. E50957

 CSA File No. LR92815

ORDERING DATA

ORDERING CODE 1013 - 1 - G - 1 - B

BASIC MODEL NUMBER

1013
1013UL
1013CSA

INPUT VOLTAGE

1 120VAC

TIME RANGE (Secs)

A 0.06-0.10	F 0.06-5.0	L 0.5-250
B 0.06-0.25	G 0.06-10.0	M 0.5-500
C 0.06-0.50	H 0.06-25.0	W Fixed time
D 0.06-1.0	J 0.5-50.0	(see note)
E 0.06-2.5	K 0.5-100	

NOTE: Specify W and desired fixed time.
Factory will set time within 5%

TIMING FUNCTION

1 On delay	4 Pulsed interval
2 Off delay	*5 Maintained interval

*Not available on UL or CSA units

OUTPUT

B Relay 1 N.O. 1 N.C.
B1Relay 2 N.O.
B2Relay 2 N.C

OPTION (1013UL/CSA only, now included on 1013 units)
OP6 Timing indication light.

APPLICABLE ACCESSORIES

See accessory section for details

Potentiometers	RP-201 thru RP-210
Reference dial	RP-216

SPECIFICATIONS

INPUT

VOLTAGE: 120VAC
FREQUENCY: 50/60 Hz
TOLERANCE (VOLTAGE): ± 15% of nominal
POWER CONSUMPTION: 10 VA maximum
TRANSIENT PROTECTION: Isolation transformer

OUTPUT

TYPE: Electromechanical relay
RATING: 10A @ 240VAC maximum

TIMING

AVAILABLE TYPES: On delay, Off delay, Pulsed interval, Maintained interval
REPEAT ACCURACY: ± 1% of setting
RESET TIME: 50 msec minimum
INDICATION: 1013 - LED, ON when timing
1013UL/1013CSA - Optional incandescent light, ON when timing (off delay - light ON when output energized)
TIMING RAMP: 0.06 sec minimum time - 100kΩ/sec
0.5 sec minimum time - 10kΩ/sec
TIME RANGE: 0.06 to 500 secs in 12 ranges
RANGE TOLERANCE: ≤ 10% at max., ≤ 0% at min.
CONTROL: Isolated contact closure
CONTROL TERMINALS: E-F
VOLTAGE PRESENT AT CONTROL TERMINALS:
24VDC minimum, 40VDC maximum

PHYSICAL

OPERATING TEMP: 0° to 50° C (32° to 120°F)
TIMING VARIATION VS. TEMP: ± 5% maximum
MOUNTING: Base mount
TERMINATION: Terminal block on face of timer
HOUSING: Metal

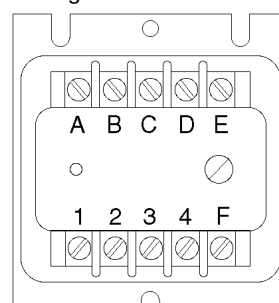
WIRING

OUTPUT B, B1, B2

A-B Voltage input (constant)
C-D Remote adjust
(jumper if not used)
E-F Control (starts timing function)
1-2 N.O. timed (except B2, N.C.)
3-4 N.C. timed (except B1, N.O.)

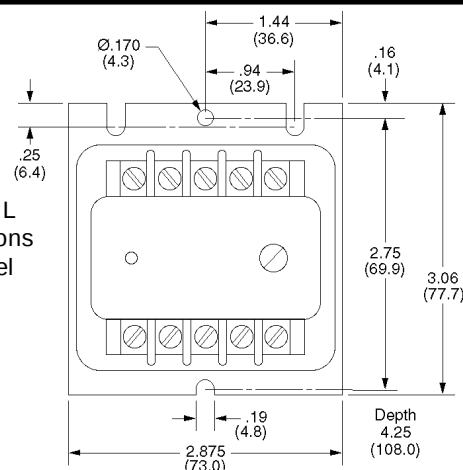
Caution: Never apply voltage to terminals C-D-E-F

Wiring Terminal Location



DIMENSIONS Inches (millimeters)

1013 and 1013UL
mounting dimensions
are identical, Model
1013 shown



SPECIFICATIONS

INPUT	VOLTAGE: 120VAC
	FREQUENCY: 50/60 Hz
OUTPUT	TOLERANCE (VOLTAGE): $\pm 15\%$ of nominal
	POWER CONSUMPTION: 10 VA maximum
TIMING	TRANSIENT PROTECTION: Isolation transformer
	TYPE: Two electromechanical relays
PHYSICAL	RATING: 10A @ 240VAC maximum
	AVAILABLE TYPES: On delay, Off delay
PHYSICAL	REPEAT ACCURACY: $\pm 1\%$ of setting
	RESET TIME: 50 msec minimum
PHYSICAL	INDICATION: LED, ON when timing
	TIMING RAMP: 0.06 sec minimum time - 100k Ω /sec 0.5 sec minimum time - 10k Ω /sec
PHYSICAL	TIME RANGE: 0.06 to 500 secs in 12 ranges
	RANGE TOLERANCE: $\leq 10\%$ at max., $\leq 0\%$ at min.
PHYSICAL	CONTROL: Isolated contact closure or AC proximity sensor
	CONTROL TERMINALS: A-C
PHYSICAL	VOLTAGE PRESENT AT CONTROL TERMINALS: Same as input voltage
	OPERATING TEMP: 0° to 50° C (32° to 120°F)
PHYSICAL	TIMING VARIATION VS. TEMP: $\pm 5\%$ maximum
	MOUNTING: Base mount
PHYSICAL	TERMINATION: Terminal blocks on face of timer
	HOUSING: Metal

WIRING

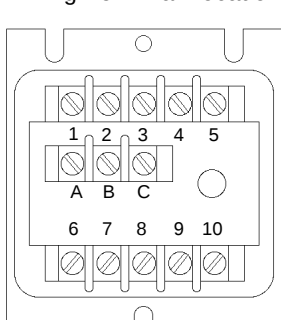
OUTPUT A

A-B Voltage input (constant)	3-4 N.O. instant
A-C Control (starts timing)	4-5 N.C. instant
1-2 Remote adjust (jumper if not used)	6-7 N.O. timed
	7-8 N.C. timed
	9-10 N.O. timed

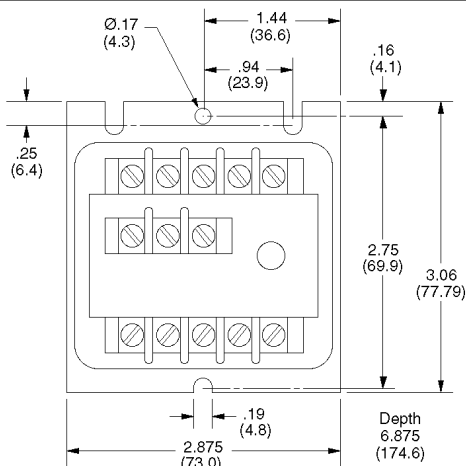
OUTPUT B

A-B Voltage input (constant)	2-3 N.C. instant
A-C Control (starts timing)	4-5 N.O. instant
1-2 N.O. instant	6-7 N.O. timed
	7-8 N.C. timed
	9-10 N.O. timed

Wiring Terminal Location



DIMENSIONS Inches (millimeters)



**On Delay
Off Delay**

Instant Contacts simplify the timing control circuit. A separate relay, which operates in conjunction with the input power switch or control device, can be used to operate a separate control function. Timing function controls timing relay.

AC Control Circuit is compatible with both standard mechanical switches and solid state proximity sensors.

UL File No. E50957

ORDERING DATA

ORDERING CODE 1014 - 1 - F - 2 - B

BASIC MODEL NUMBER

1014
1014UL

INPUT VOLTAGE

1 120VAC

TIME RANGE (Secs)

A 0.06-0.10	F 0.06-5.0	L 0.5-250
B 0.06-0.25	G 0.06-10.0	M 0.5-500
C 0.06-0.50	H 0.06-25.0	W Fixed time
D 0.06-1.0	J 0.5-50.0	(see note)
E 0.06-2.5	K 0.5-100	

NOTE: Specify W and desired fixed time.
Factory will set time within 5%

TIMING FUNCTION

- 1 On delay
- 2 Off delay

OUTPUT

- A Instant Relay 1 SPDT
- Timed Relay 1 SPDT, 1 N.O. { includes remote adjust connections
- B Instant Relay 1 SPDT, 1 N.O.
- Timed Relay 1 SPDT, 1 N.O.

OPTION (1014UL only, now included on 1014 units)
OP6 Timing indication light.

APPLICABLE ACCESSORIES

See accessory section for details

Potentiometers	RP-201 thru RP-210
Reference dial	RP-216
Locking attachment	RP-217

MODEL 1017
PLUG-IN

INDUSTRIAL SOLID STATE
TIMER

(ISSC)
KANSON ELECTRONICS, INC.



On Delay

Small, Plug-in Unit saves space and installation time. **Input Power Actuates** timing sequence, eliminating the need for a separate control circuit. Removing power automatically resets timing sequence.

 UL File No. E50957

 CSA File No. LR92815

ORDERING DATA

ORDERING CODE 1017 - 5 - 2 - 1 OP1

BASIC MODEL NUMBER

1017

TIME RANGE (Secs)

1 0.025-1.0
2.5 0.025-2.5
5 0.025-5
10 0.1 - 10

See Model 1071 for other time ranges, outputs, and input voltages.

OUTPUT

1 Relay DPDT (8 pin plug)
2 Relay SPDT w/remote adjust (8 pin plug)

INPUT VOLTAGE

1 120VAC/DC

OPTION (If desired)

OP1 Omit potentiometer from unit
(applies to output 2 only)
Timing indication light (previously OP10) is
now standard on model 1017

APPLICABLE ACCESSORIES

See accessory section for details

Potentiometers RP-204, RP-207 thru RP-210
Reference dial RP-216
Locking attachment RP-217
8 pin socket RP-302
Hold down clip RP-305

SPECIFICATIONS

INPUT

VOLTAGE: 120VAC/DC
FREQUENCY: 50/60 Hz or DC
TOLERANCE (VOLTAGE): $\pm 10\%$ of nominal
POWER CONSUMPTION: 5 VA maximum
TRANSIENT PROTECTION: MOV

OUTPUT

TYPE: Electromechanical relay
RATING: 5 A @ 240VAC maximum

TIMING

AVAILABLE TYPES: On delay
REPEAT ACCURACY: $\pm 1\%$ of setting or 8 msec, whichever is greater.
RESET TIME: 40 msec minimum
INDICATION: LED - ON when timing
TIMING RAMP: 0.025 sec minimum time - 1M Ω /sec
0.1 sec minimum time - 100k Ω /sec
TIME RANGE: 0.025 to 10 secs in 4 ranges
RANGE TOLERANCE: $\leq 30\%$ at maximum
 $\leq 0\%$ at minimum
CONTROL: Power applied to input initiates timing cycle
CONTROL TERMINALS: 2-7
VOLTAGE PRESENT AT CONTROL TERMINALS:
Same as input voltage

PHYSICAL

OPERATING TEMP: 0° to 50° C (32° to 120°F)
TIMING VARIATION VS. TEMP: $\pm 5\%$ maximum or
8 msec, whichever is greater
MOUNTING: Plug-in
TERMINATION: 8 pin socket
HOUSING: Plastic

WIRING

OUTPUT 1

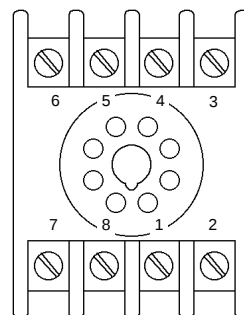
2-7 Voltage
input (control)
1-3 N.O. timed
1-4 N.C. timed
8-6 N.O. timed
8-5 N.C. timed

OUTPUT 2

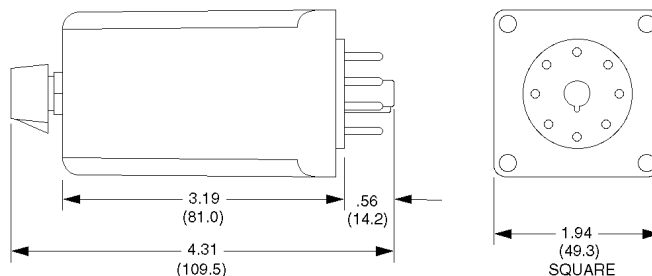
2-7 Voltage input
(control)
1-3 N.O. timed
1-4 N.C. timed
5-6 Remote adjust
(jumper if not used)
8 Not used

Caution: Never apply
voltage to 5-6

Wiring Terminal Location
8 Pin Socket



DIMENSIONS Inches (millimeters)



SPECIFICATIONS

INPUT

VOLTAGE: 24V AC/DC, 48V AC/DC, 120VAC/125VDC, 240VAC/250VDC

TOLERANCE (VOLTAGE): $\pm 15\%$ of nominal, $\pm 10\%$ for 24V

POWER CONSUMPTION: 16 W maximum

TRANSIENT PROTECTION: MOV

OUTPUT

TYPE: Electromechanical relay

RATING: 3A @ 150 VDC maximum

10A @ 240 VAC 80% PF maximum

TIMING

AVAILABLE TYPE: On delay

REPEAT ACCURACY: $\pm 1\%$ of setting

RESET TIME: 50 msec minimum

TIME RANGE: 1.5 to 120 cycles in 4 ranges or 0.5 to 300 sec in 4 ranges

RANGE TOLERANCE: $\leq 10\%$ at maximum, $\leq 0\%$ at minimum

PHYSICAL

OPERATING TEMP: -40° to 65° C (-40° to 150° F)

TIMING VARIATION VS. TEMP: $\pm 5\%$ maximum

MOUNTING: Base mount

TERMINATION: Terminal blocks on face of timer

HOUSING: Metal

HI-POT: 1500V terminals to case, 1200V between open contacts



On Delay

WIRING

OUTPUT A

A-B Voltage input

1-2 N.C. timed(1 positive)

3-4 N.O. timed(4 positive)

OUTPUT B

A-B Voltage input

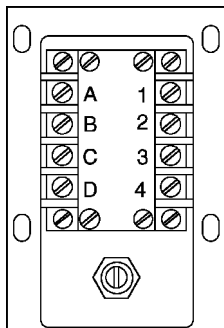
2-1 N.C. timed(2 positive)

2-3 N.O. timed(2 positive)

D-4 N.C. timed(D positive)

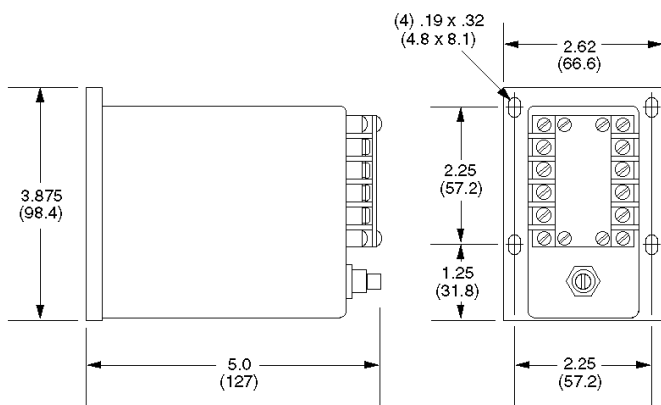
D-C N.O. timed(D positive)

Wiring Terminal Location



In DC applications indicated polarity provides optimum arc suppression

DIMENSIONS Inches (millimeters)



ORDERING DATA

ORDERING CODE

1017 SP7 - B - 4 - B

BASIC MODEL NUMBER

1017-SP7

INPUT VOLTAGE

D 24V AC/DC

A 48V AC/DC

B 120VAC/125VDC

C 240VAC/250VDC

TIME RANGE

1 1.5-30 Cycles*

7 0.5-30 Seconds

2 1.5-45 Cycles*

8 0.5-60 Seconds

3 1.5-60 Cycles*

9 0.5-120 Seconds

4 1.5-120 Cycles*

10 0.5-300 Seconds

(*Cycles at 60Hz)

TIMING FUNCTION

On delay

OUTPUT

A Relay 1 N.O 1 N.C.

B Relay DPDT

ACCESSORIES

See accessory section for details

Locking attachment RP-217



KANSON ELECTRONICS, INC.

INDUSTRIAL SOLID STATE TIMER

MODEL 1019
PLUG-IN

SPECIFICATIONS

INPUT	VOLTAGE: 120VAC/DC FREQUENCY: 50/60 Hz or DC TOLERANCE (VOLTAGE): $\pm 10\%$ of nominal POWER CONSUMPTION: 3 VA maximum TRANSIENT PROTECTION: MOV
OUTPUT	TYPE: Electromechanical relay RATING: 10 A @ 240VAC maximum
TIMING	TYPE: On delay REPEAT ACCURACY: $\pm 1\%$ of setting RESET TIME: 40 msec minimum TIMING RAMP: 0.02 sec min time - 1M Ω /sec 0.06 sec min time - 100k Ω /sec 0.5 sec min time - 10k Ω /sec TIME RANGE: 0.02 to 500 secs in 6 ranges RANGE TOLERANCE: $\leq 30\%$ at maximum $\leq 0\%$ at minimum CONTROL: Application of power initiates timing cycle CONTROL TERMINALS: A-B VOLTAGE PRESENT AT CONTROL TERMINALS: Same as input voltage
PHYSICAL	OPERATING TEMP: 0° to 50° C (32° to 120°F) TIMING VARIATION VS. TEMP: $\pm 5\%$ maximum MOUNTING: Plug-in TERMINATION: 11 pin blade socket HOUSING: Plastic



On Delay

Small, Economical plug-in unit saves space and installation time.

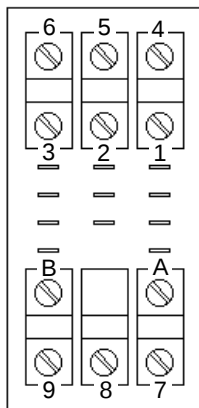
Input Power Actuates timing sequence, eliminating the need for a separate control circuit. Removing power automatically resets timing sequence.



WIRING

OUTPUT 1	OUTPUT 3	Wiring Terminal Location 11 Pin Blade Socket
A-B Voltage input 4-7 N.O. timed 1-7 N.C. timed 6-9 N.O. timed 3-9 N.C. timed 2-5-8 Not used	A-B Voltage input 4-7 N.O. timed 1-7 N.C. timed 6-9 N.O. timed 3-9 N.C. timed 2-5 Remote adjust (jumper if not used) 8 Not used	
OUTPUT 4 A-B Voltage input 1-7 N.C. timed 4-7 N.O. timed 3-9 N.C. timed	6-9 N.O. timed 2-8 N.C. timed 5-8 N.O. timed	

Caution: Never apply voltage to 2-5



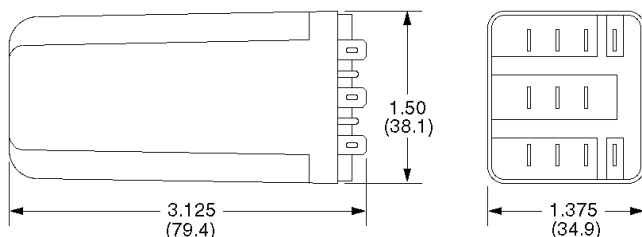
ORDERING DATA

ORDERING CODE	1019 - 10 - 1 - 2
BASIC MODEL NUMBER	1019
TIME RANGE (Secs)	1 0.02-1.0 50 0.06-50.0 5 0.02-5.0 100 0.5-100 10 0.06-10.0 500 0.5-500
OUTPUT	1 Relay DPDT 3 Relay DPDT w/remote adjust 4 Relay 3PDT
INPUT	2 120VAC/DC

APPLICABLE ACCESSORIES

See accessory section for details	
Potentiometers	RP-207, RP-209
Reference dial	RP-216
Locking attachment	RP-217
11 pin socket	RP-304
Hold down clip	RP-306

DIMENSIONS Inches (millimeters)



MODEL 1030
BASE MOUNT

INDUSTRIAL SOLID STATE
TIMER

(ISSC)
KANSON ELECTRONICS, INC.



Pulsed Off-On
One Cycle
Maintained Off-On
One Cycle

On Delay/Off Delay

Plug-in DPDT relay output can be quickly replaced or interchanged with optional solid state output. The 1030 is especially useful in applications which require fast timing cycle rate and numerous operations in a short period of time.

ORDERING DATA

ORDERING CODE 1030 — 1 — G — G — 6 — B

BASIC MODEL NUMBER

1030

INPUT VOLTAGE

- 1 120VAC
- 2 240VAC
- 3 24VAC

TIME RANGE (Secs)

- | | |
|------------|-----------|
| D 0.06-1.0 | J 0.5-50 |
| E 0.06-2.5 | K 0.5-100 |
| F 0.06-5.0 | L 0.5-250 |
| G 0.06-10 | M 0.5-500 |
| H 0.06-25 | |

† OFF time

† ON time

NOTE: † On and Off times must have same minimum time.

TIMING FUNCTION

- 6 Pulsed off/on
- 7 Maintained off/on
- 8 On delay/Off delay

OUTPUT

- B Relay DPDT
- (solid state outputs available as accessories)

OPTION

Timing indication light (previously OP6) is now standard on Model 1030

APPLICABLE ACCESSORIES

See accessory section for details

- | | |
|--------------------|--------------------|
| Output modules | RP-101, RP-103 |
| Potentiometers | RP-201 thru RP-210 |
| Reference dial | RP-216 |
| Locking attachment | RP-217 |

SPECIFICATIONS

INPUT

VOLTAGE: 120VAC, 24VAC, 240VAC
FREQUENCY: 50/60 Hz
TOLERANCE (VOLTAGE): ± 15% of nominal
POWER CONSUMPTION: 10 VA maximum
TRANSIENT PROTECTION: Isolation transformer
(120VAC and 240 VAC only)

OUTPUT

TYPE: Electromechanical relay
(solid state available as accessory)
RATING: 10A @ 240VAC maximum

TIMING

AVAILABLE TYPES: Pulsed off-on one cycle,
Maintained off-on one cycle, On delay/Off delay
REPEAT ACCURACY: ± 1% of setting
RESET TIME: 50 msec minimum
INDICATION: LED - ON when output energized
TIMING RAMP: 0.06 sec min time - 100kΩ/sec
0.5 sec min time - 10kΩ/sec
TIME RANGE: 0.06 to 500 secs in 9 ranges
RANGE TOLERANCE: ≤ 10% at max, ≤ 0% at min
CONTROL: Isolated contact closure
CONTROL TERMINALS: E-F
VOLTAGE PRESENT AT CONTROL TERMINALS:
24VDC minimum, 40VDC maximum

PHYSICAL

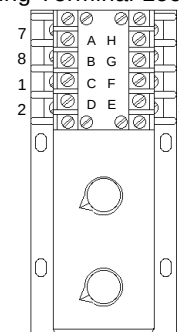
OPERATING TEMP: 0° to 50° C (32° to 120°F)
TIMING VARIATION VS. TEMP: ± 5% maximum
MOUNTING: Base mount
TERMINATION: Terminal blocks on face of timer
HOUSING: Metal

WIRING

OUTPUT B

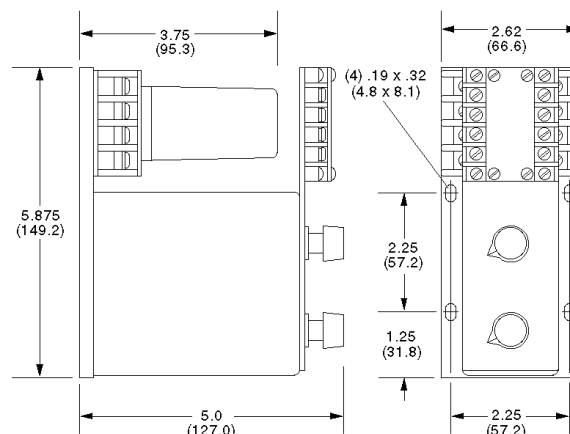
- A-B Voltage input (constant)
- C-D Remote adjust for OFF time,
(jumper if not used)
- E-F Control (starts timing function)
- G-H Remote adjust for ON time,
(jumper if not used)
- 1-3 N.O. timed
- 1-4 N.C. timed
- 5-8 N.C. timed
- 6-8 N.O. timed

Wiring Terminal Location



Caution: Never apply voltage to C-D-E-F-G-H

DIMENSIONS Inches (millimeters)





INDUSTRIAL SOLID STATE TIMER

MODEL 1060
BASE MOUNT

KANSON ELECTRONICS, INC.

SPECIFICATIONS

INPUT

VOLTAGE: 120VAC
FREQUENCY: 50/60 Hz
TOLERANCE (VOLTAGE): $\pm 15\%$ of nominal
POWER CONSUMPTION: 10 VA maximum
TRANSIENT PROTECTION: Isolation transformer

OUTPUT

TYPE: Electromechanical relay
(solid state available as an accessory)
RATING: 10A @ 240VAC maximum

TIMING

TYPE: Repeat cycle (start ON or start OFF)
REPEAT ACCURACY: $\pm 1\%$ of setting
RESET TIME: 50 msec minimum
INDICATION: Optional LED - ON when output energized
TIMING RAMP: 0.06 sec min time - 100k Ω /sec
0.5 sec min time - 10k Ω /sec
TIME RANGE: 0.06 to 500 secs in 9 ranges
RANGE TOLERANCE: $\leq 10\%$ at max, $\leq 0\%$ at min
CONTROL: Isolated contact closure
CONTROL TERMINALS: E-F
VOLTAGE PRESENT AT CONTROL TERMINALS:
24VDC minimum, 40VDC maximum

PHYSICAL

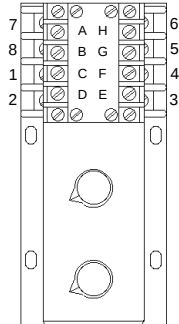
OPERATING TEMP: 0° to 50° C (32° to 120°F)
TIMING VARIATION VS. TEMPERATURE: $\pm 5\%$ max
MOUNTING: Base mount
TERMINATION: Terminal blocks on face of timer
HOUSING: Metal

WIRING

OUTPUT B

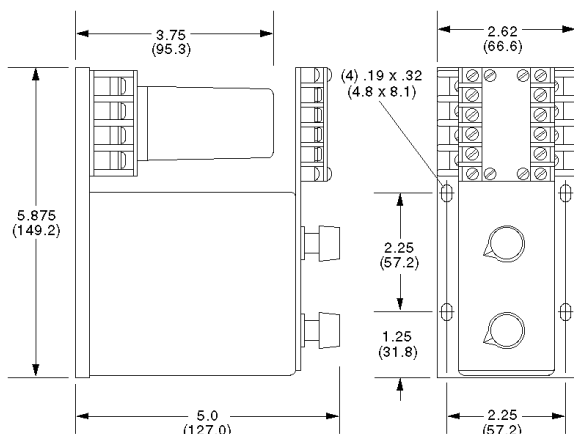
- A-B Voltage input (constant)
C-D Remote adjust for first time period (jumper if not used)
E-F Control (starts timing function)
G-H Remote adjust for second time period (jumper if not used)
1-3 N.O. timed
1-4 N.C. timed
5-8 N.C. timed
6-8 N.O. timed

Wiring Terminal Location



Caution: Never apply voltage to C-D-E-F-G-H

DIMENSIONS Inches (millimeters)



Repeat Cycle

Plug-in DPDT relay output can be quickly replaced or interchanged with optional solid state output. The 1060 is especially useful in applications which require a fast timing cycle rate and numerous operations in a short period of time.

ORDERING DATA

ORDERING CODE 1060 - 1 - F - F - 1 - B

BASIC MODEL NUMBER

1060

INPUT VOLTAGE

1 120VAC

TIME RANGE (Secs)

D 0.06-1.0 J 0.5-50
E 0.06-2.5 K 0.5-100
F 0.06-5.0 L 0.5-250
G 0.06-10 M 0.5-500
H 0.06-25

NOTE: $\uparrow$ On and Off times must have same minimum time.

TIMING FUNCTION

- 1 Repeat cycle start Off
2 Repeat cycle start On

OUTPUT

B Relay DPDT
(solid state outputs available as accessories)

OPTION

Timing indication light (previously OP6) is now standard on Model 1060

APPLICABLE ACCESSORIES

See accessory section for details

Output modules RP-101, RP-103
Potentiometers RP-201 thru RP-210
Reference dial RP-216
Locking attachment RP-217

MODEL 1061
BASE MOUNT

INDUSTRIAL SOLID STATE
TIMER

(ISSC)
KANSON ELECTRONICS, INC.



Repeat Cycle

Totally Solid State design eliminates moving parts and provides reliable, long-lasting performance.

Internal Wiring supplies input power directly to timed output terminals, eliminating the need for an external jumper.

 UL File No. E50957

ORDERING DATA

ORDERING CODE 1061 - 1 - E - E - 2 - C OP6

BASIC MODEL NUMBER

1061

INPUT VOLTAGE

1 120VAC

TIME RANGE (Secs)

D 0.06-1.0 J 0.5-50
E 0.06-2.5 K 0.5-100
F 0.06-5.0 L 0.5-250
G 0.06-10 M 0.5-500
H 0.06-25

NOTE: † On and Off times must have same minimum time.

TIMING FUNCTION

1 Repeat cycle start Off
2 Repeat cycle start On

OUTPUT

C Solid State (AC) 1 N.O. 35VA
C2A* Solid State (AC) 1 N.O. 5A (start off only)

OPTION (if desired)

OP3* Omit both potentiometers and add remote adjust terminals
OP6 Timing indication light
OP7 DC control for rapid recycle - 0.05 sec

**Not available on UL units*

APPLICABLE ACCESSORIES

See accessory section for details

Potentiometers RP-201 thru RP-210
Reference dial RP-216
Locking attachment RP-217

SPECIFICATIONS

INPUT

VOLTAGE: 120VAC
FREQUENCY: 50/60 Hz
TOLERANCE (VOLTAGE): ± 15% of nominal
POWER CONSUMPTION: 10 VA maximum
TRANSIENT PROTECTION: Isolation transformer

OUTPUT

TYPE: Solid state
RATING: C output 35VA continuous,
150VA in-rush @ 120VAC
C2A output 5A continuous,
12.5A in-rush @ 120VAC

TIMING

TYPE: Repeat cycle (start ON or start OFF)
INDICATION: Optional incandescent light - ON when output energized
TIMING RAMP: 0.06 sec min time - 100kΩ/sec
0.5 sec min time - 10kΩ/sec
TIME RANGE: 0.06 to 500 secs in 9 ranges
RANGE TOLERANCE: ≤ 10% at max, ≤ 0% at min
CONTROL: Isolated contact closure
CONTROL TERMINALS: E-F
VOLTAGE PRESENT AT CONTROL TERMINALS:
Same as input voltage
24VDC minimum, 40VDC maximum (OP7)

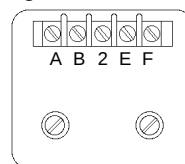
PHYSICAL

OPERATING TEMP: 0° to 50° C (32° to 120°F)
TIMING VARIATION VS. TEMP: ± 5% maximum
MOUNTING: Base mount
TERMINATION: Terminal block on face of timer
HOUSING: Metal

WIRING

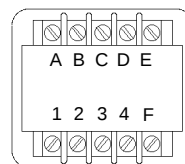
A-B Voltage input (constant)
E-F Control (starts timing function)
B-2 N.O. timed output

Wiring Terminal Location



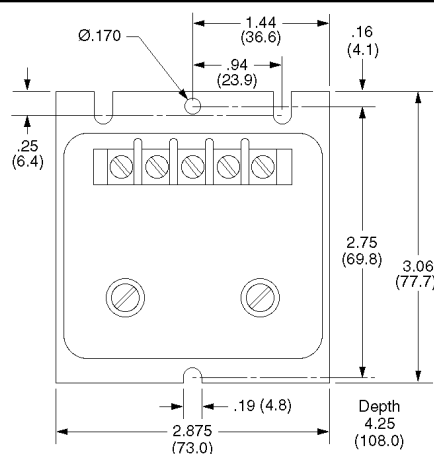
OPTION 3

A-B Voltage input (constant)
C-D Remote adjust for ON time,
(jumper if not used)
E-F Control (starts timing function)
3-4 Remote adjust for OFF time,
(jumper if not used)
B-2 N.O. timed



Caution: Never apply voltage to terminals E-F

DIMENSIONS



SPECIFICATIONS

INPUT	VOLTAGE: 120VAC/DC, 24VAC/DC FREQUENCY: 50/60 Hz or DC TOLERANCE (VOLTAGE): $\pm 15\%$ of nominal POWER CONSUMPTION: 4 VA maximum TRANSIENT PROTECTION: MOV
OUTPUT	TYPE: Electromechanical relay RATING: 5A @ 240VAC maximum
TIMING	TYPES: On delay REPEAT ACCURACY: $\pm 0.5\%$ of setting or 0.004 secs, whichever is greater. RESET TIME: 40 msec minimum INDICATION: LED - ON when timing TIMING RATIO: 10 to 1 potentiometer TIME RANGE: 8 per unit RANGE TOLERANCE: $\pm 10\%$ typical CONTROL: Power actuated or AC proximity sensor CONTROL TERMINALS: 2-7 (8 pin unit) 2-10 (11 pin unit) VOLTAGE PRESENT AT CONTROL TERMINALS: Same as input voltage
PHYSICAL	OPERATING TEMP: -20° to 70° C (-4° to 158° F) TIMING VARIATION VS. TEMP: $\pm 5\%$ maximum MOUNTING: Plug-in TERMINATION: 8 or 11 pin socket HOUSING: Plastic



On Delay

Multi-Range unit is programmable for 8 different time ranges. The 1071 reduces inventory requirements by offering the time range capacity of eight separate timers in one unit.

Input Power Actuates timing sequence, eliminating the need for a separate control circuit. Removing power automatically resets timing sequence.

Input Is Compatible with both standard mechanical switches and solid state proximity sensors.



UL File No. E50957



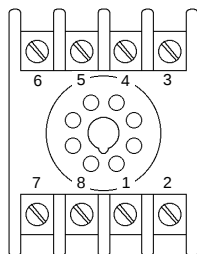
CSA File No. LR92815

WIRING

Wiring Terminal Location

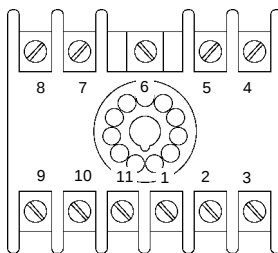
OUTPUT A

- 2-7 Voltage input (control)
- 1-3 N.O. timed
- 1-4 N.C. timed
- 5-6 Remote adjust
- 8 Not used



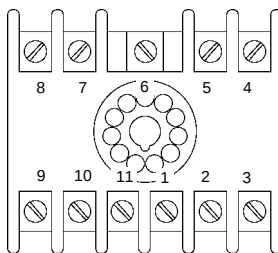
OUTPUT B

- 2-7 Voltage input (control)
- 1-3 N.O. timed
- 1-4 N.C. timed
- 8-6 N.O. timed
- 8-5 N.C. timed



OUTPUT C

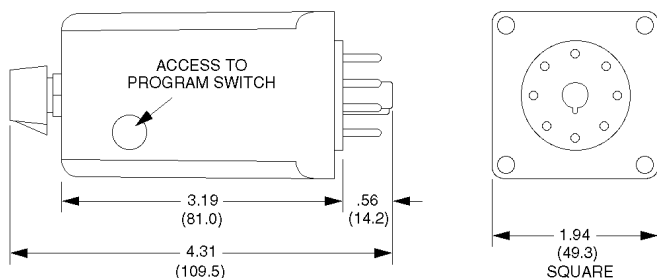
- 2-10 Voltage input (control)
- 11-8 N.C. timed
- 1-3 N.O. timed
- 5-6 Remote adjust
- 1-4 N.C. timed
- 7 Not used
- 11-9 N.O. timed



Caution: Never apply voltage to 5-6

DIMENSIONS Inches (millimeters)

OCTAL BASE SHOWN



ORDERING DATA

ORDERING CODE 1071 - 2 - P - 1 - A

BASIC MODEL NUMBER

1071

INPUT VOLTAGE

- 1 120VAC
- 2 24VAC/DC

TIME RANGE (Secs)

- P (includes the following time ranges)
- 0 200-2000 4 0.75-7.5 switch positions
- 1 50-500 5 0.2-2.0 8 and 9
- 2 12-120 6 0.06-5 not used
- 3 3-30 7 0.025-0.13

Consult factory for longer time ranges.

TIMING FUNCTION

- 1 On delay

OUTPUT

- A* Relay SPDT w/ remote adjust (8 pin plug)
- B Relay DPDT (8 pin plug)
- C* Relay SPDT w/remote adjust (11 pin plug)

*Units with remote adjust do not include a potentiometer in the timer. A separate 100kΩ potentiometer must be used with a maximum length of 12 feet of shielded twisted pair wire.

APPLICABLE ACCESSORIES

- See accessory section for details
- Potentiometer RP-204
- Reference dial RP-216
- Locking attachment RP-217
- 8 pin socket RP-302
- 11 pin socket RP-303
- Hold down clip RP-305

MODEL 2110 BLOCK

INDUSTRIAL SOLID STATE TIMER

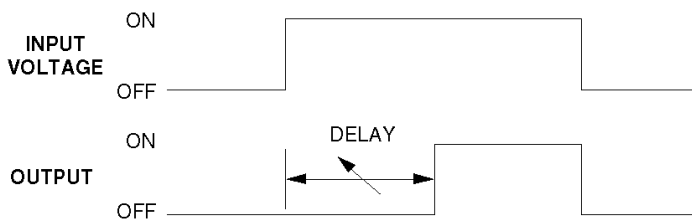
(ISSC)
KANSON ELECTRONICS, INC.



On Delay

The **2110** features simple two-wire installation. The compact encapsulated timer is switch programmable from 0.1 to 10230 seconds in three time ranges. Two power supply ranges cover operating voltages from 24 to 240 VAC/DC with a reliable 1 Amp solid state output.

OPERATION



ORDERING DATA

ORDERING CODE 2110 - 1 - B - 1 - C

BASIC MODEL NUMBER 2110

INPUT VOLTAGE

- 1 24 to 140VAC/DC
- 2 100 to 240VAC/DC

TIME RANGE in seconds

- A 0.1 to 102.3
- B 1.0 to 1023
- C 10 to 10230

TIMING FUNCTION

- 1 On delay

OUTPUT

- C Solid state N.O. 1 Amp max.

SPECIFICATIONS

INPUT

VOLTAGE: 24 to 140 VAC/DC or 100 to 240 VAC/DC
FREQUENCY: 50/60 Hz or DC
TOLERANCE (VOLTAGE): ±10% of nominal
POWER CONSUMPTION: 1VA maximum
TRANSIENT PROTECTED

OUTPUT

TYPE: Solid State N.O.
RATING: 1A @ 240VAC/DC max. (10A 1 cycle surge)
VOLTAGE DROP: 2.5 volts typical at 1A

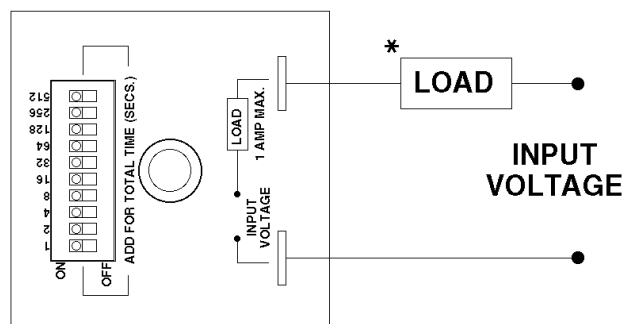
TIMING

TYPE: On delay
REPEAT ACCURACY: ≤ 0.5%
RESET TIME: ≤ 50 msec
TIME RANGE: 0.1 to 10230 seconds in 3 ranges
TOLERANCE: ± 5%
CONTROL: Power applied to input initiates timing cycle

PHYSICAL

OPERATING TEMP: -40° to +80°C (-40° to +175°F)
TIMING VARIATION VS. TEMP: ± 5% maximum
MOUNTING: Surface with #8 or #10 screw
TERMINATION: 0.250 inch male quick connect terminals
HOUSING: Plastic

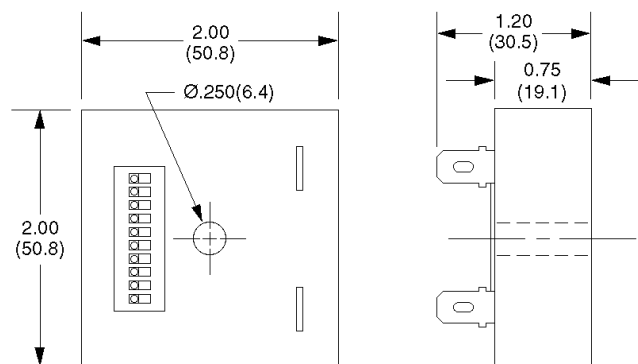
WIRING



*Load may be connected to either side of line.

WARNING: Connection of power without a series load will cause permanent damage.

DIMENSIONS Inches(millimeters)



SPECIFICATIONS

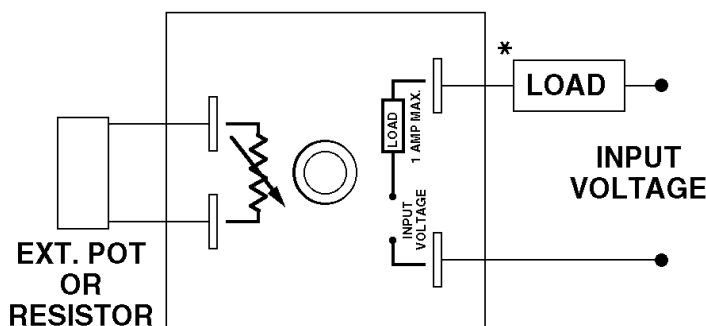
INPUT	VOLTAGE: 24 to 140 VAC/DC or 100 to 240 VAC/DC
	FREQUENCY: 50/60 Hz or DC
OUTPUT	TOLERANCE (VOLTAGE): $\pm 10\%$ of nominal
	POWER CONSUMPTION: 1VA maximum
TIMING	TRANSIENT PROTECTED
	TYPE: Solid State N.O.
PHYSICAL	RATING: 1A @ 240VAC/DC max. (8A 1 cycle surge)
	VOLTAGE DROP: 2.5 volts typical at 1A
TIMING	TYPE: On delay
	REPEAT ACCURACY: $\leq 0.5\%$
TIMING	RESET TIME: ≤ 50 msec
	TIME RANGE: 0.2 seconds to 1000 minutes in 6 ranges
PHYSICAL	EXTERNAL RESISTOR: 0 to 1.0 M Ω
	1.0M Ω = maximum delay
TIMING	TOLERANCE: $\pm 5\%$
	CONTROL: Power applied to input initiates timing cycle
PHYSICAL	OPERATING TEMP: -40° to $+80^{\circ}\text{C}$ (-40° to $+175^{\circ}\text{F}$)
	TIMING VARIATION VS. TEMP: $\pm 5\%$ maximum
PHYSICAL	MOUNTING: Surface with #8 or #10 screw
	TERMINATION: 0.250 inch male quick connect terminals
PHYSICAL	HOUSING: Plastic



On Delay

The 2112 features simple two-wire installation. The compact encapsulated timer is adjustable from 0.2 seconds to 1000 minutes in six ranges. Two power supply ranges cover operating voltages from 24 to 240 VAC/DC with a reliable, 1 Amp solid state output.

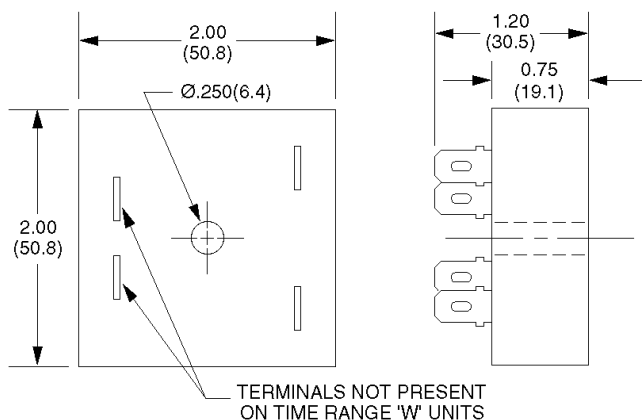
WIRING



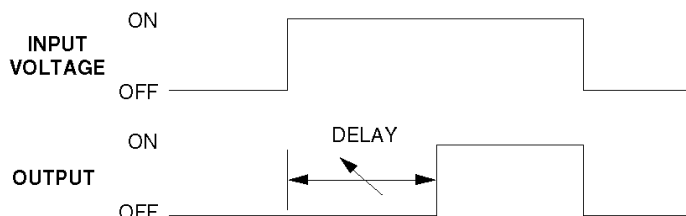
*Load may be connected to either side of line.

WARNING: Connection of power without a series load will cause permanent damage.

DIMENSIONS Inches(millimeters)



OPERATION



ORDERING DATA

ORDERING CODE	2112 - 1 - B - 1 - C
BASIC MODEL NUMBER	2112
INPUT VOLTAGE	1 24 to 140VAC/DC 2 100 to 240VAC/DC
TIME RANGE	A 0.2 to 10 sec. D 0.1 to 10 min. B 1.0 to 100 sec. E 1.0 to 100 min. C 10 to 1000 sec. F 10 to 1000 min W Fixed Time(specify W & desired fixed delay) Factory will set time within 5%, unit will not have external terminals for timing reststor.
TIMING FUNCTION	1 On delay
OUTPUT	C Solid state N.O. 1 Amp max.

MODEL 2115 BLOCK

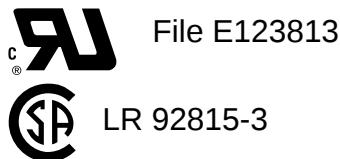
INDUSTRIAL SOLID STATE TIMER

(ISSC)
KANSON ELECTRONICS, INC.

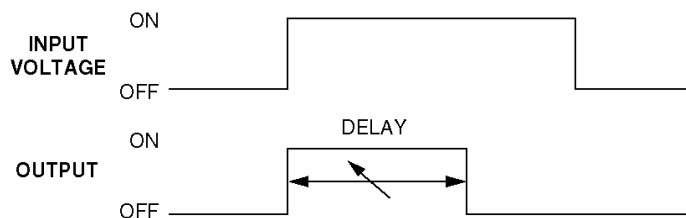


Interval

The **2115 features** a simple three-wire installation. The compact encapsulated timer is switch programmable from 0.1 to 10230 seconds in three time ranges. Two power supply ranges cover operating voltages from 24 to 240 VAC/DC with a reliable, 1 Amp solid state output.



OPERATION



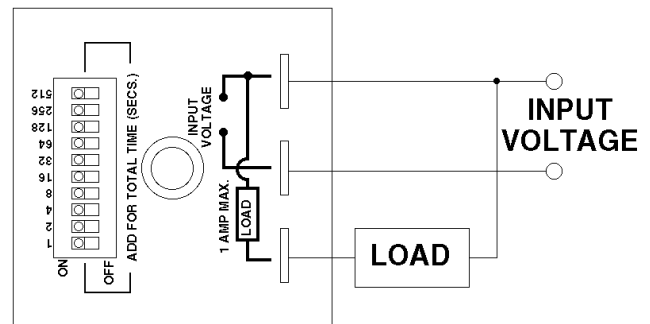
ORDERING DATA

ORDERING CODE	2115 - 2 - B - 5 - C
BASIC MODEL NUMBER	2115
INPUT VOLTAGE	1 120VAC 2 240VAC
TIME RANGE in seconds	A 0.1 to 102.3 B 1.0 to 1023 C 10 to 10230
TIMING FUNCTION	5 Interval
OUTPUT	C Solid state N.O. 1 Amp max.

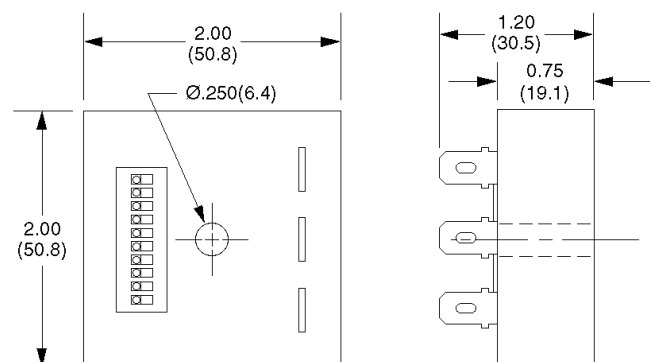
SPECIFICATIONS

INPUT	VOLTAGE: 120 VAC or 240 VAC FREQUENCY: 50/60 Hz TOLERANCE (VOLTAGE): $\pm 15\%$ of nominal POWER CONSUMPTION: 1VA maximum TRANSIENT PROTECTED
OUTPUT	TYPE: Solid State N.O. RATING: 1A @ 240VAC/DC max. (10A 1 cycle surge) VOLTAGE DROP: 2.5 volts typical at 1A
TIMING	TYPE: Interval REPEAT ACCURACY: $\leq 0.5\%$ RESET TIME: ≤ 150 msec TIME RANGE: 0.1 to 10230 seconds in 3 ranges TOLERANCE: $\pm 5\%$ CONTROL: Power applied to input initiates timing cycle
PHYSICAL	OPERATING TEMP: -40° to $+60^{\circ}\text{C}$ (-40° to $+140^{\circ}\text{F}$) TIMING VARIATION VS. TEMP: $\pm 5\%$ maximum MOUNTING: Surface with #8 or #10 screw TERMINATION: 0.250 inch male quick connect terminals HOUSING: Plastic

WIRING



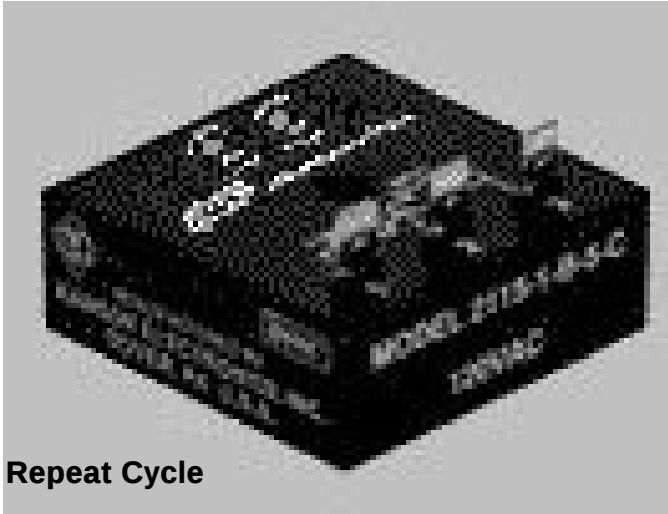
DIMENSIONS



MODEL 2120 BLOCK

INDUSTRIAL SOLID STATE TIMER

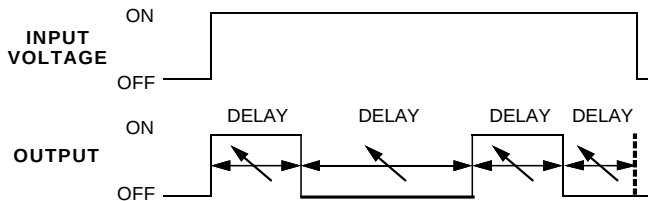
issc®
KANSON ELECTRONICS, INC.



Repeat Cycle

The **2120 features** a simple three-wire installation. The compact encapsulated timer has independently controllable "On Time" and "Off Time" adjustments. Power supply operating voltage is 120 VAC/DC with a reliable, 1 Amp solid state output.

OPERATION



ORDERING DATA

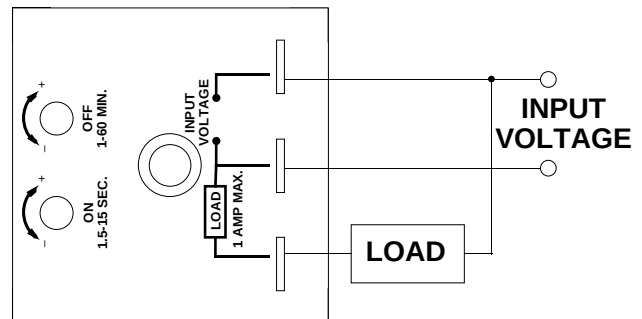
ORDERING CODE	2120 - 1 - A - F - 9 - C
BASIC MODEL NUMBER	2120
INPUT VOLTAGE	1 120VAC
TIME RANGE "ON" in seconds	A 1.5 to 15
	B
	C
	W Factory fixed*
TIME RANGE "OFF" in minutes	E
	F 1 to 60
	G
	W Factory fixed
TIMING FUNCTION	9 Repeat Cycle
OUTPUT	C Solid state N.O. 1 Amp max.

* Specify W and desired fixed time - Factory will set at +/- 5%

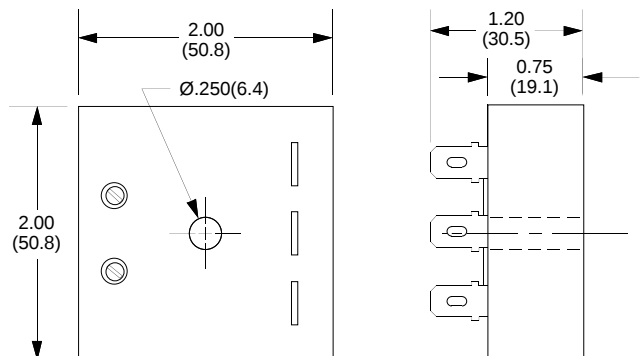
SPECIFICATIONS

INPUT	VOLTAGE: 120 VAC/DC
	FREQUENCY: 50/60 Hz
	TOLERANCE (VOLTAGE): ±15% of nominal
	POWER CONSUMPTION: 1VA maximum
OUTPUT	TRANSIENT PROTECTED
	TYPE: Solid State N.O.
	RATING: 1A @ 120VAC/DC max. (10A 1 cycle surge)
	VOLTAGE DROP: 2.5 volts typical at 1A
TIMING	TYPE: Repeat Cycle
	REPEAT ACCURACY: ≤ 0.5%
	RESET TIME: ≤ 150 msec
	TIME RANGE: ON: 1 min. max / OFF: 2 hr. max
	TOLERANCE: ±5%
PHYSICAL	CONTROL: Power applied to input initiates timing cycle
	OPERATING TEMP: -40° to +60°C (-40° to +140°F)
	TIMING VARIATION VS. TEMP: ± 5% maximum
	MOUNTING: Surface with #8 or #10 screw
	TERMINATION: 0.250 inch male quick connect terminals
	HOUSING: Plastic

WIRING



DIMENSIONS Inches(millimeters)





KANSON ELECTRONICS, INC.

INDUSTRIAL SOLID STATE TIMER

MODEL 2122
BLOCK

SPECIFICATIONS

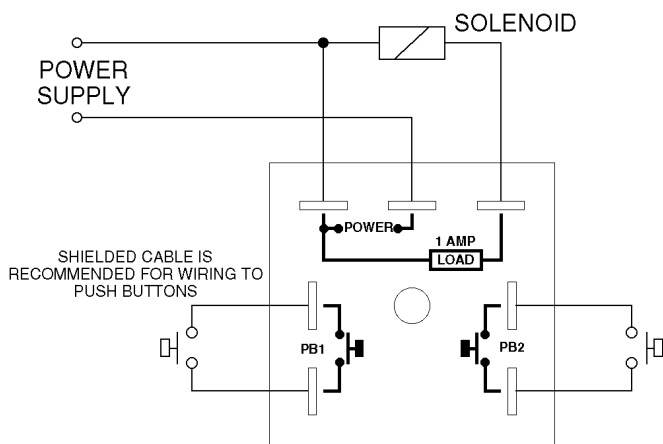
INPUT	VOLTAGE: 24, 120 or 240 VAC
	FREQUENCY: 50/60 Hz
	TOLERANCE (VOLTAGE): $\pm 10\%$ of nominal
	POWER CONSUMPTION: 1VA maximum
OUTPUT	TRANSIENT PROTECTED
	TYPE: Solid State N.O.
	RATING: 1.0A @ 240VAC max. (8A 1 cycle surge)
	VOLTAGE DROP: 2.5 volts typical at 1.0 A
TIMING	TYPE: Coincident input one shot
	REPEAT ACCURACY: $\leq 0.5\%$
	RESET TIME: ≤ 50 msec
	TIME RANGE: 50 msec to 1 second in 5 steps
	TOLERANCE: $\pm 15\%$
PHYSICAL	CONTROL: Simultaneous (within 50 msec) application of both control signals initiates timing cycle.
	OPERATING TEMP: -40° to $+80^{\circ}\text{C}$ (-40° to $+175^{\circ}\text{F}$)
	TIMING VARIATION VS. TEMP: $\pm 5\%$ maximum
	MOUNTING: Surface with #8 or #10 screw
	TERMINATION: 0.250 inch male quick connect terminals
	HOUSING: Plastic



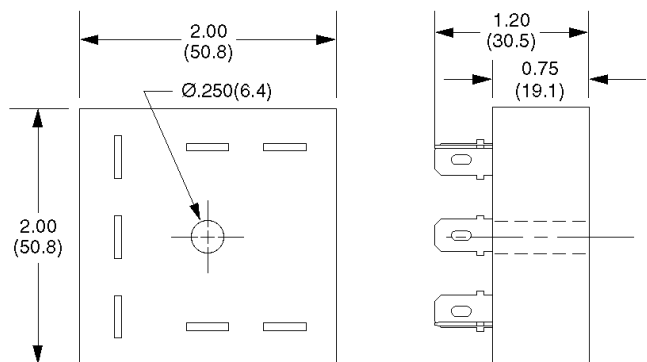
Dual Input One Shot

The 2122 is a compact encapsulated timer that requires inputs from two sources that must be applied within 50 msec to initiate timing sequence. If one input is held closed, closing the other input will not initiate timing cycle. The reliable, 1 Amp solid state output offers pulse widths from 50 msec to 1 second suitable for driving most valves or solenoids. Operating voltages of 24, 120 or 240 VAC.

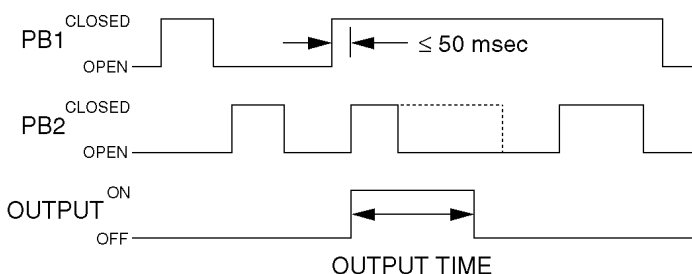
WIRING



DIMENSIONS Inches(millimeters)



OPERATION



ORDERING DATA

ORDERING CODE	2122 - 1 - B - 4 - C
BASIC MODEL NUMBER	2122
INPUT VOLTAGE	1 120 VAC 2 220 VAC 3 24 VAC
TIME RANGE	A 50 msec B 100 msec C 250 msec D 500 msec E 1 second
TIMING FUNCTION	4 Pulsed Interval (dual coincident input)
OUTPUT	C Solid state N.O. 1 Amp max.

**SERIES 2200
BLOCK**

**INDUSTRIAL SOLID STATE
TIMER**

(ISSC)
KANSON ELECTRONICS, INC.



This is the 2210 timer, one of the standard parts in the 2200 series.

**Semi-Custom
Application Specific Timer**

The 2200 Series offers quick turn-around on development of special function timers with minimal non-recurring charges making it economical for small runs. Power supply options include 24VAC, 120VAC, 240VAC or 10-30VDC with a reliable Solid state 1 Amp output. There are two power supply terminals, one input and one output. Other options include a 6 position dip switch, status LED, crystal controlled time base, non-volatile memory, analog input on DC supply versions and custom artwork and/or case markings.

OPERATION

Operating parameters specified by customer.

Examples:

- time totalizing, count retained when power removed
- asymmetrical waveform generation
- switch selectable multiple functions in a single package
- signal conditioning
- repeat cycle, pulse on removal of control

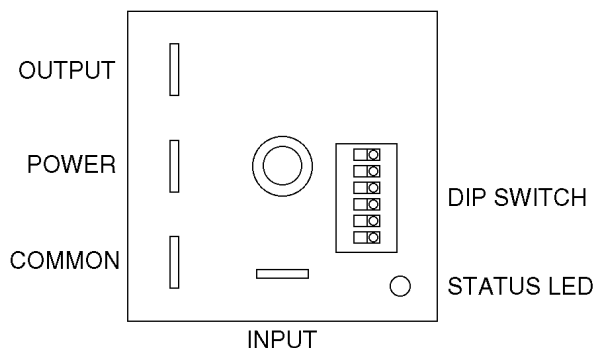
ORDERING DATA

Please contact factory with the specifications required for your application.

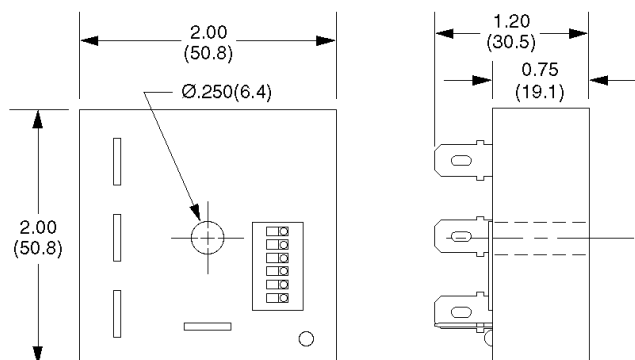
SPECIFICATIONS

INPUT	VOLTAGE: 24, 120, 240 VAC or 10-30 VDC
	FREQUENCY: 50/60 Hz, 400 Hz or DC
	TOLERANCE (VOLTAGE): ±15% of nominal
	POWER CONSUMPTION: 1.0VA max AC, 1.0W DC
TRANSIENT PROTECTED	
CONTROL	VOLTAGE: not to exceed power supply voltage
	REFERENCE: L1 or L2
	TYPE: digital or analog (analog on DC units only)
OUTPUT	TYPE: Solid State
	RATING: AC models - 1.0A at rated supply voltage 10A 1 cycle surge
	DC models - 1.0A sourcing or sinking
	VOLTAGE DROP: AC models - 2.5 volts typical at 1.0A DC models - <0.75V at 1.0A
TIMING	TYPE: Custom
	REPEAT ACCURACY: ≤ 0.1% (crystal controlled option)
	RESET TIME: ≤ 150 msec
	TOLERANCE: ±0.5%
PHYSICAL	OPERATING TEMP: -40° to +60°C (-40° to +140°F)
	TIMING VARIATION VS. TEMP: ±1% crystal controlled
	MOUNTING: Surface with #8 or #10 screw
	TERMINATION: 0.250 inch male quick connect terminals
HOUSING: Plastic	

FEATURES



DIMENSIONS Inches(millimeters)



SPECIFICATIONS

INPUT	VOLTAGE: 24VAC, 120 VAC or 240 VAC
	FREQUENCY: 50/60 Hz
	TOLERANCE (VOLTAGE): ±15% of nominal
	POWER CONSUMPTION: 2VA maximum
OUTPUT	TRANSIENT PROTECTED
	TYPE: Solid State N.O. Zero Voltage Crossing
	RATING: 1A @ 240VAC/DC max.
	VOLTAGE DROP: <1.6 volts at 1A
TIMING	TYPE: On Delay
	TIME RANGE: 1 minute to 10230 days in 3 ranges
	TOLERANCE: <250 msec per application of power
	CONTROL: Power applied to input initiates timing cycle
PHYSICAL	OPERATING TEMP: 0°C to +70°C (32° to 155°F)
	extended temperature range available - contact factory
	MOUNTING: Surface with #8 or #10 screw
	TERMINATION: 0.250 inch male quick connect terminals
PHYSICAL	HOUSING: Plastic

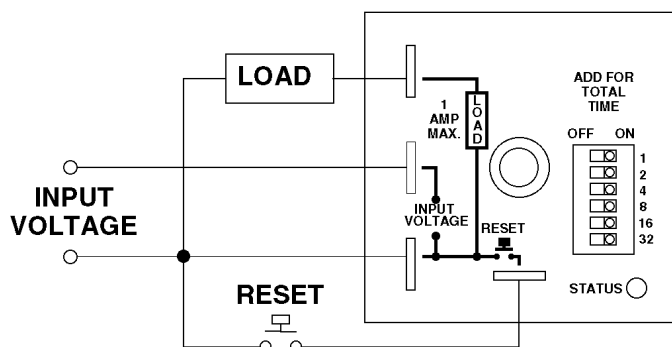


**On Delay
non-volatile memory**

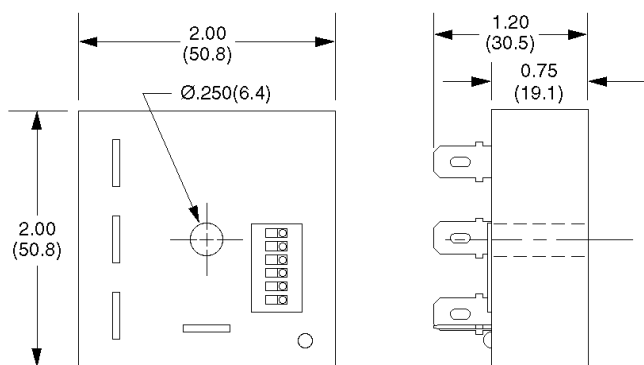
The **2210** is designed for use as a maintenance reminder or lockout, it starts timing upon application of input power and retains count during removal of power. Input power frequency is used for an accurate time base. A six position dip switch selects the desired time delay. Switch settings can only be changed when output is on. A status LED indicates unit is timing. The solid state 1 Amp output can handle a variety of loads.

The reset input is active only when output is "on". Output can be forced "on" by setting all dip switches to "off" and pressing reset.

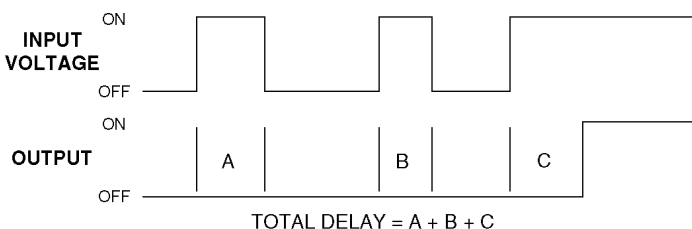
WIRING



DIMENSIONS Inches(millimeters)



OPERATION



ORDERING DATA

ORDERING CODE 2210 - 1 - A - 1 - C

BASIC MODEL NUMBER

2210

INPUT VOLTAGE

- | | |
|----------------|----------------|
| 1 120VAC 60 Hz | 4 120VAC 50 Hz |
| 2 240VAC 60 Hz | 5 240VAC 50 Hz |
| 3 24VAC 60 Hz | 6 24VAC 50 Hz |

TIME RANGE

- | MINUTES | HOURS | DAYS |
|--------------|--------------|--------------|
| A 1 - 63 | D 1 - 63 | G 1 - 63 |
| B 10 - 630 | E 10 - 630 | H 10 - 630 |
| C 100 - 6300 | F 100 - 6300 | J 100 - 6300 |

*custom ranges available - contact factory

TIMING FUNCTION

1 On Delay

OUTPUT

C Solid state N.O. 1 Amp max.

MODEL 1068 DIN PANEL MOUNT

INDUSTRIAL SOLID STATE TIMER

(ISSC)
KANSON ELECTRONICS, INC.



Repeat Cycle

The **1068** features repeat cycle operation in a compact, plug-in unit, ON and OFF times are independently adjustable in 16 programmable time ranges from 0.1 seconds to 500 hours. An auto-calibrating dial provides direct reading of time setting in every range. Operating voltage options are available from 12VDC to 240VAC. LED indicators for output on and output off complete the package. Now available with plug-in or screw terminal base.



ORDERING DATA

ORDERING CODE 1068 - 1 - P - 9 - B - 1 - 1

BASIC MODEL NUMBER

1068

INPUT VOLTAGE

- 1 120-240 VAC
- 3 24 VAC/DC
- 5 12 VDC

TIME RANGE

P (Includes the following ranges)

seconds	minutes	hours	10 hours
0.1 to 1.0	0.1 to 1.0	0.1 to 1.0	1.0 to 10
0.5 to 5.0	0.5 to 5.0	0.5 to 5.0	5.0 to 50
1.0 to 10	1.0 to 10	1.0 to 10	10 to 100
5.0 to 50	5.0 to 50	5.0 to 50	50 to 500

TIMING FUNCTION

- 9 Repeat Cycle

OUTPUT

- B Relay DPDT

TERMINATION

- 1 8 pin plug-in base
- 2 Screw terminals

DEGREE OF PROTECTION

- 1 IP50 Standard
- 2 IP65 Sealed unit(special order only)

APPLICABLE ACCESSORIES

See accessory section for details

8 pin socket	RP-320
8 pin reversible socket	RP-321
8 pin cable socket	RP-323
Panel mount clip	RP-325
Stop rings	RP-327

SPECIFICATIONS

VOLTAGE: 100-240 VAC, 24 VAC/DC, 12VDC

FREQUENCY: 50/60 Hz (AC models)

TOLERANCE (VOLTAGE): - 15% to + 10% of nominal

POWER CONSUMPTION: 10VA (100-240 VAC)

2.5VA (24 VAC)

2W (12 VDC & 24VDC)

TRANSIENT PROTECTION: MOV

TYPE: Electromechanical relay

MECHANICAL LIFE: 20,000,000 operations

ELECTRICAL LIFE: 100,000 operations minimum
(at full rated load)

RATING: 5A @ 240VAC (resistive)

TYPE: Repeat Cycle

REPEAT ACCURACY: $\pm 0.3\%$ of setting

TIMING RANGE: 0.1 secs to 500 hours in 16 ranges

RESET TIME: 300 msec minimum

OPERATING TEMP: -10° to 50° C (14° to 122°F)

TIMING VARIATION VS. TEMP: $\pm 2\%$ maximum

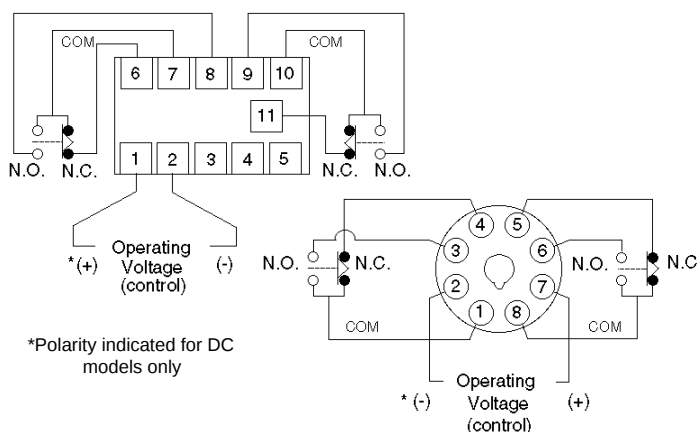
MOUNTING: Plug-In or Panel mount

TERMINATION: 8 pin socket or screw terminals

HOUSING: Polycarbonate

DEGREE OF PROTECTION: IP50(std), IP65(special)

WIRING



OPERATION

Repeat Cycle

Control
Closed

Open

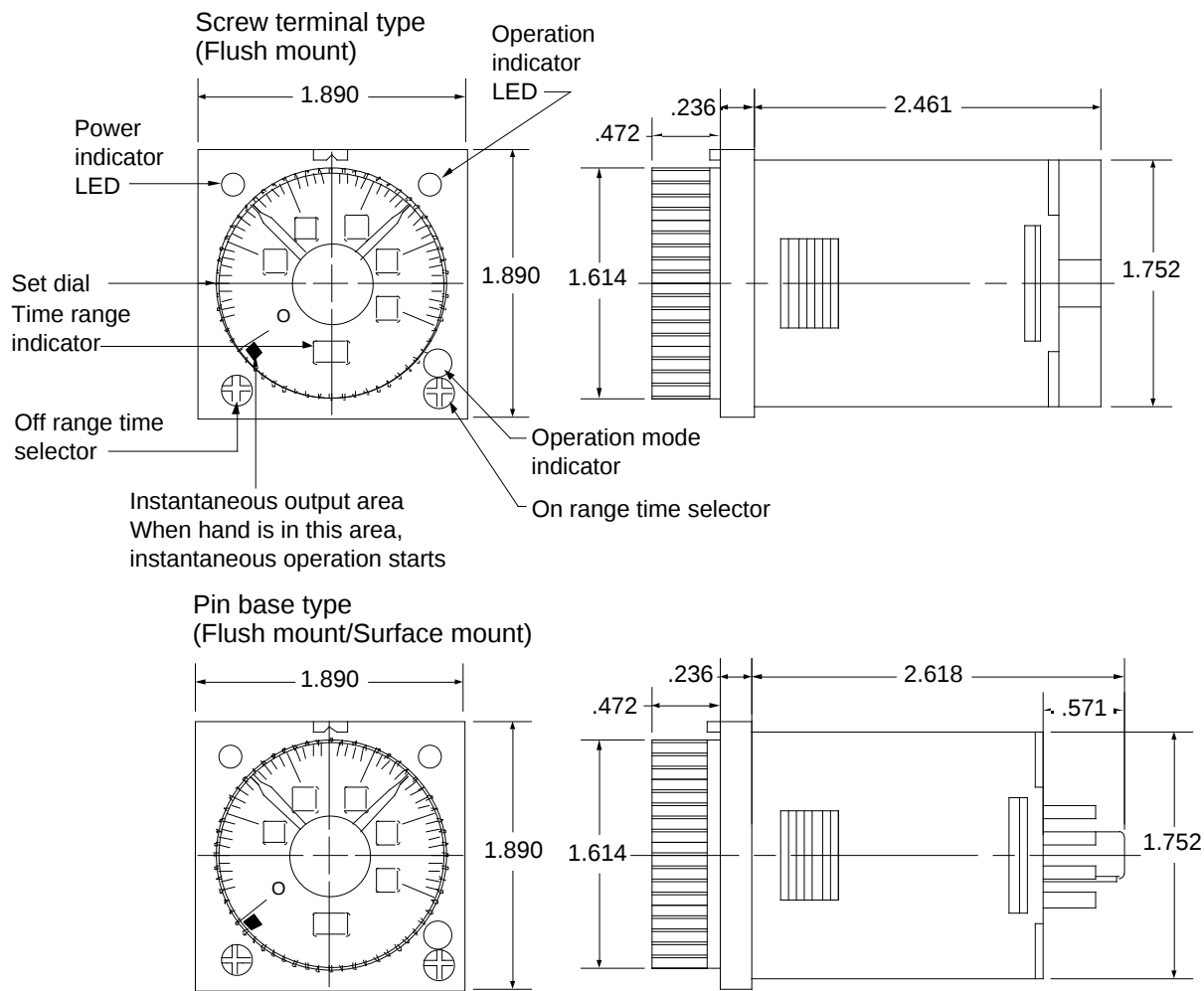
Output
On

Off

Adjustable repeat cycle

- Closing the control circuit starts the timing sequence
- Opening the control circuit during either timing period resets both time delays to zero and de-energizes the output
- Different ranges can be used for ON and OFF times

DIMENSIONS



MODEL 1073 DIN PANEL MOUNT

INDUSTRIAL SOLID STATE TIMER

(ISSC)
KANSON ELECTRONICS, INC.



**On Delay
Only
or
Multifunction**



The 1073 is available with a choice of on-delay only or 5 programmable functions. Auto-calibrating dial provides direct reading of time in each of 16 programmable time ranges from 0.1 seconds to 500 hours. The On-delay only version has a DPDT timed output while the programmable unit has an SPDT timed plus SPDT instantaneous contacts. Operating voltage options are available from 12VDC to 240VAC. LED indicators for Power and Operate complete the package. Now available with plug-in or screw terminal base.

ORDERING DATA

ORDERING CODE 1073 - 1 - P - 2 - A - 1 - 1

BASIC MODEL NUMBER

1073

INPUT VOLTAGE

- 1 120-240 VAC
- 3 24 VAC/DC
- 5 12 VDC

TIME RANGE

P (Includes the following ranges)

seconds	minutes	hours	10 hours
0.1 to 1.0	0.1 to 1.0	0.1 to 1.0	1.0 to 10
0.5 to 5.0	0.5 to 5.0	0.5 to 5.0	5.0 to 50
1.0 to 10	1.0 to 10	1.0 to 10	10 to 100
5.0 to 50	5.0 to 50	5.0 to 50	50 to 500

TIMING FUNCTION and OUTPUT

- 1 - B On delay with Relay DPDT
- 2 - A Programmable, 5 functions with 1 SPDT Instant relay and 1 SPDT Timed relay. Includes On Delay, Repeat Cycle Off Start, Repeat Cycle On Start, One Shot Maintained Interval and One Cycle Maintained Interval

TERMINATION

- 1 8 pin plug-in base
- 2 Screw terminals

DEGREE OF PROTECTION

- 1 IP50 Standard
- 2 IP65 Sealed unit(special order only)

APPLICABLE ACCESSORIES

See accessory section for details

8 pin socket	RP-320
8 pin reversible socket	RP-321
8 pin cable socket	RP-323
Panel mount clip	RP-325
Stop rings	RP-327

SPECIFICATIONS

VOLTAGE: 100-240 VAC, 24 VAC/DC, 12VDC

FREQUENCY: 50/60 Hz (AC models)

TOLERANCE (VOLTAGE): - 15% to + 10% of nominal

POWER CONSUMPTION: 10VA (100-240 VAC)

2.5VA (24 VAC)

2W (12 VDC & 24VDC)

TRANSIENT PROTECTION: MOV

TYPE: Electromechanical relay

MECHANICAL LIFE: 20,000,000 operations

ELECTRICAL LIFE: 100,000 operations minimum
(at full rated load)

RATING: 5A @ 240VAC (resistive)

TYPE: On Delay Only or Programmable

(programmable includes On Delay, Repeat Cycle Off Start, Repeat Cycle On Start, One Shot Maintained Interval and One Cycle Maintained Interval)

REPEAT ACCURACY: ± 0.3% of setting

TIMING RANGE: 0.1 secs to 500 hours in 16 ranges

RESET TIME: 100 msec minimum

OPERATING TEMP: -10° to 50° C (14° to 122°F)

TIMING VARIATION VS. TEMP: ± 2% maximum

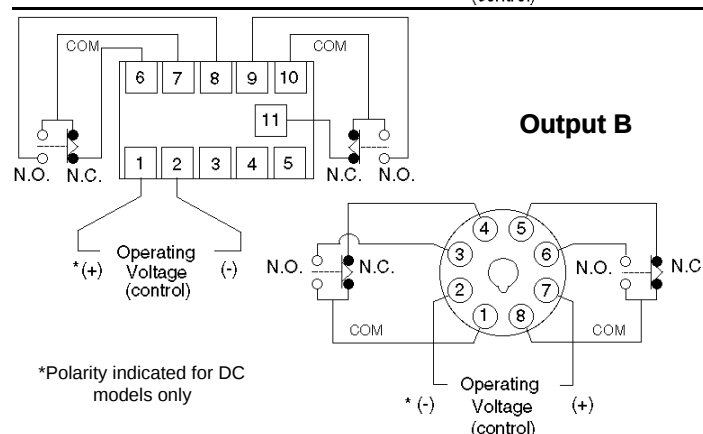
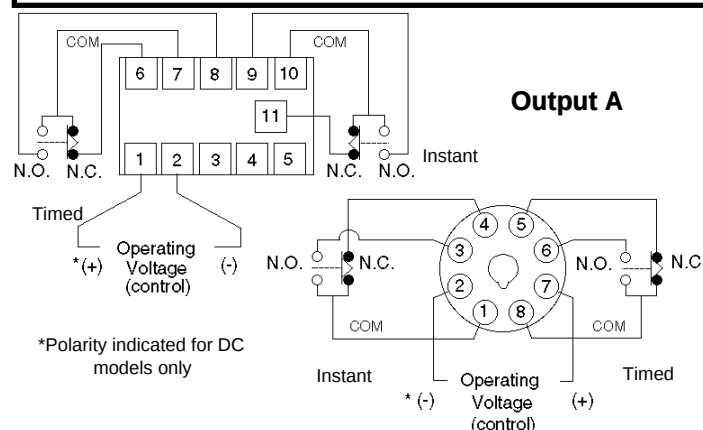
MOUNTING: Plug-In or Panel mount

TERMINATION: 8 pin socket or screw terminals

HOUSING: Polycarbonate

DEGREE OF PROTECTION: IP50(std), IP65(special)

WIRING



OPERATION

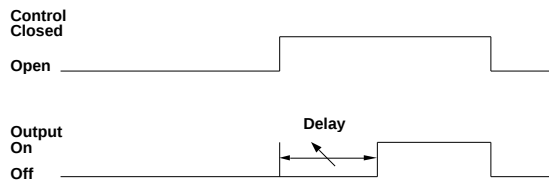
**FUNCTION
SELECTION**

CONTROL WIRING

TIMING

On Delay

Control via application
of input power.
(Terminals 2 & 10, pin base)
(Terminals 1 & 2, screw base)

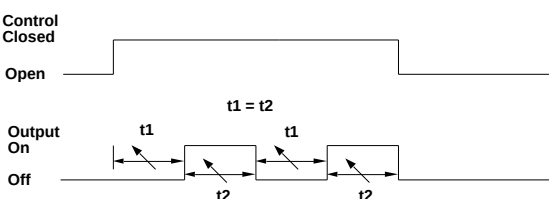


Adjustable time delay on energizing

- Closing the control circuit starts time delay
- Opening the control circuit during timing resets time delay to zero—no accumulation of time delay or false output

**Repeat Cycle
(off start)**

Control via application
of input power.
(Terminals 2 & 10, pin base)
(Terminals 1 & 2, screw base)

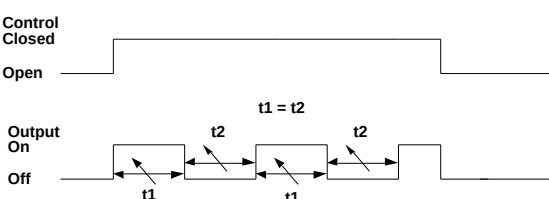


Adjustable repeat cycle

- Closing the control circuit starts the timing sequence
- Opening the control circuit during either timing period resets both time delays to zero, and de-energizes the output

**Repeat Cycle
(on start)**

Control via application
of input power.
(Terminals 2 & 10, pin base)
(Terminals 1 & 2, screw base)

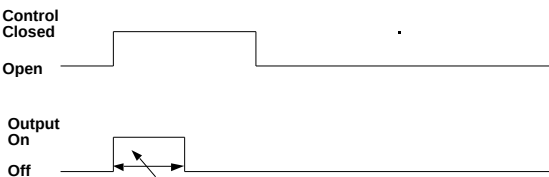


Adjustable repeat cycle

- Closing the control circuit starts the timing sequence and initiates immediate transfer of output contacts
- Opening the control circuit during either timing period resets both time delays to zero, and de-energizes the output

**One Shot,
Maintained
Interval**

Control via application
of input power.
(Terminals 2 & 10, pin base)
(Terminals 1 & 2, screw base)

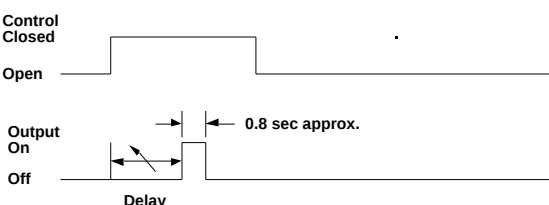


Adjustable time output pulse

- Closing the control circuit starts the timing sequence and initiates immediate transfer of output contacts
- Opening the control circuit during timing resets the time delay to zero and de-energizes the output

**One Cycle,
Maintained
Interval**

Control via application
of input power.
(Terminals 2 & 10, pin base)
(Terminals 1 & 2, screw base)

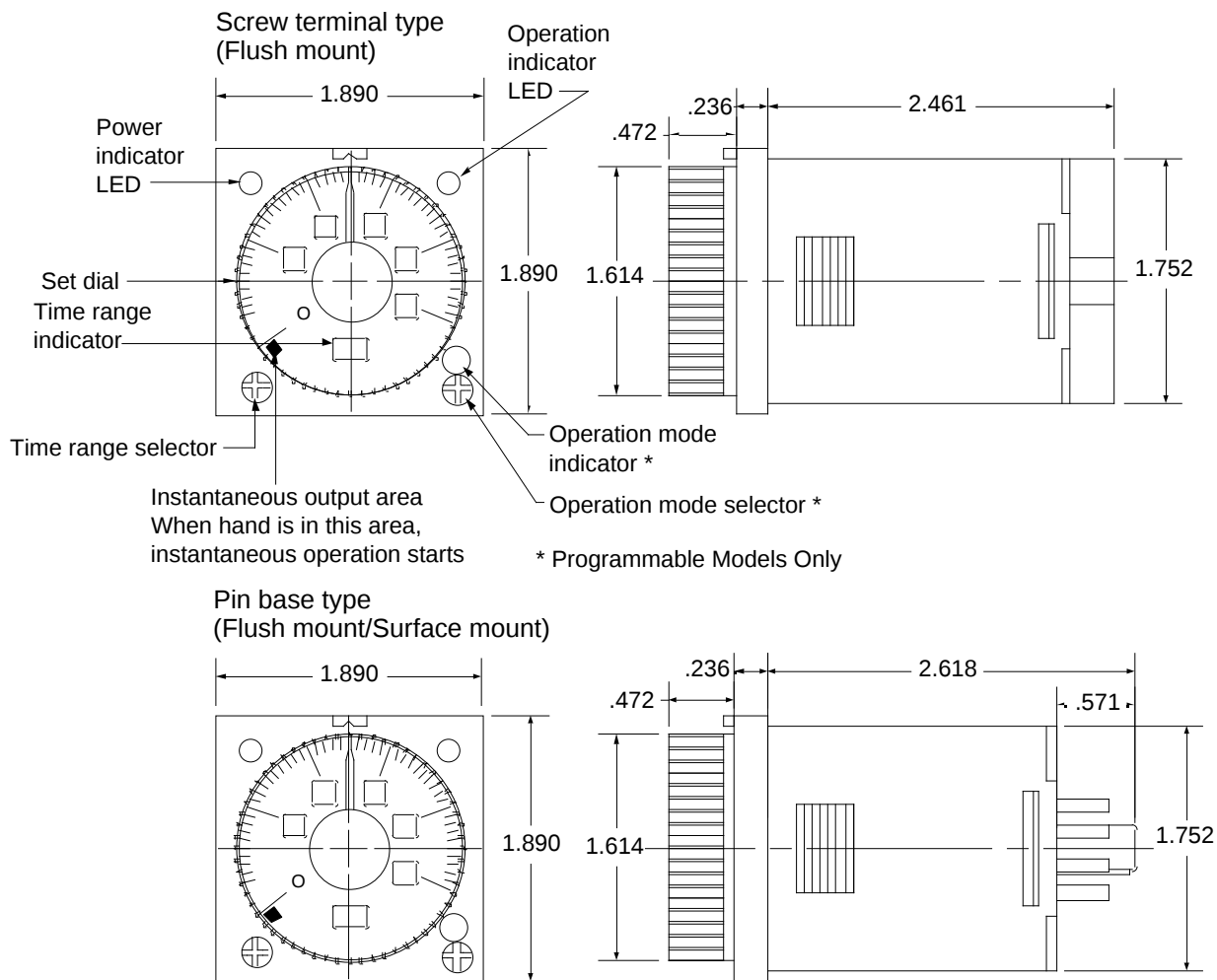


MODEL 1073
DIN PANEL MOUNT

INDUSTRIAL SOLID STATE
TIMER

(ISSC)
KANSON ELECTRONICS, INC.

DIMENSIONS





True Off Delay

The **1081** is a **true off delay**. Removal of input power actuates timing sequence eliminating the need for a separate control circuit. Two timing range options provide operation from 0.04 seconds to 10 minutes. Auto-calibrating dial provides direct reading of time setting in every range. A wide range of operating voltage options support operation from 12VDC to 240VAC, an LED indicates power is applied.



ORDERING DATA

ORDERING CODE 1081 - 2 - A - 2 - B - 1

BASIC MODEL NUMBER

1081

INPUT VOLTAGE

- 1 120 VAC
- 2 240 VAC
- 3 24 VAC
- 4 24 VDC
- 5 12 VDC

TIME RANGE

- A (Includes the following ranges)
 - 0.04 sec - 1 sec
 - 0.2 sec - 5 sec
 - 0.4 sec - 10 sec
- B (Includes the following ranges)
 - 0.04 min - 1 min
 - 0.2 min - 5 min
 - 0.4 min - 10 min

TIMING FUNCTION

- 2 Off delay

OUTPUT

- B Relay DPDT

DEGREE OF PROTECTION

- 1 IP50 Standard
- 2 IP65 Sealed unit(special order only)

APPLICABLE ACCESSORIES

- See accessory section for details
- 8 pin socket RP-320
- 8 pin reversible socket RP-321
- 8 pin cable socket RP-323
- Panel mount clip RP-325
- Stop rings RP-327

SPECIFICATIONS

VOLTAGE: 100-120VAC, 200-240VAC, 24VAC, 24VDC, 12VDC

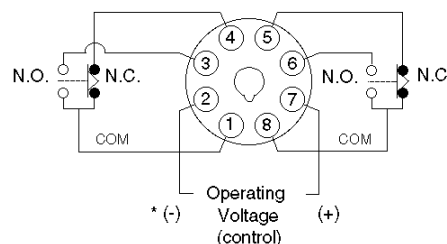
INPUT
FREQUENCY: 50/60 Hz (AC models)
TOLERANCE (VOLTAGE): - 15% to +10% of nominal
POWER CONSUMPTION: 5VA (AC models)
 2W (DC models)
TRANSIENT PROTECTION: MOV

OUTPUT
TYPE: Electromechanical relay
MECHANICAL LIFE: 10,000,000 operations
ELECTRICAL LIFE: 100,000 operations minimum
 (at full rated load)
RATING: 3A @ 240VAC (resistive)

TIMING
TYPE: True Off Delay
REPEAT ACCURACY: $\pm 0.3\%$ of setting
TIMING RANGE: 0.04 secs to 10 secs or
 0.04 min to 10 min
RESET TIME: 100 msec at maximum time setting

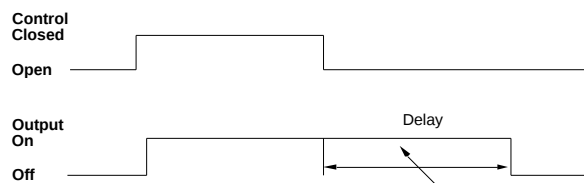
PHYSICAL
OPERATING TEMP: -10° to 50° C (14° to 122°F)
TIMING VARIATION VS. TEMP: $\pm 2\%$ maximum
MOUNTING: Plug-In or Panel mount
TERMINATION: 8 pin socket
HOUSING: Polycarbonate
DEGREE OF PROTECTION: IP50(std), IP65(special)

WIRING



OPERATION

Off Delay



Adjustable time delay on de-energizing

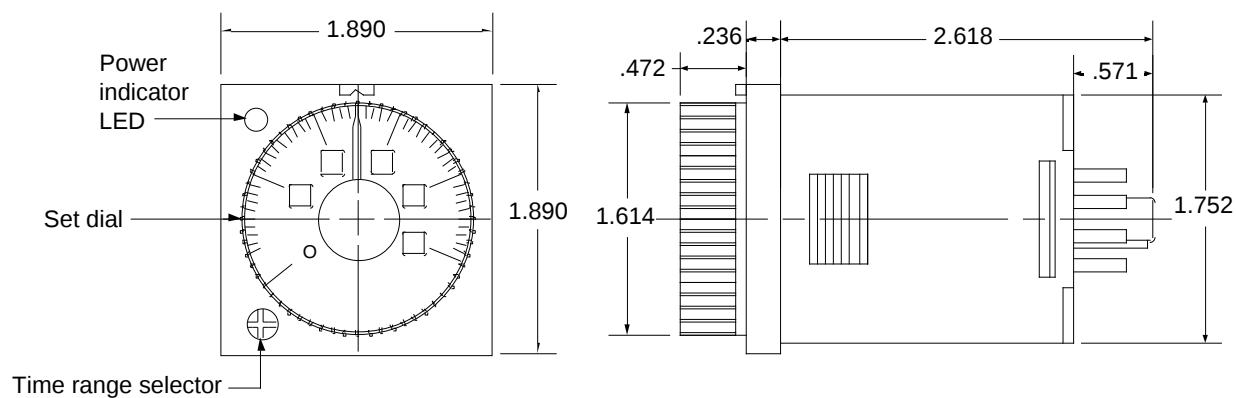
- Closing the control circuit energizes output
- Opening the control circuit starts the time delay
- Reclosing the control circuit during timing resets time delay to zero—no accumulation of time delay or false output

INDUSTRIAL SOLID STATE TIMER

(ISSC)

KANSON ELECTRONICS, INC.

DIMENSIONS





Multifunction Multiple Time Ranges

The 1090 features 8 programmable timing functions. An auto-calibrating dial provides direct reading of time setting in each of 16 programmable time ranges from 0.1 seconds to 500 hours. Operating voltage options cover 12VDC to 240VAC. LED indicators for Power and Contact status.

ORDERING DATA

ORDERING CODE 1090 - 3 - P - 3 - B - 1 - 1

BASIC MODEL NUMBER

1090

INPUT VOLTAGE

- 1 120-240 VAC
- 3 24 VAC/DC
- 5 12 VDC

TIME RANGE

P (Includes the following ranges)

seconds	minutes	hours	10 hours
0.1 to 1.0	0.1 to 1.0	0.1 to 1.0	1.0 to 10
0.5 to 5.0	0.5 to 5.0	0.5 to 5.0	5.0 to 50
1.0 to 10	1.0 to 10	1.0 to 10	10 to 100
5.0 to 50	5.0 to 50	5.0 to 50	50 to 500

TIMING FUNCTION

- 3 Programmable, includes On Delay, Off Delay, Repeat Cycle Off Start, Repeat Cycle On Start, Pulse One-shot, One-shot On/Off, One-shot Off/On and One Cycle Maintained Interval

OUTPUT

B Relay DPDT

TERMINATION

- 1 11 pin plug-in base
- 2 Screw terminals

DEGREE OF PROTECTION

- 1 IP50 Standard
- 2 IP65 Sealed unit(special order only)

APPLICABLE ACCESSORIES

See accessory section for details

11 pin socket	RP-322
11 pin cable socket	RP-324
Panel mount clip	RP-325
Stop rings	RP-327

SPECIFICATIONS

VOLTAGE: 100-240 VAC, 24 VAC/DC, 12VDC

FREQUENCY: 50/60 Hz (AC models)

TOLERANCE (VOLTAGE): - 15% to + 10% of nominal

POWER CONSUMPTION: 10VA (100-240 VAC)

2.5VA (24 VAC)

2W (12 VDC & 24VDC)

TRANSIENT PROTECTION: MOV

TYPE: Electromechanical relay

MECHANICAL LIFE: 20,000,000 operations

ELECTRICAL LIFE: 100,000 operations minimum
(at full rated load)

RATING: 5A @ 240VAC (resistive)

TYPE: Multifunction programmable (On Delay, Off Delay, Repeat Cycle Off Start, Repeat Cycle On Start, Pulse One-shot, One-shot On/Off, One-shot Off/On and One Cycle Maintained Interval)

REPEAT ACCURACY: $\pm 0.3\%$ of setting

TIMING RANGE: 0.1 secs to 500 hours in 16 ranges

RESET TIME: 100 msec minimum

OPERATING TEMP: -10° to 50° C (14° to 122°F)

TIMING VARIATION VS. TEMP: $\pm 2\%$ maximum

MOUNTING: Plug-In or Panel mount

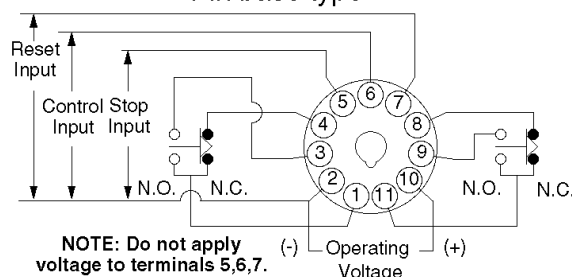
TERMINATION: 11 pin socket or screw terminals

HOUSING: Polycarbonate

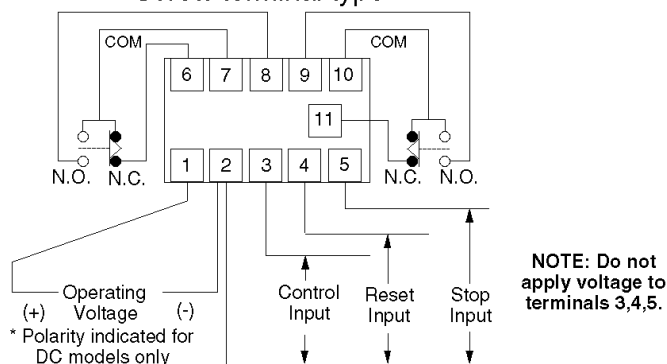
DEGREE OF PROTECTION: IP50(std), IP65(special)

WIRING

Pin base type



Screw terminal type



Control, Reset and Stop input is accomplished by isolated contact closure between indicated terminals.

OPERATION

**FUNCTION
SELECTION**

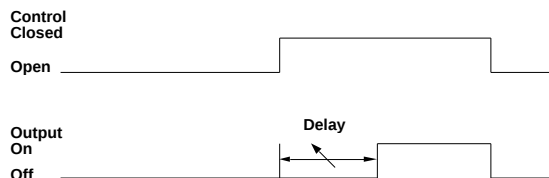
CONTROL WIRING

TIMING

On Delay

ON

Jumper the control input terminals for control via application of input power.
(Terminals 2 & 10, pin base)
(Terminals 1 & 2, screw base)



Adjustable time delay on energizing

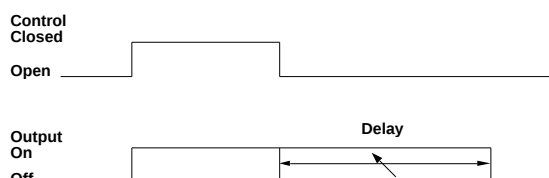
- Closing the control circuit starts time delay
- Opening the control circuit during timing resets time delay to zero—no accumulation of time delay or false output

Off Delay

SF

Continuous power on input terminals.
(Terminals 2 & 10, pin base)
(Terminals 1 & 2, screw base)

Control via isolated contact closure between control terminals.
(Terminals 2&6, pin base)
(Terminals 2&3, screw base)



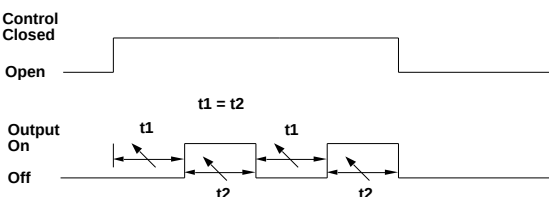
Adjustable time delay on deenergizing

- Closing the control circuit energizes output
- Opening the control circuit starts time delay
- Reclosing the control circuit during timing resets time delay to zero—no accumulation of time delay or false output

**Repeat Cycle
(off start)**

FL

Jumper the control input terminals for control via application of input power.
(Terminals 2 & 10, pin base)
(Terminals 1 & 2, screw base)



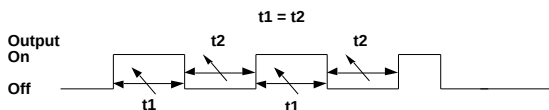
Adjustable repeat cycle

- Closing the control circuit starts the timing sequence
- Opening the control circuit during either timing period resets both time delays to zero, and de-energizes the output

**Repeat Cycle
(on start)**

FO

Jumper the control input terminals for control via application of input power.
(Terminals 2 & 10, pin base)
(Terminals 1 & 2, screw base)



Adjustable repeat cycle

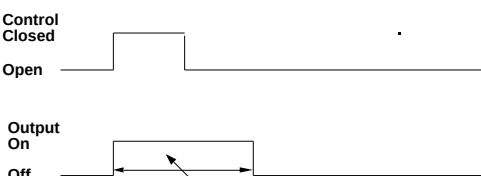
- Closing the control circuit starts the timing sequence and initiates immediate transfer of output contacts
- Opening the control circuit during either timing period resets both time delays to zero, and de-energizes the output

One Shot

OS

Continuous power on input terminals.
(Terminals 2 & 10, pin base)
(Terminals 1 & 2, screw base)

Control via isolated contact closure between control terminals.
(Terminals 2&6, pin base)
(Terminals 2&3, screw base)



Adjustable time output pulse

- Closing the control circuit starts the timing sequence and initiates immediate transfer of output contacts
- Opening and closing the control circuit during timing will not affect timing or output

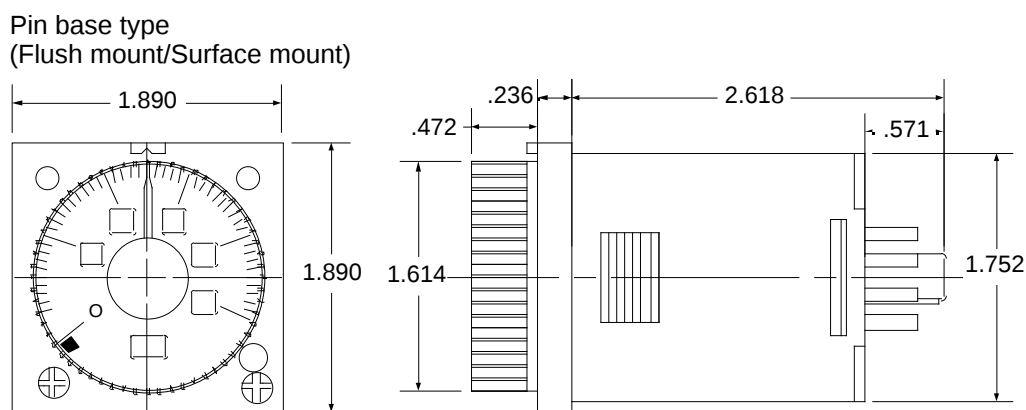
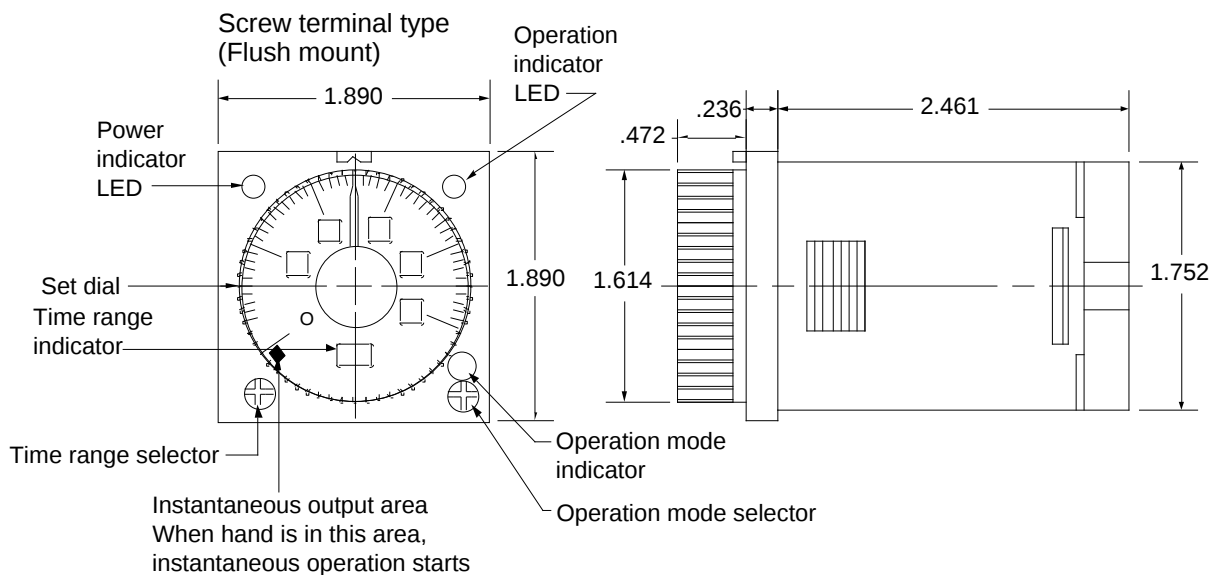
OPERATION CONTINUED

FUNCTION SELECTION	CONTROL WIRING	TIMING
One Shot, On/Off (Retriggerable One Shot) (on start) OF1	Continuous power on input terminals (Terminals 2 & 10, pin base) (Terminals 1 & 2, screw base) Control via isolated contact closure between control terminals. (Terminals 2 & 6, pin base) (Terminals 2 & 3, screw base)	
One Shot, On/Off (Retriggerable One Shot) (off start) OF2	Continuous power on input terminals (Terminals 2 & 10, pin base) (Terminals 1 & 2, screw base) Control via isolated contact closure between control terminals. (Terminals 2 & 6, pin base) (Terminals 2 & 3, screw base)	
One Cycle, Maintained Interval OC	Control via application of input power. (Terminals 2 & 10, pin base) (Terminals 1 & 2, screw base)	

NOTE: The "Reset" and "Stop" functions are actuated by isolated contact closure between the appropriate terminals. These functions are utilized as applications may require:

- "Reset" will reset the timer at any point during the timing cycle. Ordinarily the timer resets upon removal of control or power.
- "Stop" causes the timing action to stop at any point during the timing cycle. Timing resumes from the stopped point when the "Stop" signal is removed.
- Control, Stop, and Reset signals must be 0.05 sec or greater in duration.

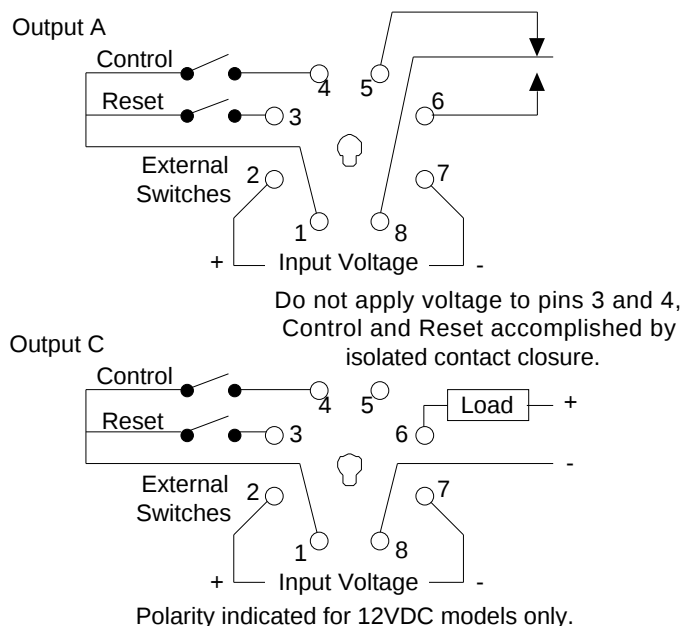
DIMENSIONS



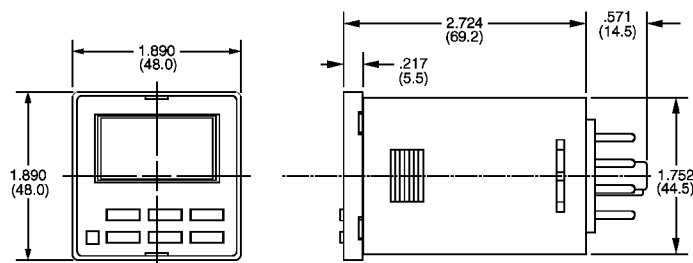
SPECIFICATIONS

INPUT	VOLTAGE: 24 to 240VAC/DC or 12VDC
	FREQUENCY: 50/60 Hz (AC models)
	POWER CONSUMPTION: 2.5VA (AC models), 2.5W (DC models)
	TRANSIENT PROTECTION: MOV
OUTPUT	TYPE: Electromechanical relay or transistor
	MECHANICAL LIFE: 10,000,000 operations(Relay only)
	ELECTRICAL LIFE: Relay...100,000 operations minimum (at full rated load) Transistor...10,000,000 operations minimum
	RATING: Relay...5A @ 250VAC (resistive) Transistor...100mA, 30VDC maximum
TIMING	TYPE: Multifunction
	REPEAT ACCURACY: $\pm 0.005\%$ of setting
	TIMING RANGE: 0.001 secs to 9,999 hours
	RESET TIME: 20 ms
PHYSICAL	OPERATING TEMP: -10° to 50° C (14° to 122°F)
	TIMING VARIATION VS. TEMPERATURE: $\pm .005\%$
	MOUNTING: Plug-In or Panel mount
	TERMINATION: 8 pin socket
	HOUSING: Polycarbonate

WIRING



DIMENSIONS Inches (millimeters)



Digital Timer

The **1095** features a large, easy to read, LCD display with programmable time ranges from 0.001 seconds to 9999 hours in 7 programmable timing functions. Two power supply options are available, a wide range of 24 to 240 VAC/DC and a 12VDC only version. A battery back-up maintains memory up to 7 years. Output is an SPDT relay or open collector transistor.

ORDERING DATA

ORDERING CODE	1095 - 1 - P - 3 - A
BASIC MODEL NUMBER	1095
INPUT VOLTAGE	1 24 thru 240VAC/DC 2 12VDC
TIME RANGE	P (user selectable ranges) 0.001 seconds to 9,999 hours
TIMING FUNCTION	3 Programmable A On Delay (power control) B On Delay (isolated control) C Off Delay D One shot, Interval E Pulsed On Delay, Latched output F Repeat Cycle G On Delay, time totalizing
OUTPUT	A Relay SPDT C Open Collector Transistor (100mA, 30VDC)

APPLICABLE ACCESSORIES

See accessory section for details	
8 pin socket	RP-320
8 pin reversible socket	RP-321
8 pin cable socket	RP-323
Panel mount clip	RP-325 (one included with Model 1095)
Protective cover	RP-326

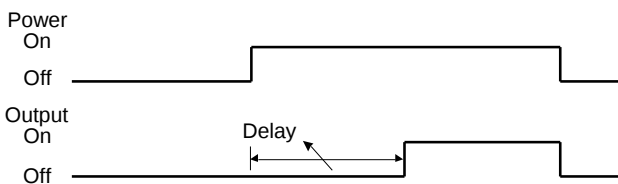
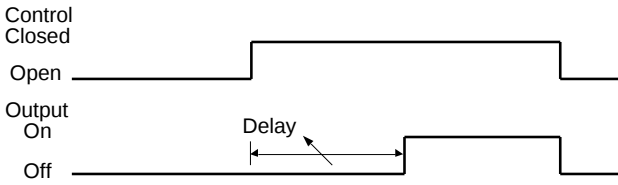
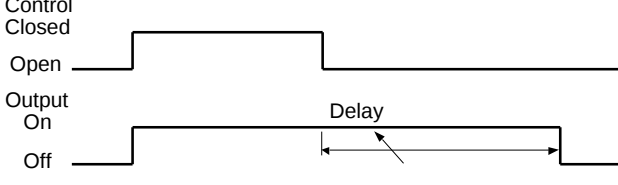
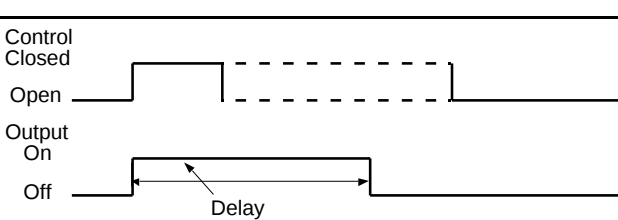
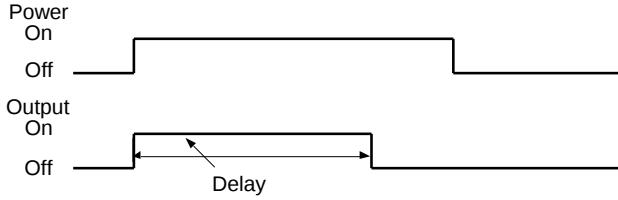
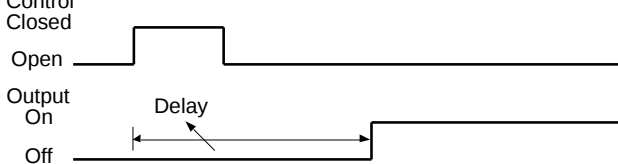
Courtesy of Steven Engineering, Inc. • 230 Ryan Way, South San Francisco, CA, 94080-6370 • Main Office: (650) 588-9200 • Outside Local Area: (800) 258-9200 • www.stevenengineering.com

MODEL 1055
DIN PANEL MOUNT

INDUSTRIAL SOLID STATE
TIMER

(ISSC)
KANSON ELECTRONICS, INC.

OPERATION

FUNCTION SELECTION	CONTROL WIRING	TIMING	
A: On Delay Power Control	Control via application of input power on terminals 2 and 7.		Adjustable time delay on energizing •Applying power starts time delay •Removing power from the circuit during timing resets the time delay to zero - no accumulation of time delay or false output.
B: On Delay Isolated Control	Continuous power on terminals 2 and 7. Control via isolated contact closure between terminals 1 and 4.		Adjustable time delay on control closure •Closing the control circuit starts time delay •Opening control circuit during timing resets the time delay to zero - no accumulation of time delay or false output.
C: Off Delay	Continuous power on terminals 2 and 7. Control via isolated contact closure between terminals 1 and 4.		Adjustable time delay on control opening •Closing the control circuit energizes the output. •Opening the control circuit starts time delay •Reclosing the control circuit during timing resets the time delay to zero - no accumulation of time delay or false output.
D: One Shot, Interval	One Shot Continuous power on terminals 2 and 7. Control via isolated contact closure between terminals 1 and 4.		Adjustable time output pulse •Closing the control circuit initiates timed output pulse. •Opening and closing control circuit during timing will not effect timing or output.
	Maintained Interval Jumper terminals 1 and 4. Control via application of power on terminals 2 and 7.		Adjustable timed output interval •Application of power starts the timed output interval •Removing power during timing resets the time delay to zero and de-energizes the output.
E: Pulsed On Delay Latched Output	Continuous power on terminals 2 and 7. Control via isolated contact closure between terminals 1 and 4. Latched output is reset by contact closure between terminals 1 and 3.		Adjustable time delay on control closing •Closing the control circuit starts the timing sequence. •Opening and closing control circuit during timing will not effect timing or output. •Upon time-out, the output will remain latched until reset.

OPERATION CONTINUED

FUNCTION SELECTION	CONTROL WIRING	TIMING	
F: Repeat Cycle	Control via application of input power to terminals 2 and 7.		Adjustable repeat cycle •Applying power starts the timing sequence. •Removing power during either timing period resets both time delays to zero and de-energizes the output.
G: On Delay Time Totalizing	Continuous power on terminals 2 and 7. Control via isolated contact closure between terminals 1 and 4. Latched output is reset by contact closure between terminals 1 and 3.		Adjustable time delay on energizing •Closing the control circuit starts the timing sequence. •Opening control circuit during timing stops the timing sequence but does not reset the time accumulated. •Upon time-out, the output will remain latched until reset.

PROGRAMMING



1) TIME RANGE

- Push "Enter".
- Select the desired range by repeatedly pushing "T.Range" until the proper time range(sec, min, hours, etc) is displayed.
- Push "Enter" or "Reset".

2) TIME VALUE

- Push "Enter".
- Repeatedly push "←" until the "_" is displayed under the digit to be changed
- Push "Set" to increment the digit to the desired value.
- Push "←" to move to another digit location or push "Enter" if this is the last digit to be changed.

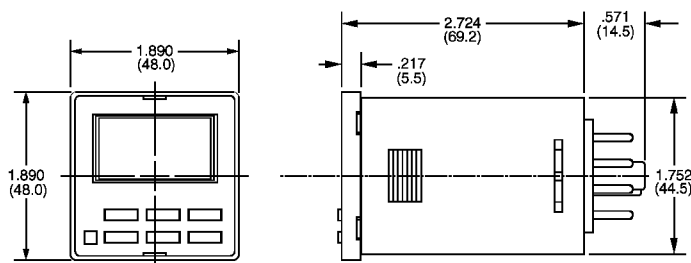
3) TIMING FUNCTION

- Push "Enter".
- Repeatedly push "Mode" until the proper letter designator for desired mode is indicated(A thru G).
- Push "Enter" or "Reset".

4) COUNT UP/DOWN(Elapsed time)

- Push "Enter".
- Push "Up/Down" to select direction of elapsed time indication. ("Up" starts at "0" and counts upward. "Down" starts at programmed value and counts down to "0").
- Push "Enter" or "Reset".

DIMENSIONS Inches (millimeters)



Courtesy of Steven Engineering, Inc. • 230 Ryan Way, South San Francisco, CA, 94080-6370 • Main Office: (650) 588-9200 • Outside Local Area: (800) 258-9200 • www.stevenengineering.com

MODEL 1096 DIN PANEL MOUNT

INDUSTRIAL SOLID STATE TIMER

(ISSC)
KANSON ELECTRONICS, INC.



Digital Dual Timer

The 1096 features a large, easy to read, LCD display with programmable time ranges from 0.001 seconds to 9999 hours in 6 on/off delay or repeat cycle timing functions. On time and off time are set independently. Two power supply options are available, a wide range of 24 to 240 VAC/DC and a 12VDC only version. A battery back-up maintains memory up to 7 years. Output is an SPDT relay or open collector transistor.

ORDERING DATA

ORDERING CODE 1096 - 1 - P - 3 - A

BASIC MODEL NUMBER

1096

INPUT VOLTAGE

- 1 24 thru 240VAC/DC
- 2 12VDC

TIME RANGE

- P (user selectable ranges)
- 0.01 seconds to 9,999 hours
- T1 & T2 are independently programmable

TIMING FUNCTION

- 3 Programmable
- Pulse A Pulsed On Delay/Off Delay One Cycle
- Pulse B Repeat Cycle, Start Off
- Pulse C Repeat Cycle, Start On
- Total A Maintained On Delay/Off Delay One Cycle, time totalizing
- Total B Repeat Cycle Start Off, time totalizing
- Total C Repeat Cycle Start On, time totalizing

OUTPUT

- A Relay SPDT
- C Open Collector Transistor (100mA,30VDC)

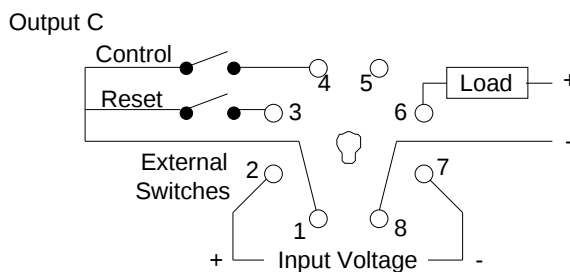
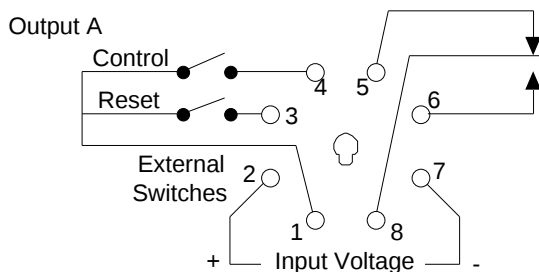
APPLICABLE ACCESSORIES

- See accessory section for details
- 8 pin socket RP-320
- 8 pin reversible socket RP-321
- 8 pin cable socket RP-323
- Panel mount clip RP-325(one included with Model 1096)
- Protective cover RP-326

SPECIFICATIONS

INPUT	VOLTAGE: 24 to 240VAC/DC or 12VDC
	FREQUENCY: 50/60 Hz (AC models)
	POWER CONSUMPTION: 2.5VA (AC models), 2.5W (DC models)
	TRANSIENT PROTECTION: MOV
OUTPUT	TYPE: Electromechanical relay or transistor
	MECHANICAL LIFE: 10,000,000 operations(Relay only)
	ELECTRICAL LIFE: Relay...100,000 operations minimum (at full rated load)
	Transistor...10,000,000 operations minimum
TIMING	RATING: Relay...5A @ 250VAC (resistive)
	Transistor...100mA, 30VDC maximum
	TYPE: Multifunction
	REPEAT ACCURACY: $\pm 0.005\%$ of setting
PHYSICAL	TIMING RANGE: 0.01 secs to 9,999 hours
	RESET TIME: 20 ms
	OPERATING TEMP: -10° to 50° C (14° to 122°F)
	TIMING VARIATION VS. TEMPERATURE: $\pm .005\%$
	MOUNTING: Plug-In or Panel mount
	TERMINATION: 8 pin socket
	HOUSING: Polycarbonate

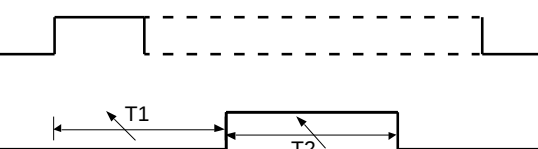
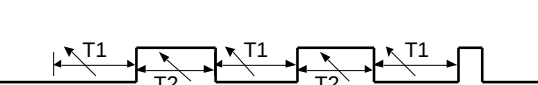
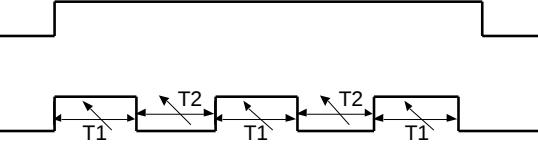
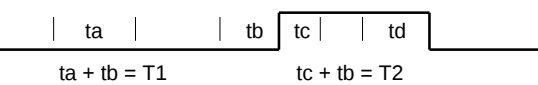
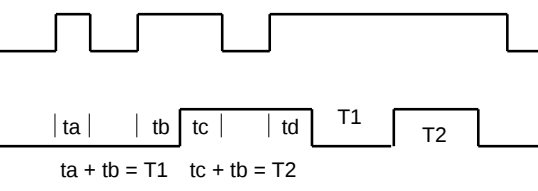
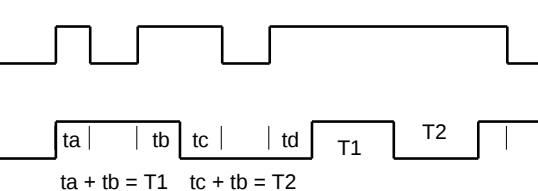
WIRING



Polarity indicated for 12VDC models only.

Do not apply voltage to pins 3 and 4, Control and Reset accomplished by isolated contact closure.

OPERATION

FUNCTION SELECTION	CONTROL WIRING	TIMING	
Pulse A: Pulsed On delay/Off delay, One Cycle	Continuous power on input terminals 2 and 7. Control via isolated contact closure between terminals 1 and 4.	Control Closed Open Output On Off 	Programmable dual time delay •Closing control circuit starts timing sequence •Opening and closing control circuit during timing will not effect timing or output.
Pulse B: Repeat Cycle Start Off	Jumper terminals 1 and 4. Control via application of input power on terminals 2 and 7.	Power On Off Output On Off 	Programmable dual time repeat cycle •Closing control circuit starts timing sequence •Opening the control circuit during either timing period resets both time delays to zero and de-energizes the output.
Pulse C: Repeat Cycle Start On	Jumper terminals 1 and 4. Control via application of input power on terminals 2 and 7.	Power On Off Output On Off 	Programmable dual time repeat cycle •Closing control circuit starts timing sequence •Opening the control circuit during either timing period resets both time delays to zero and de-energizes the output.
Total A: Maintained On delay/Off delay, One Cycle Time Totalizing	Continuous power on input terminals 2 and 7. Control via isolated contact closure between terminals 1 and 4. Reset via isolated contact closure between terminals 1 and 3.	Control Closed Open Output On Off 	Programmable dual time delay •Closing control circuit starts timing sequence •Opening the control circuit during either timing period stops the timing sequence but does not reset the time accu- mulated. •Reset is achieved via external reset control
Total B: Repeat Cycle, Start Off Time Totalizing	Continuous power on input terminals 2 and 7. Control via isolated contact closure between terminals 1 and 4. Reset via isolated contact closure between terminals 1 and 3.	Control Closed Open Output On Off 	Programmable dual time repeat cycle •Closing control circuit starts timing sequence •Opening the control circuit during either timing period stops the timing sequence but does not reset the time accu- mulated. •Reset is achieved via external reset control
Total C: Repeat Cycle, Start On Time Totalizing	Continuous power on input terminals 2 and 7. Control via isolated contact closure between terminals 1 and 4. Reset via isolated contact closure between terminals 1 and 3.	Control Closed Open Output On Off 	Programmable dual time repeat cycle •Closing control circuit starts timing sequence •Opening the control circuit during either timing period stops the timing sequence but does not reset the time accu- mulated. •Reset is achieved via external reset control

PROGRAMMING



1) TIME RANGE

- Push "Enter" one time for T1 setting or two times for T2 setting.
- Select the desired range by repeatedly pushing "T.Range" until the proper time range(sec, min, hours, etc) is displayed.
- Push "Enter" or "Reset".

2) TIME VALUE

- Push "Enter" one time for T1 setting or two times for T2 setting.
- Repeatedly push "←" until the "_" is displayed under the digit to be changed.
- Push "Set" to increment the digit to the desired value.
- Push "←" to move to another digit location or push "Enter" if this is the last digit to be changed.

3) TIMING FUNCTION

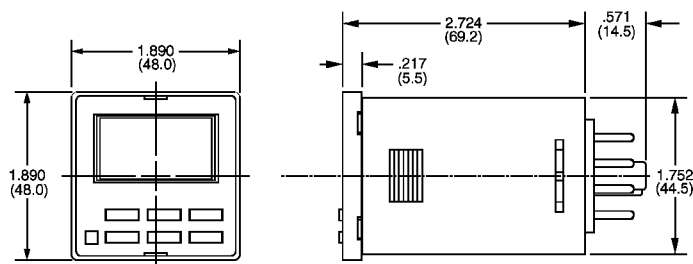
- Push "Enter".
- Repeatedly push "Mode" until the proper letter designator for desired mode is indicated(Pulse A thru Total C).
- Push "Enter" or "Reset".

4) COUNT UP/DOWN(Elapsed time)

- Push "Enter".
- Push "Up/Down" to select direction of elapsed time indication. ("Up" starts at "0" and counts upward. "Down" starts at programmed value and counts down to "0")
- Push "Enter" or "Reset".

NOTE : While in the operating mode, the T1 and T2 time settings may be confirmed by pushing "SET" repeatedly will toggle between the T1 and T2 displays. Operation of the timer will not be affected.

DIMENSIONS Inches (millimeters)

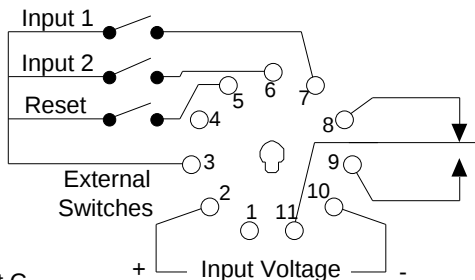


SPECIFICATIONS

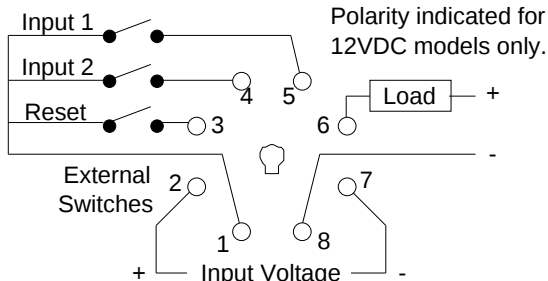
INPUT	VOLTAGE: 24 to 240VAC/DC or 12VDC
	FREQUENCY: 50/60 Hz (AC models)
INPUT	POWER CONSUMPTION: 2.5VA (AC models), 2.5W (DC models)
	TRANSIENT PROTECTION: MOV
COUNTER INPUT	TYPE: Multifunction
	SPEED: 30/sec or 1000/sec
COUNTER INPUT	NUMBER OF INPUTS: Two
	INPUT METHOD: Isolated contact or transistor
OUTPUT	TYPE: Electromechanical relay or transistor
	MECHANICAL LIFE: 10,000,000 operations(Relay only)
OUTPUT	ELECTRICAL LIFE: Relay...100,000 operations minimum (at full rated load)
	Transistor...10,000,000 operations minimum
OUTPUT	RATING: Relay...5A @ 250VAC (resistive)
	Transistor...100mA, 30VDC maximum
COUNTING	MODES: 7 (programmable)
	DISPLAY: 6 digit LCD
PHYSICAL	OPERATING TEMP: -10° to 50° C (14° to 122°F)
	MOUNTING: Plug-In or Panel mount
PHYSICAL	TERMINATION: Relay output - 11 pin socket
	Transistor output - 8 pin socket
PHYSICAL	HOUSING: Polycarbonate

WIRING

Output A



Output C



Do not apply voltage to pins 5,6,7

Do not apply voltage to pins 3,4,5

Reset and Count inputs accomplished by isolated contact closure.



Digital Preset Counter

The 1105C features two 2 inputs and 5 input functions and a large, 6 digit LCD display. Two input count speeds (30/sec or 1000/sec) can be used to eliminate noise. There are 7 output functions with SPDT relay or optional transistor output. Two power supply options are available, a wide range of 24 to 240 VAC/DC and a 12VDC only version. A battery back-up maintains memory up to 7 years.

ORDERING DATA

ORDERING CODE 1105C - 1 - P - 3 - A

BASIC MODEL NUMBER

1105C

INPUT VOLTAGE

- 1 24 to 240VAC/DC
- 2 12VDC

TIME RANGE

P (Includes the following modes)

- UP Counts Up
- DOWN Counts Down
- DIR Directional Count
- IND Independent Inputs
- PHASE Phased Inputs

TIMING FUNCTION

- 3 Programmable
- Hold A Latched Output/Hold count
- Hold B Latched Output/Over count
- Hold C Latched (one count)/Over count
- Shot A One Shot/Continue count
- Shot B One Shot/Reset "On"
- Shot C One Shot/Reset "Off"
- Shot D One Shot/Hold count

OUTPUT

- A Relay SPDT
- C Open Collector Transistor (100mA,30VDC)

APPLICABLE ACCESSORIES

- See accessory section for details
- 8 pin socket RP-320
- 8 pin reversible socket RP-321
- 11 pin socket RP-322
- 8 pin cable plug RP-323
- 11 pin cable plug RP-324
- Panel mount clip RP-325 (one included with Model 1105C)
- Protective cover RP-326

MODEL 1100C DIN PANEL MOUNT

INDUSTRIAL SOLID STATE COUNTER

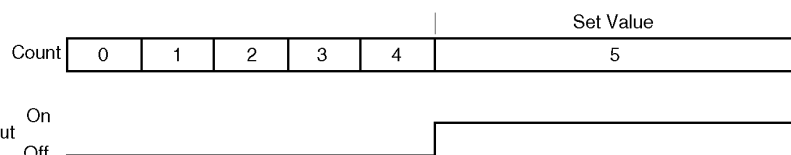
(ISSC)
KANSON ELECTRONICS, INC.

INPUT OPERATION

INPUT FUNCTION	OPERATION DESCRIPTION
UP Count up to set value	- Input 1 is count input - Input 2 inhibits count input
DOWN Count down from set value	- Input 1 is count input - Input 2 inhibits count input
DIR Directional Count. Count Up or Count Down	- Input 1 is count input - Input 2 controls direction of count. With no input on 2 count is Up. With an input on 2 count is Down.
IND Independent inputs	- Input 1 is Count Up - Input 2 is Count Down
PHASE Phasing of inputs determines count direction	- If Input 1 is phased ahead of Input 2 count is Up - If Input 2 is phased ahead of Input 1 count is Down

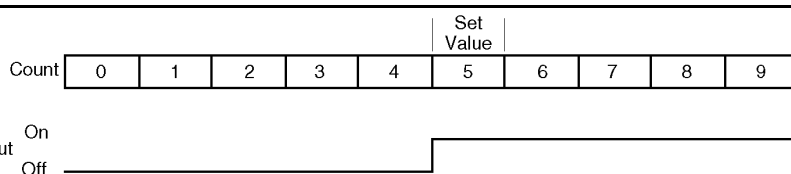
OUTPUT OPERATION

Hold A



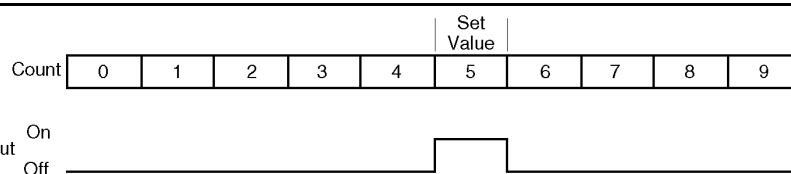
- Upon counting to set value, output latches On and count input is inhibited.
- Output remains on until reset.

Hold B



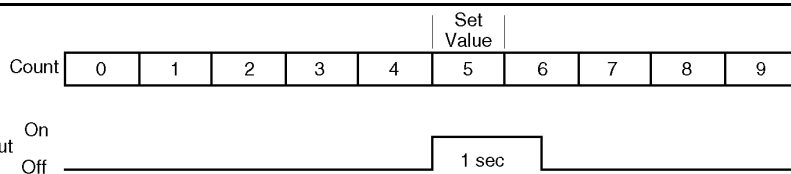
- Upon counting to set value, output latches On but the count continues to increment.
- Output remains on until reset.

Hold C



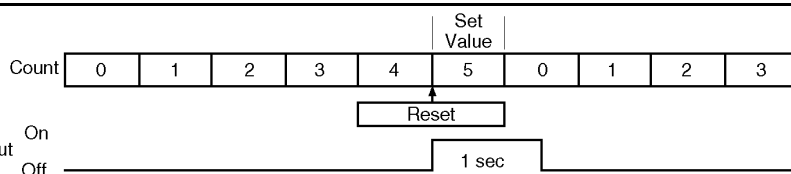
- Upon counting to set value, output turns On.
- Output turns Off at next count following set value
- Count continues to increment.

Shot A



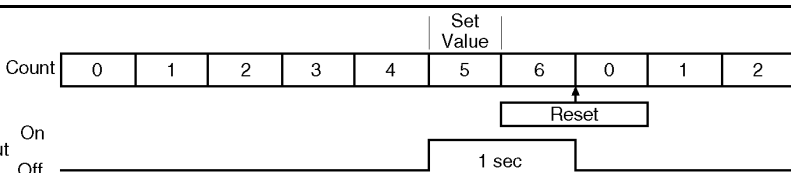
- Upon counting to set value, output turns On for approximately 1 second.
- Count continues to increment.

Shot B



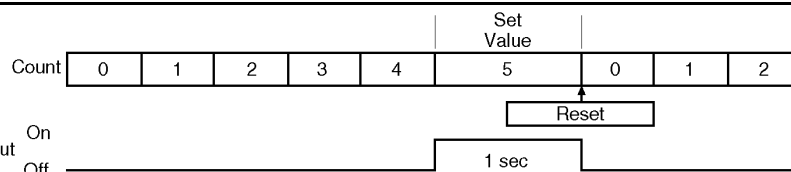
- Upon counting to set value, output turns On for approximately 1 second and the count is automatically reset.
- Count may be continued from this point with no requirement for external reset.

Shot C



- Upon counting to set value, output turns On for approximately 1 second.
- Count automatically resets at the same time the output turns Off.

Shot D



- Upon counting to set value, output turns On for approximately 1 second.
- Count input is inhibited while output is On.
- Count automatically resets at the same time the output turns Off.

PROGRAMMING



1) COUNT SET VALUE

- Push "Enter".
- Repeatedly push "←" until the "_" is displayed under the digit to be changed.
- Push "Set" to increment the digit to the desired value.
- Push "←" to move to another digit location or push "Enter" if this is the last digit to be changed.

2) COUNT SPEED SELECT

- Push "Enter".
- Push "30/1K" to select 30/sec or 1000/sec.
- Push "Enter" or "Reset".

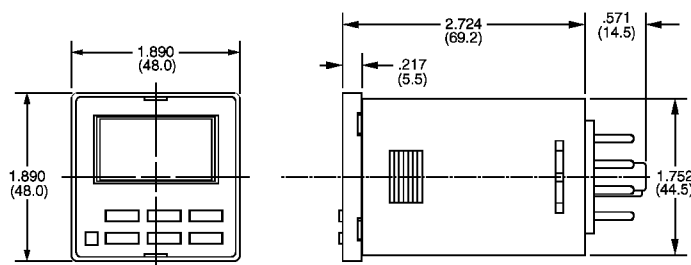
3) INPUT MODE

- Push "Enter".
- Repeatedly push "Input M" until the desired function designation is displayed.
- Push "Enter" or "Reset".

4) OUTPUT MODE

- Push "Enter".
- Repeatedly push "Output M" until the desired function designation is displayed.
- Push "Enter" or "Reset".

DIMENSIONS Inches (millimeters)



NOTES



KANSON ELECTRONICS, INC.

SPECIFICATIONS

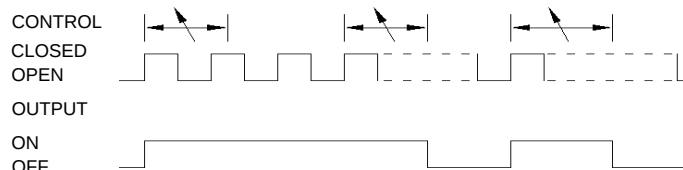
INPUT	VOLTAGE: 120VAC, 24VAC
	FREQUENCY: 50/60 Hz
OUTPUT	TOLERANCE (VOLTAGE): $\pm 10\%$ of nominal
	POWER CONSUMPTION: 10 VA maximum
FUNCTION	TRANSIENT PROTECTION: Isolation transformer (120VAC only)
	TYPE: Electromechanical relay
PHYSICAL	RATING: 10A - 240VAC maximum
	TYPE: Motion detector
FUNCTION	TIMING RAMP: 100k Ω /sec
	TIME RANGE: 0.06 to 100 secs in 10 ranges
FUNCTION	RANGE TOLERANCE: $\leq 10\%$ at max, $\leq 0\%$ at min
	CONTROL: Isolated contact closure (maximum resistance - 100 Ω)
FUNCTION	CONTROL TERMINALS: E-F
	VOLTAGE PRESENT AT CONTROL TERMINALS: 24VDC minimum, 40VDC maximum
FUNCTION	CYCLE TIME: Min. time control circuit closed 2msec
	Min. time control circuit open 50msec
FUNCTION	Max. control circuit pulses/sec 18
	OPERATING TEMP: 0° to 50° C (32° to 120°F)
PHYSICAL	TIMING VARIATION VS. TEMP: $\pm 5\%$ maximum
	MOUNTING: Base mount
PHYSICAL	TERMINATION: Terminal blocks on face of timer
	HOUSING: Metal



Underspeed Detector

Compact unit is designed for use in standard mechanical switch applications.

OPERATION



Closing the control circuit energizes the output. Opening and reclosing the control circuit before the set time interval completes keeps the output energized, and it remains energized as long as the monitored motion continues to provide at least two pulses per set time interval. If the monitored motion stops, the output de-energizes after the set time interval completes, even if motion stops in such a way that the control circuit remains closed.

ORDERING DATA

ORDERING CODE	1214 - 1 - J - B
BASIC MODEL NUMBER	1214
INPUT VOLTAGE	1 120VAC 2 24VAC
TIME RANGE (Secs)	A 0.06-0.10 F 0.06-5.0 B 0.06-.25 G 0.06-10.0 C 0.06-.50 H 0.06-25.0 D 0.06-1.0 J 0.06-50.0 E 0.06-2.5 K 0.06-100
OUTPUT	B Relay 1 N.O., 1 N.C. B1 Relay 2 N.O. B2 Relay 2 N.C.

APPLICABLE ACCESSORIES

See accessory section for details	
Potentiometers	RP-201 thru RP-210
Reference dial	RP-216
Locking attachment	RP-217

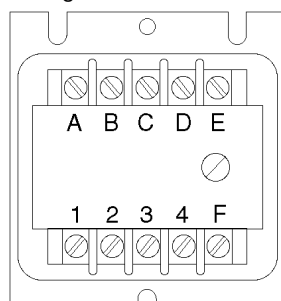
WIRING

OUTPUT B,B1,B2

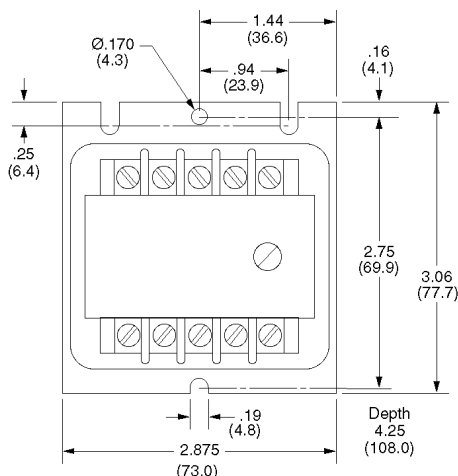
- A-B Voltage input (constant)
- C-D Remote adjust (jumper if not used)
- E-F Control (resets timing function)
- 1-2 N.O. timed (except B2, N.C.)
- 3-4 N.C. timed (except B1, N.O.)

Caution: Never apply voltage to C-D-E-F

Wiring Terminal Location



DIMENSIONS Inches (millimeters)



**MODEL 1217
BASE MOUNT**

**INDUSTRIAL SOLID STATE
MOTION DETECTOR**

(ISSC)
KANSON ELECTRONICS, INC.



**MOTION DETECTOR
PLC WATCHDOG TIMER**

The 1217 combines the control features of an underspeed motion detector and a noncontact solid state proximity sensor. It can also be used without the proximity sensor as a PLC watchdog timer.

OPERATION

The model 1217 consists of an underspeed control unit and a DC proximity sensor. The unit output relay energizes for a set time interval when it receives one control circuit pulse from the proximity sensor. A pulse consists of one opening and closing of the control circuit. Each pulse resets the time interval to zero, and the output remains energized as long as the monitored motion provides at least two pulses per set time interval. The DC proximity sensor actuates the control circuit.

The time interval is set on the unit's internal timing potentiometer. The unit output relay immediately energizes and remains energized for the set time interval when a metal object leaves the sensing field.

1) The output relay de-energizes after the set time interval completes if a metal object remains out of the sensing field.

2) The output relay de-energizes after the set time interval completes if the metal object enters and remains in the sensing field.

3) The output relay remains energized and the time interval resets to zero and begins timing again if a metal object enters and leaves the sensing field before the set time interval completes.

4) The control unit automatically completes one time interval if a metal object is not present in the sensing field when power is initially applied.

When used as a PLC watchdog the PLC provides the input pulses, application information is included on page 28.

SPECIFICATIONS 1217C

INPUT

VOLTAGE: 120VAC or 24VAC/DC
FREQUENCY: 50/60 Hz
TOLERANCE (VOLTAGE): $\pm 10\%$ of nominal
POWER CONSUMPTION: 10VA maximum
TRANSIENT PROTECTION: Transformer(120V)
MOV(24V)

OUTPUT

TYPE: Electromechanical relay
MECHANICAL LIFE: 10,000,000 operations
ELECTRICAL LIFE: 500,000 operations
RATING: 10A - 1/6 HP at 120VAC, 1/3 HP at 240VAC

FUNCTION

TYPE: Underspeed motion detector/PLC watchdog
TIMING RAMP: 0.06 sec to minimum - 10K ohm/sec
0.5 sec minimum - 100K ohm/sec
TIME RANGES: 0.06 to 100 secs in 7 ranges
RANGE TOLERANCE: $\leq 10\%$ at max, $\leq 0\%$ at min
CONTROL: Isolated contact closure (max. resist. 100 Ω)
or DC proximity switch (ISSC 1217P)
CONTROL TERMINALS: D-E-F
VOLTAGE PRESENT AT CONTROL TERMINALS:
24VDC minimum, 40VDC maximum
CYCLE TIME: Minimum time control circuit closed 2ms
Minimum time control circuit open 50ms
Maximum control circuit pulses/sec 18
SENSING DISTANCE: 0.5 inch

PHYSICAL

OPERATING TEMP: 0° to 50°C (32° -120°F)
TIMER VARIATION VS. TEMPERATURE: $\pm 5\%$ max.
MOUNTING: base mount
TERMINATION: Terminal block on face of timer
HOUSING: Metal

SPECIFICATIONS 1217P

FEATURES

VOLTAGE RANGE: 10-40VDC
MAXIMUM SWITCHING FREQUENCY: 150 pulses/sec
OUTPUT RATING: 100 mA
SENSING DISTANCE: 0.5 inch (12.7mm)
RESIDUAL VOLTAGE: $\leq 0.7V$
SWITCHING MODE: Source/PNP
OUTPUT STATE: N.C.
INDICATOR: LED
OPERATING TEMP: -25° to 75°C (-13° to 167°F)

**ORDERING DATA - COMPLETE UNIT
INCLUDES CONTROL AND PROX SWITCH**

ORDERING CODE 1217 - 1 - G - B - 1

BASIC MODEL NUMBER

1217

INPUT VOLTAGE

1 120VAC

2 24VAC/DC

TIME RANGE in seconds

D 0.06-1.0 H 0.06-25.0

E 0.06-2.5 J 0.06-50.0

F 0.06-5.0 K 0.06-100

G 0.06-10.0

OUTPUT

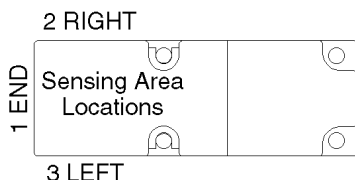
B Relay 1 N.O., 1 N.C.

B1 Relay 2 N.O.

B2 Relay 2 N.C.

LOCATION OF SENSING AREA

- 1 End
- 2 Right
- 3 Left



ORDERING DATA - CONTROL ONLY

ORDERING CODE 1217C - 1 - G - B

BASIC MODEL NUMBER

1217C

INPUT VOLTAGE

1 120VAC

2 24VAC/DC

TIME RANGE in seconds

D 0.06-1.0 H 0.06-25.0

E 0.06-2.5 J 0.06-50.0

F 0.06-5.0 K 0.06-100

G 0.06-10.0

OUTPUT

B Relay 1 N.O., 1 N.C.

B1 Relay 2 N.O.

B2 Relay 2 N.C.

ORDERING DATA - PROX SWITCH ONLY

ORDERING CODE 1217P - 1

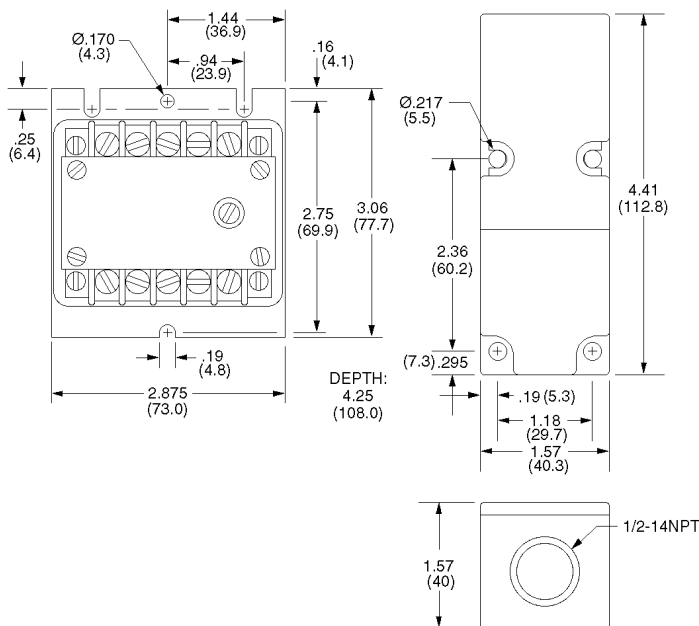
BASIC MODEL NUMBER

1217P

LOCATION OF SENSING AREA

- 1 End
- 2 Right
- 3 Left

DIMENSIONS inches(millimeters)

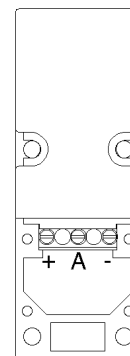
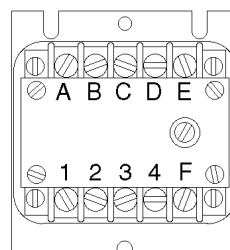


INSTALLATION RECOMMENDATION: The standard unit is insensitive to most induced voltage transients on the control leads (E-F). Although not mandatory, shielding the leads is recommended. Reasonable care should be taken to eliminate control lead runs in conduit or trays with high voltage lines(1000V or greater).

WIRING

Motion Detector

- A-B Voltage input(constant)
- C Not used
- D DC(-) to terminal - on prox sensor
- E Control to Terminal A on prox sensor
- F DC(+) to terminal + on prox sensor
- 1-2 N.O. timed(except B2, N.C.)
- 3-4 N.C. timed(except B1, N.O.)



PLC watchdog timer

- A-B Voltage input(constant)
- C Not used
- D common on PLC
- E +24V pulsed output from PLC
- F not used
- 1-2 N.O. timed(except B2, N.C.)
- 3-4 N.C. timed(except B1, N.O.)

MODEL 1248A
LIMIT STYLE

INDUSTRIAL SOLID STATE
MOTION DETECTOR

(ISSC)
KANSON ELECTRONICS, INC.



Self-contained
Prox sensor and motion detector

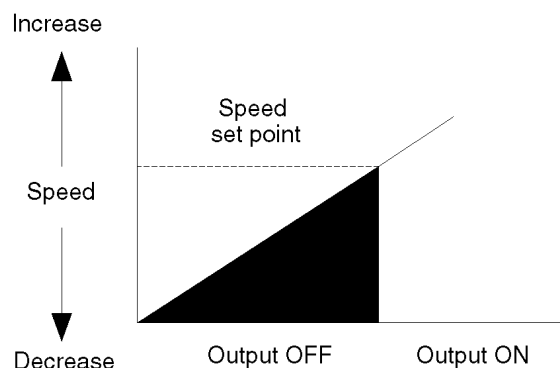
The 1248A is a self-contained combination proximity sensor and speed switch (motion detector) in easy to install limit style unit. Two-wire circuit is wired in same manner as a limit switch. A plug-in receptacle saves wiring time. There are three user selectable speed ranges that cover 5 through 7500 pulses per minute and an adjustable start time delay of 0 to 20 seconds. An LED indicates that the output is energized and a target adjustment mode aids setup.

ORDERING DATA

ORDERING CODE **1248A - 1A4P**

OPERATION

- Output de-energized when monitored motion is below speed set point
- Output energizes when monitored motion reaches or exceeds speed set point
- Energized output will not de-energize until monitored motion drops below speed set point
- Output automatically resets-energizes when monitored speed again reaches speed set point



SPECIFICATIONS

INPUT	VOLTAGE: 20 to 250 VAC/DC
	FREQUENCY: 50/60 Hz or DC
	LEAKAGE: ≤ 2mA
	TRANSIENT PROTECTION: MOV
OUTPUT	MAX. LOAD CURRENT: 500 mA (continuous)
	VOLTAGE: ≤ 9 Volts (with resistive load max. load current)
	MAX. INRUSH CURRENT: 7 A
	MIN. LOAD CURRENT: 5 mA
SENSING	SENSING DISTANCE: 12.7mm (0.5 in)
	TARGET SIZE: 40mm x 40mm mild steel

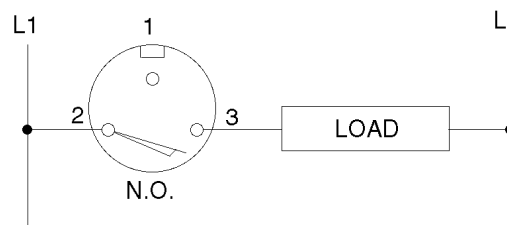
TIMING	SPEED RANGES: 3 (user selectable)
	A = 5 - 75 ppm*
	B = 50 - 750 ppm
	C = 500 - 7500 ppm
	MAX. SPEED at which sensor can detect target: 10,000 ppm
	HYSTERESIS: 10% differential between pickup & dropout speeds.
	RESPONSE TIME: All speed ranges 3 msec / 3 msec (target present / target absent)
	DELAY IN READINES: 100 msec (with start up delay at zero)
START UP TIME DELAY: 0 - 20 seconds. (user adjustable)	

*ppm = speed (RPM) X number of targets

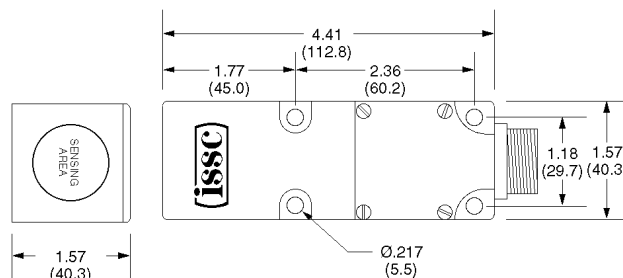
PHYSICAL	TEMPERATURE RANGE: -25°C to +70°C
	HOUSING MATERIAL: Fire-retardant ABS/polycarbonate blend
	ENVIRONMENTAL RATING: NEMA 1,3,4,6,12,13,IP67
	TERMINATION: 3-Pin mini-style connector
	ACCESSORIES

2 m cable with connector RP-503
5 m cable with connector RP-503-5

WIRING



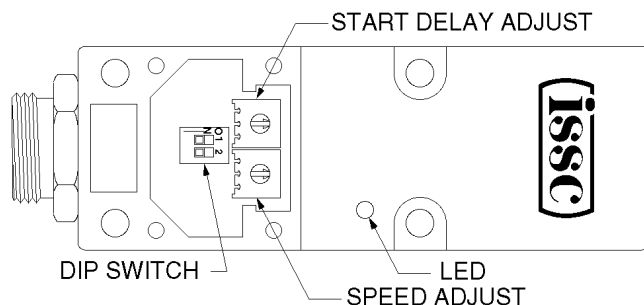
DIMENSIONS millimeters



ADJUSTMENTS

Initial Start Time Delay (0-20 Sec., Adjustable)

The 1248A is supplied with an initial start time delay which energizes the output for the time specified when power is applied to the unit. This feature provides time at start-up for the monitored equipment to reach a speed that will maintain an energized output. The output de-energizes if the speed of the monitored equipment fails to reach the set point by the end of this delay. Removing and reapplying power resets the initial time delay.



DIP switch range selection

The DIP switch selects one of the three ranges or test mode. The switches can be changed without removing power from the device. When the test mode is selected, the 1248A emulates a standard prox switch. The output comes on when the target is present. If power is applied with the switches set for test mode the 1248A enters a factory test mode. Turn off power and set switches to off to exit.

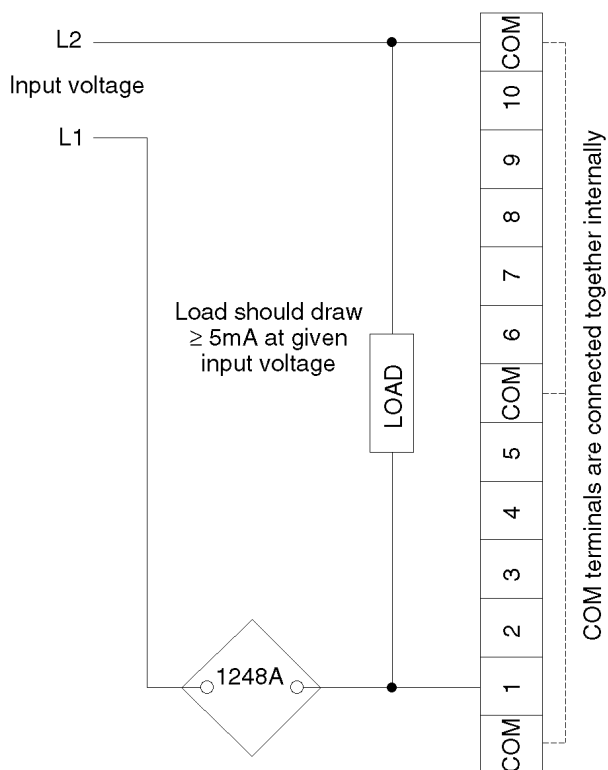
RANGE	SPEED ppm	SWITCH	
		1	2
A	5-75	OFF	OFF
B	50-750	ON	OFF
C	500-7500	OFF	ON
TEST	-	ON	ON

SPECIAL CONSIDERATIONS FOR PLC APPLICATIONS

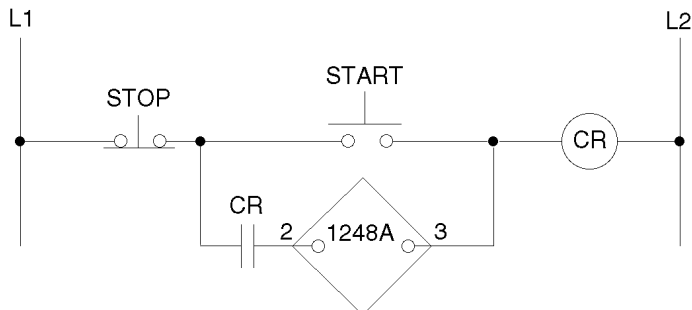
When using the model 1248A as a direct input to a PLC, the minimum load current specification of 5mA must be taken into consideration. Most of today's PLC's have a very high input impedance which does not allow enough current for the 1248A to operate properly.

The solution to this problem is to parallel a load (a resistor or indicator lamp) with the PLC input.

Typical PLC Application Example:



APPLICATION EXAMPLE



NOTE: This circuit requires the start time delay to be adjusted for no less than 1/2 sec.

See your PLC User's Manual for specific wiring details.

Courtesy of Steven Engineering, Inc. • 230 Ryan Way, South San Francisco, CA, 94080-6370 • Main Office: (650) 588-9200 • Outside Local Area: (800) 258-9200 • www.stevenengineering.com

MODEL 1260 BASE MOUNT

INDUSTRIAL SOLID STATE MOTION DETECTOR

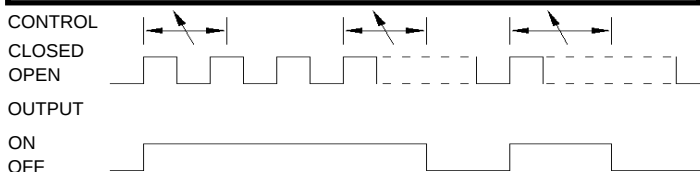
(ISSC)
KANSON ELECTRONICS, INC.



Underspeed Detection

AC Control Circuit is compatible with standard mechanical switches, solid state proximity sensors, and 120 VAC pulses.

OPERATION



Closing the control circuit energizes the output. Opening and reclosing the control circuit before the set time interval completes keeps the output energized, and it remains energized as long as the monitored motion continues to provide at least two pulses per set time interval. If the monitored motion stops, the output de-energizes after the set time interval completes, even if motion stops in such a way that the control circuit remains closed.

ORDERING DATA

ORDERING CODE 1260 - 1 - K - C

BASIC MODEL NUMBER

1260

INPUT VOLTAGE

1 120VAC

TIME RANGE (Secs)

A 0.06-0.10	F 0.06-5.0	L 0.5-250
B 0.06-0.25	G 0.06-10.0	M 0.5-500
C 0.06-0.50	H 0.06-25.0	W Fixed time
D 0.06-1.0	J 0.5-50.0	(see note)
E 0.06-2.5	K 0.5-100	

NOTE: Specify W and desired fixed time.
Factory will set time within 5%

OUTPUT

B Relay 1 N.O., 1 N.C.
C Solid State 1 N.O., 1.5 amps AC

APPLICABLE ACCESSORIES

See accessory section for details

Potentiometers	RP-201 thru RP-210
Reference dial	RP-216
Locking attachment	RP-217

SPECIFICATIONS

INPUT

VOLTAGE: 120VAC
FREQUENCY: 50/60 Hz
TOLERANCE (VOLTAGE): $\pm 10\%$ of nominal
POWER CONSUMPTION: 10 VA maximum
TRANSIENT PROTECTION: Isolation transformer

OUTPUT

TYPE: Electromechanical relay or solid state
RATING: 1.5A @ 120 VAC (solid state)
10A @ 240VAC maximum (electromechanical)

FUNCTION

TYPE: Motion detector
REPEAT ACCURACY: $\pm 1/2\%$ of setting
INDICATION: LED indicates unit timing and output energized
TIMING RAMP: 0.06 sec minimum time - 100k Ω /sec
0.5 sec minimum time - 10k Ω /sec
TIME RANGE: 0.06 to 500 secs in 12 ranges
RANGE TOLERANCE: $\leq 10\%$ at maximum,
 $\leq 0\%$ at minimum
CONTROL: Isolated contact closure or AC prox switch
CONTROL TERMINALS: P1-P2-L2
VOLTAGE PRESENT AT CONTROL TERMINALS:
P1-P2: Same as input voltage
L2-P2: 120VAC pulse
CYCLE TIME: Min. time control circuit closed 8 msec
Min. time control circuit open 16 msec
Max. control circuit pulses/sec 40

PHYSICAL

OPERATING TEMP: -32° to 71° C (-25° to 160°F)
TIMING VARIATION VS. TEMP: $\pm 3\%$ maximum
MOUNTING: Base mount
TERMINATION: Terminal block on face of timer
HOUSING: Metal

WIRING

OUTPUT B

L1-L2 Voltage input (constant)
P1-P2 Control
L2-P2 120VAC Pulse
Output as shown: N.O. timed
N.C. timed

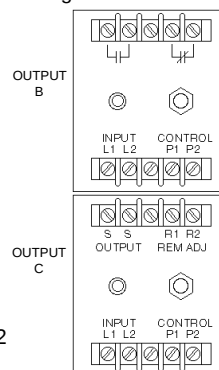
Caution: Never apply voltage to P1
(L1 internally jumpered to P1)

OUTPUT C

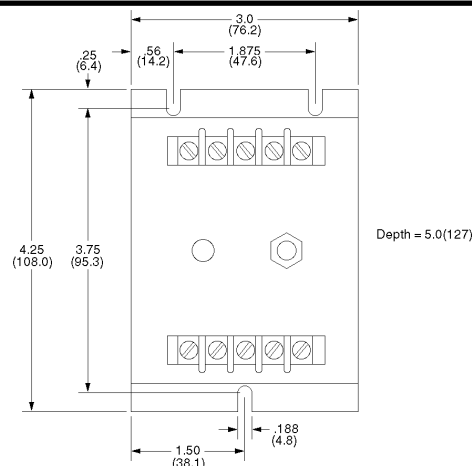
L1-L2 Voltage input (constant)
P1-P2 Control
L2-P2 120VAC Pulse
R1-R2 Remote adjust (jumper if not used)
S1-S2 N.O. solid state, timed

Caution: Never apply voltage to P1-R1-R2
(L1 internally jumpered to P1)

Wiring Terminal Location



DIMENSIONS



Adjusting Set Time Interval

A timing potentiometer sets the time interval. It is necessary to calculate the period of time between pulses to determine the correct time setting.

1) Determine minimum operating speed. This is the speed at which the output energizes. Any greater speed also maintains an energized output. Any slower speed de-energizes the output.

2) Determine pulse/sec ratio provided by minimum operating speed.

example: 2 pulses/sec

3) Determine time interval between pulses.

example: 2 pulses/sec = 1 pulse/0.5 sec

4) Adjust timing potentiometer to a setting slightly greater than 0.5 sec. Minimum operating speed (1 pulse/0.5 sec) will provide 2 pulses in a time interval slightly greater than 0.5 sec and maintain an energized output. Any speed less than the minimum operating speed will not provide two pulses per set time interval, and the unit's output will de-energize.

5) Select a time range, when ordering a 1262, in which the set time interval for minimum operating speed falls midrange. This provides better time setting resolution.

example: Set time interval - 0.55 sec

Select time range "D" - 0.06-1.0 sec

SPECIFICATIONS

VOLTAGE: 120VAC
FREQUENCY: 50/60 Hz
TOLERANCE (VOLTAGE): ± 10% of nominal
POWER CONSUMPTION: 10 VA maximum
TRANSIENT PROTECTION: Isolation transformer

TYPE: Electromechanical relay
RATING: 10A - 1/6 HP at 120VAC, 1/3 HP at 240VAC

TYPE: Motion detector
REPEAT ACCURACY: ± 1% of setting
INDICATION: LED indicates unit timing and output energized
TIMING RAMP: 0.02 sec minimum time - 1MΩ/sec
 0.06 sec minimum time - 100KΩ/sec
 0.5 sec minimum time - 10KΩ/sec
TIME RANGE: 0.02 to 1000 secs in 13 ranges
RESPONSE TIME: Set time interval
HYSTERISIS: ~5% between pick-up and drop-out speeds
RANGE TOLERANCE: ≤ 10% at max, ≤ 0% at min
CONTROL TERMINALS: A-B-C-D-E-F
VOLTAGE PRESENT AT CONTROL TERMINALS:
 A - C : Same as input voltage
 B - C : 120VAC pulse
 D - E - F : 12VDC
 D - E : 12VDC pulse

CYCLE TIME:

Time Range		AC Control	DC Control
A-C	Minimum time control circuit closed	8 msec	0.1 msec
	Minimum time control circuit open	16 msec	0.45 msec
	Maximum control circuit pulses/sec	40	1800
D-H	Minimum time control circuit closed	8 msec	0.1 msec
	Minimum time control circuit open	16 msec	5 msec
	Maximum control circuit pulses/sec	40	200
J-N	Minimum time control circuit closed	8 msec	8 msec
	Minimum time control circuit open	42 msec	42 msec
	Maximum control circuit pulses/sec	20	20

OPERATING TEMP: 0° to 50° C (32° to 122°F)
TIMING VARIATION VS. TEMP: ± 5% maximum
MOUNTING: Base mount
TERMINATION: Terminal block on face of timer
HOUSING: Metal



Underspeed or Overspeed Detection

Output Energizes only when running speed is reached.

AC Control Circuit is compatible with standard mechanical switches, solid state proximity sensors, and 120VAC pulse.

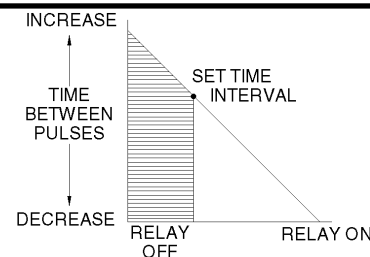
DC Control Circuit is compatible with solid state source or sink proximity sensors.

MSHA Investigation No. IA-137. The 1262 used in conjunction with the ISSC 1221 proximity sensor (see page 40) is approved by the Mine Safety and Health Administration.

CSA File No. LR92815

OPERATION

The output is de-energized when the monitored motion provides less than two pulses per set time interval. The output energizes when the monitored motion reaches or exceeds two pulses per set time interval. Once energized, the output will not de-energize until the monitored motion drops to less than two pulses per set time interval. The output automatically resets and the output energizes, when the monitored speed again matches two pulses per set time interval.



Initial Start Time Delay

The 1262 can be supplied with an initial start time delay which energizes the output for the time specified when the power is applied to the unit. This feature provides time at start up for the monitored equipment to reach a speed that will maintain an energized output. The output will de-energize, if the speed of the monitored equipment fails to reach the set point by the end of this delay. Removing and reapplying power resets the initial time delay.

MODEL 1262 BASE MOUNT

INDUSTRIAL SOLID STATE MOTION DETECTOR

(ISSC)
KANSON ELECTRONICS, INC.

ORDERING DATA

ORDERING CODE 1262 - 1 - L - D - B - OP3(10)

BASIC MODEL NUMBER

1262

INPUT VOLTAGE

1 120VAC

DETECTION MODE

L Underspeed

TIME RANGE (Secs)

A 0.02-0.10 F 0.06-5.0 L 0.5-250
B 0.02-0.25 G 0.06-10.0 M 0.5-500
C 0.02-0.50 H 0.06-25.0 N 0.5-1000
D 0.06-1.0 J 0.5-50.0 W Fixed time
E 0.06-2.5 K 0.5-100 (see note)

NOTE: Specify W and desired fixed time.
Factory will set time within 5%

OUTPUT

B Relay 1 N.O., 1 N.C.
B1Relay 2 N.O.
B2Relay 2 N.C.

OPTION (If desired)

OP3(t) Initial start time delay. Specify in parentheses time selected from below.

1 sec 10 secs
5 secs 25 secs

SPECIAL MODEL for PLC WATCHDOG applications

ORDER NUMBER 1262-PC

0.06-2.5 second timeout

2 second start-up delay

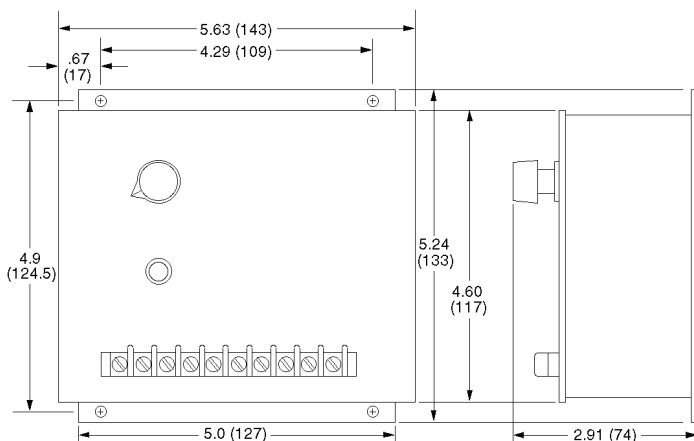
Relay output 1 N.O., 1 N.C.

APPLICABLE ACCESSORIES

See accessory section for details

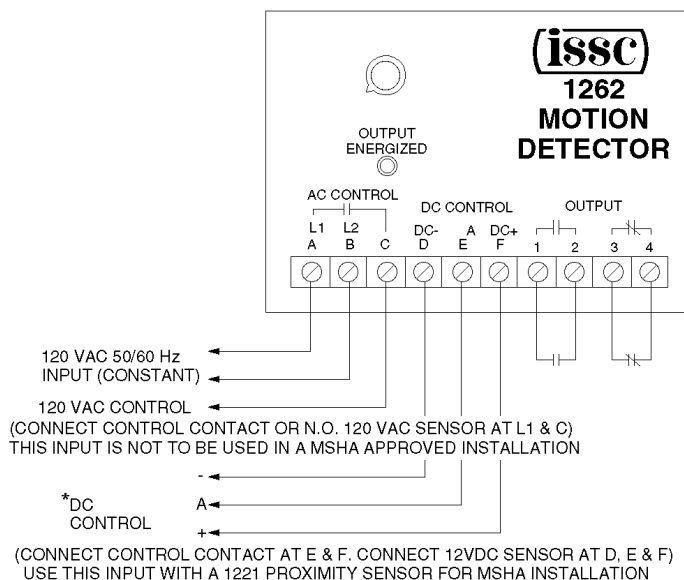
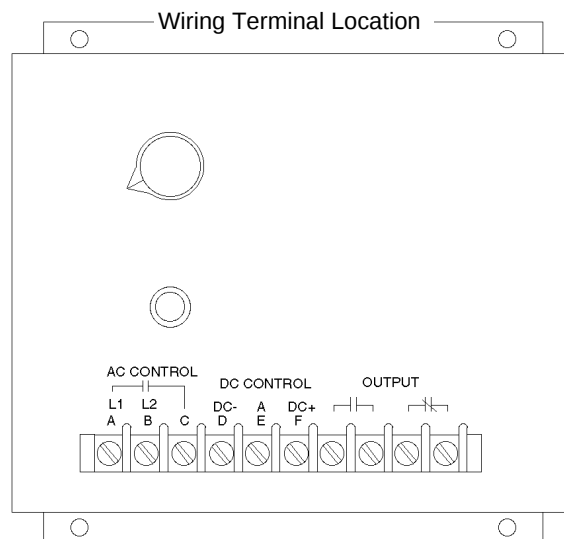
Locking attachment RP-217

DIMENSIONS Inches (millimeters)



WIRING

- A-B Voltage input (constant)
- A-C AC Control — mechanical contact or prox sensor
- B-C AC Control — 120VAC Pulse
- D-E-F DC Control — source or sink* prox sensor
- D- (DC-) common for prox sensor
- E- (A) input for prox sensor
- F- (+ 12VDC) supplied to prox sensor
- D-E 12VDC Pulse
- D- (DC-) Common
- E- (+12VDC) Supplied by sourcing output
- E-F DC Control — mechanical contact
- *When using sink prox sensor, install 1200 ohm pull-up resistor (supplied with unit) at E-F.
- 1-2 N.O. (except B2, N.C.)
- 3-4 N.C. (except B1, N.O.)



*NOTE: TO USE ISSC DC PROXIMITY SWITCH 1221 (N.O.), A 1200 Ω PULL-UP RESISTOR (SUPPLIED WITH UNIT) MUST BE INSTALLED AT TERMINALS E & F. (SEE DWG. G2693).

MODEL 1110C

PANEL or PC BOARD/ MOUNT

INDUSTRIAL SOLID STATE DIGITAL COUNTER

(issc)

KANSON ELECTRONICS, INC.

SPECIFICATIONS

INPUT POWER
BATTERY: 6 year life
Easily replaced
Environmentally friendly
BACKLIGHT: Requires 24vdc (+/-10%)

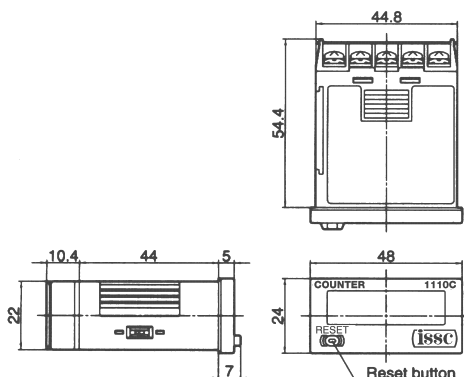
COUNTER INPUT
TYPE: Non - Voltage
4.5 to 30 VDC
24 to 240VAC/DC
SPEED: 30/sec or 2000/sec

COUNTING
MODE: Addition (Counting up) with remote reset
DISPLAY: 8 digit LCD

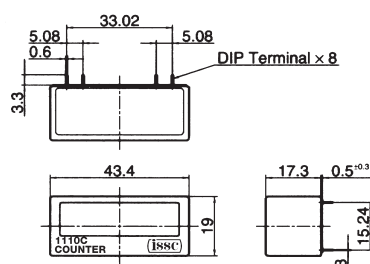
PHYSICAL
VIBRATION RESISTANCE:
Functional: 10 to 55 Hz: 1 cycle/min single amplitude of 0.15 mm (10 min on 3 axes)
Destructive: 10 to 55 Hz: 1 cycle/min single amplitude of 0.375 mm (1 h on 3 axes)
SHOCK RESISTANCE:
Functional: Min. 98m/s² {10G} (4 times on 3 axes)
Destructive: 294m/s² {30G} (5 times on 3 axes)
OPERATING TEMPERATURE: -10° to 55° C (14° to 131°F)
STORAGE TEMPERATURE: -25° to 65° C (-13° to 145°F)
(Protect from moisture condensing or freezing at low temperatures)
OPERATING HUMIDITY: 35 TO 85% RH
TERMINATION: Screw terminals
HOUSING: Polycarbonate

DIMENSIONS millimeters

Flush mounting type



PC board mounting type



Panel mount clamp requires 15.5 mm clearance above and below counter behind panel.



Digital Counter



FEATURES:

- Large, 8 digit LCD display
- 2kHz or 30Hz counter speeds
- Three Input methods
- Replacable long life battery
- Backlighted display available
Switchable Red or Green
- PC Board mounting available

ORDERING DATA

ORDERING CODE 1110C — 1 — P — 1 — N

BASIC MODEL NUMBER 1110C

INPUT SIGNAL

- 1 Non-Voltage Input
- 2 24 to 240VAC/DC
- 3 4.5 to 30 VDC

MOUNT

F Flush Mounting Type
P PC Board Mounting Type

COUNTING SPEED

- 1 2kHz
- 2 30Hz
- 3 2kHz/30Hz Switchable

BACKLIGHT

B Backlight
N No light

ACCESSORIES See accessory section for details
Panel mount clamp RP-325(one included with 1110C)

AVAILABILITY

PC Mounting Type only available
with Non-Voltage Input
without switchable counting speed
without reset button
without backlight

Backlight option only available
with switchable counting speed
with 4.5 to 30 VDC

24 to 240 VAC/DC only available with 30Hz counter speed

MODEL 1120H
DC TYPE HOUR METER

**INDUSTRIAL SOLID STATE
CONTROLS**

(issc)
KANSON ELECTRONICS, INC.



**Hour
Meter**



SPECIFICATIONS

INPUT POWER
VOLTAGE: 12 or 24 VDC
VOLTAGE RANGES: 10.2 < 12 < 15.6 VDC
20.4 < 24 < 31.2 VDC
POWER CONSUMPTION: 1.5 W at 25° C

TIME
RANGE: 0.0 to 9999.9 Hours
MINIMUM DISPLAY: 6 Minutes

PHYSICAL
VIBRATION RESISTANCE:
10 to 55 Hz: 1 cycle/min double amplitude
of 0.5 mm (10 min on 3 axes)
SHOCK RESISTANCE:
Functional: Min. 98m/s² (4 times on 3 axes)
Destructive: 980m/s² (4 times on 3 axes)
OPERATING TEMPERATURE: -20° to 60° C (-4° to 140°F)
OPERATING HUMIDITY: 45 TO 85% RH
TERMINATION: Screw terminals
CONSTRUCTION: IP66 Compliant at panel face

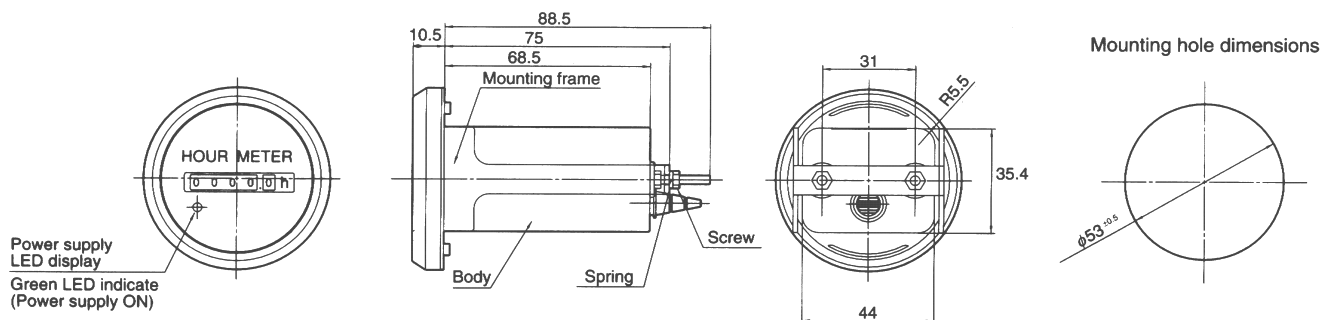
FEATURES:

- Ideal for scheduling maintenance on a variety of equipment
- DC powered
- Suitable for harsh environments
IP66 Compliant
- High performance compact sync motor
- Ultra-accurate quartz oscillator

ORDERING DATA

ORDERING CODE 1120H — 1
BASIC MODEL NUMBER 1120H
INPUT VOLTAGE
1 12 VDC
2 24 VDC

DIMENSIONS millimeters





DC Limit Style

FEATURES

The 1221 is a low cost limit style DC, three wire, proximity switch. When used with the 1262 provides a MSHA approved motion sensing system.

ORDERING DATA

ORDERING CODE **1221 - 1 - A - 1 - A**

The 1221 is currently only available as an end sensing, NPN sinking, normally open output, 10- 26 VDC unit.

SPECIFICATIONS

INPUT

VOLTAGE: 10 to 26 VDC,10% ripple allowed

SUPPLY CURRENT: $\leq 20 \text{ mA}$

TRANSIENT PROTECTION: MOV

OUTPUT

MAX. LOAD CURRENT: 100 mA (continuous)

SENSING

SENSING DISTANCE: 14.29 mm (0.56 in)

REPEATABILITY: ± 5 mm (0.02 in)

HYSTERESIS: 3.18 mm (0.12 in)

TARGET SIZE: 40mm x 40mm x 1mm mild steel

SWITCHING FREQUENCY: 1.0 kHz maximum

RANGE DERATING:

Chrome-nickel	0.9
---------------	-----

Brass	0.5
-------	-----

Brass	0.9
Aluminum	0.45

Copper	0.4
--------	-----

PHYSICAL

OPERATING TEMP: -20°C to +65°C (-4°F to +149°F)

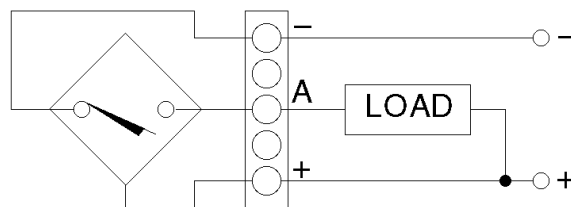
HOUSING MATERIAL: Fire-retardant

ABS/polycarbonate blend

ENVIRONMENTAL RATING: NEMA 1,3,4,6,12,13,IP67

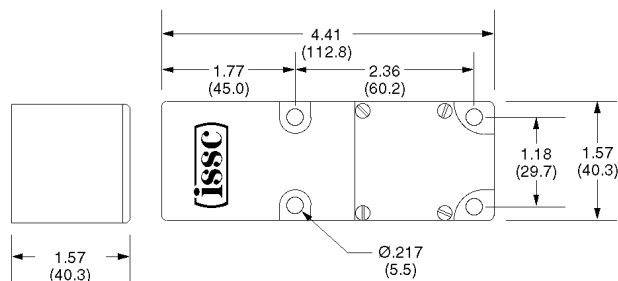
TERMINATION: Internal terminal block

WIRING



WIRING TO INTERNAL TERMINAL STRIP

DIMENSIONS inches(millimeters)





KANSON ELECTRONICS, INC.

INDUSTRIAL SOLID STATE PROXIMITY SWITCH

MODEL 1250
LIMIT STYLE

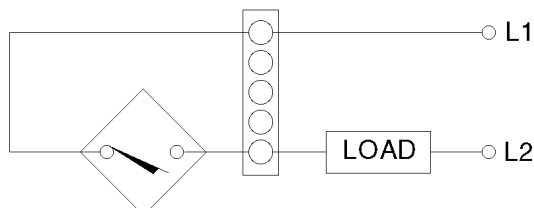
SPECIFICATIONS

INPUT	VOLTAGE: 20 to 250 VAC/DC
	FREQUENCY: 50/60 Hz or DC
	LEAKAGE: $\leq 2\text{mA}$
	TRANSIENT PROTECTION: MOV
OUTPUT	MAX. LOAD CURRENT: 500 mA (continuous)
	VOLTAGE: $\leq 9\text{ Volts}$ (with resistive load max. load current)
	MAX. INRUSH CURRENT: 7 A
	MIN. LOAD CURRENT: 5 mA
SENSING	SENSING DISTANCE: 12.7mm (0.5 in)
	TARGET SIZE: 40mm x 40mm mild steel
	SWITCHING FREQUENCY: 166 Hz maximum
PHYSICAL	TEMPERATURE RANGE: -25°C to $+70^{\circ}\text{C}$
	HOUSING MATERIAL: Fire-retardant ABS/polycarbonate blend
	ENVIRONMENTAL RATING: NEMA 1,3,4,6,12,13,IP67
	TERMINATION: Internal terminal block or external 3-Pin mini-style connector

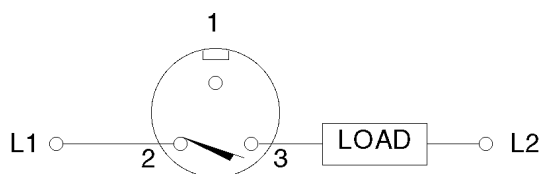


AC Limit Style

WIRING

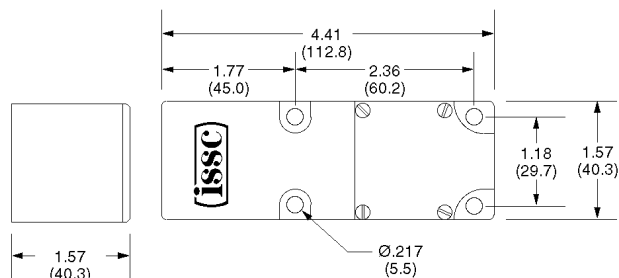


WIRING FOR INTERNAL TERMINAL STRIP



WIRING WITH EXTERNAL CONNECTOR

DIMENSIONS inches(millimeters)

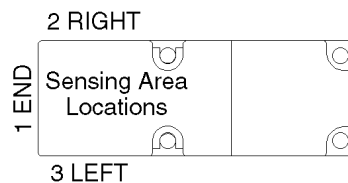


FEATURES

The 1250 is a low cost limit style proximity switch using the same proven detection circuitry as our 1248A. Featuring a 20-250 VAC/DC universal input voltage and a simple two-wire connection. It is available with end, left or right sensing. Other options are a normally open or normally closed output and either an internal terminal block or a factory installed connector.

ORDERING DATA

ORDERING CODE	1250 - 1 - A - 1
BASIC MODEL NUMBER	1250
LOCATION OF SENSING AREA	1 End 2 Right 3 Left
OUTPUT CONFIGURATION	A Normally open B Normally closed
TERMINATION	1 Terminal block inside cover 2 Connector on end of housing



MODEL TMS-D
CYLINDRICAL

INDUSTRIAL SOLID STATE
PROXIMITY SWITCH

(ISSC)
KANSON ELECTRONICS, INC.



Magnet Activated

FEATURES

The **TMS-Ds** a compact, tubular magnet sensor offers a high sensitivity to magnetic field and a high switching speed. Many types of magnets including electromagnets can be used for actuation. Sourcing and sinking options in both normally open and normally closed configurations are offered, reverse polarity protection is included on all models.

ORDERING DATA

ORDERING CODES

- TMS - D101** N.C. NPN sinking output
- TMS - D102** N.O. NPN sinking output
- TMS - D103** N.C. PNP sourcing output
- TMS - D104** N.O. PNP sourcing output

SPECIFICATIONS

INPUT

VOLTAGE: 9 to 26 VDC, 10% ripple allowed
SUPPLY CURRENT: ≤ 20 mA @ 24VDC

OUTPUT

MAX. LOAD CURRENT: 100 mA (continuous)
VOLTAGE DROP: ≤ 2 VDC

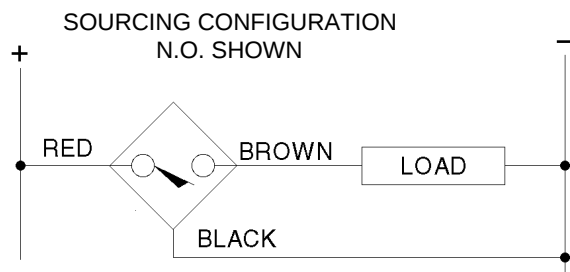
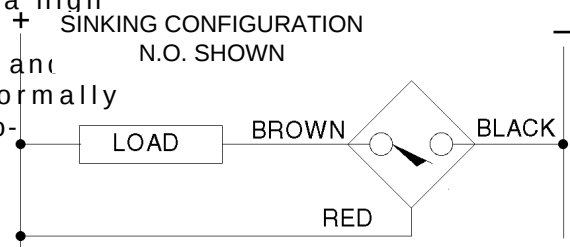
SENSING

SENSING DISTANCE: up to 1 inch
FIELD STRENGTH TO ACTUATE: ≥ 30 Gauss
SWITCHING FREQUENCY: 50 kHz (resistive load)

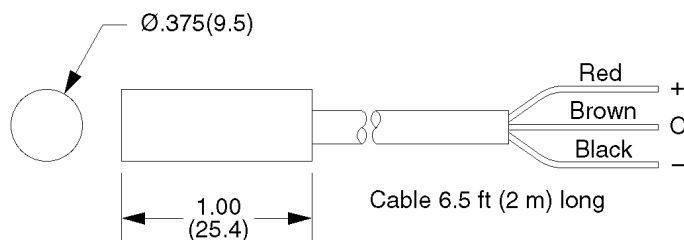
PHYSICAL

TEMPERATURE RANGE: -40°C to $+85^{\circ}\text{C}$
HOUSING MATERIAL: Diallyl Phthalate
ENVIRONMENTAL RATING: NEMA 1, 3, 4, 4x, 6, 13, IP67
TERMINATION: 2m PVC insulated cable 3x24 AWG

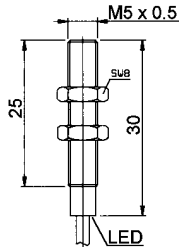
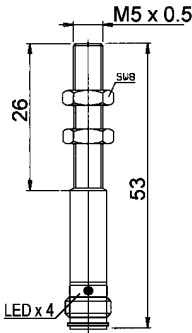
WIRING



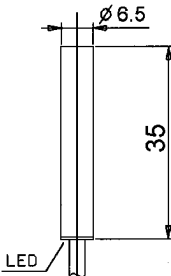
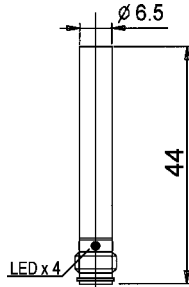
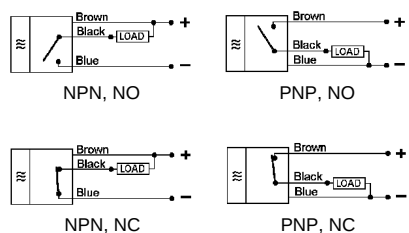
DIMENSIONS inches(millimeters)

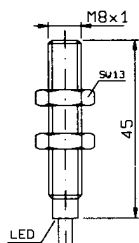
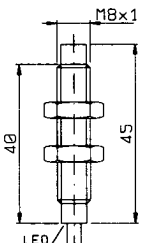
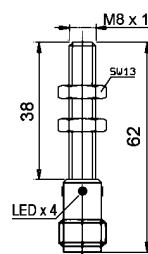
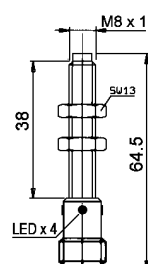
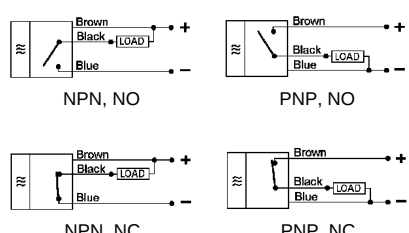


Output Function	NPN, NO	T04-D310-F
	PNP, NO	T04-D410-F
	NPN, NC	T04-D510-F
	PNP, NC	T04-D610-F
4 mm Diameter Unthreaded body with cable. NPN, NO PNP, NO NPN, NC PNP, NC		
Operating Distance	0.8 mm	
Power Supply	10 - 30 VDC	
Power Drain	< 5 mA	
Voltage Drop (on state)	< 3 V	
Switching Current (max)	150 mA max.	
Short Circuit Protection	No	
Operating Frequency	3 kHz max.	
Repeatability	not specified	
Case	Stainless Steel	
Flush Mounting	Yes	
Protection Degree	IP 67	
Operating Temperature	-25°C to +70°C	
Output Connection	Cable: PVC, 22 AWG, 2 m long	

Output Function	NPN, NO	T05-D310-F	T05-D313-F
	PNP, NO	T05-D410-F	T05-D413-F
	NPN, NC		T05-D513-F
	PNP, NC		T05-D613-F
5 mm Diameter Threaded body with cable or integral connector to simplify installation.			
Operating Distance		0.8 mm	
Power Supply		10 - 30 VDC	
Power Drain		< 5 mA	
Voltage Drop (on state)		< 3 V	
Switching Current (max)		150 mA max.	
Short Circuit Protection		No	
Operating Frequency		3 kHz max.	
Repeatability		not specified	
Case		Stainless Steel	
Flush Mounting		Yes	
Protection Degree		IP 67	
Operating Temperature		-25°C to +70°C	
Output Connection		Cable: PVC, 22 AWG, 2 m long	Connector

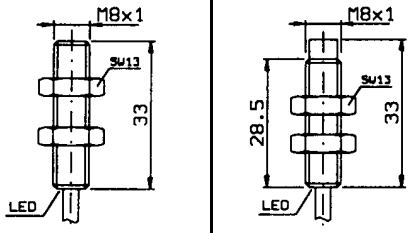
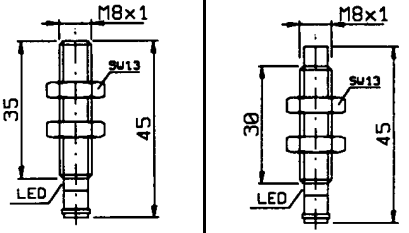
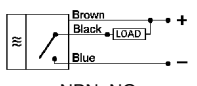
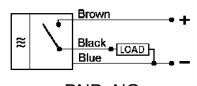
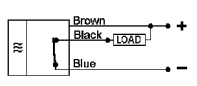
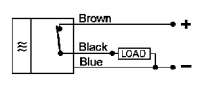


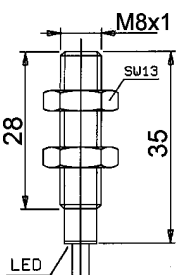
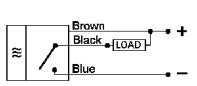
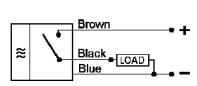
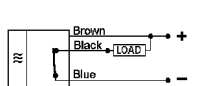
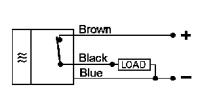
Output Function	NPN, NO	XT06-D310-F	XT05-D313-F
	PNP, NO	XT06-D410-F	XT05-D413-F
	NPN, NC	XT06-D510-F	XT05-D513-F
	PNP, NC	XT06-D610-F	XT05-D613-F
6.5 mm Diameter Extended Operating Distance Unthreaded body with cable or integral connector to simplify installation.			
			
Operating Distance		2.0 mm	
Power Supply		10 - 30 VDC	
Power Drain		< 12 mA	
Voltage Drop (on state)		< 1.8 V	
Switching Current (max)		200 mA max.	
Short Circuit Protection		Yes	
Operating Frequency		2 kHz max.	
Repeatability		< 0.01 mm	
Case		Stainless Steel	
Flush Mounting		Yes	
Protection Degree		IP 67	
Operating Temperature		-25°C to +70°C	
Output Connection		Cable: PVC, 22 AWG, 2 m long	Connector

Output Function	NPN, NO	T08-D310-F	T08-D360-F	T08-D318-F	T08-D368-F
	PNP, NO	T08-D410-F	T08-D460-F	T08-D418-F	T08-D468-F
	NPN, NC			T08-D518-F	T08-D568-F
	PNP, NC			T08-D618-F	T08-D668-F
8 mm Diameter Threaded body with cable or integral connector to simplify installation.					
					
Operating Distance		1.0 mm	2.0 mm	1.5 mm	2.0 mm
Power Supply				10 - 30 VDC	
Power Drain		< 5 mA			< 15 mA
Voltage Drop (on state)				< 1.8 V	
Switching Current (max)				200 mA max.	
Short Circuit Protection				Yes	
Operating Frequency				2 kHz max.	
Repeatability		not specified			< 0.01 mm
Case				Stainless Steel	
Flush Mounting		Yes	No	Yes	No
Protection Degree				IP 67	
Operating Temperature				-25°C to +70°C	
Output Connection		Cable: PVC, 22 AWG, 2 m long		Connector	

Electronic Proximity Sensors

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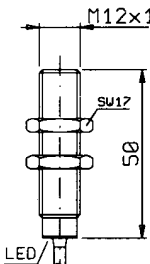
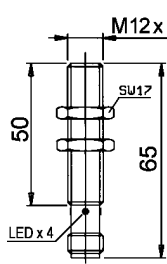
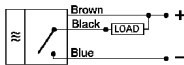
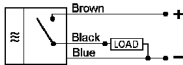
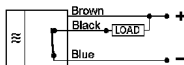
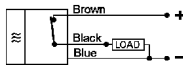
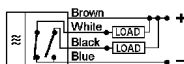
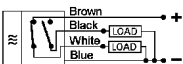
Output Function	NPN, NO	T08-D310S-F	T08-D360S-F	T08-D313S-F	T08-D363S-F
	PNP, NO	T08-D410S-F	T08-D460S-F	T08-D413S-F	T08-D463S-F
	NPN, NC	T08-D510S-F	T08-D560S-F	T08-D513S-F	T08-D563S-F
	PNP, NC	T08-D610S-F	T08-D660S-F	T08-D613S-F	T08-D663S-F
8 mm Diameter Short Body Threaded body with cable or integral connector to simplify installation. This series features greater miniaturization, increased sensing distance and 5V logic compatibility.					
 NPN, NO		 PNP, NO			
 NPN, NC		 PNP, NC			
Operating Distance		1.5 mm	3.0 mm	1.5 mm	3.0 mm
Power Supply		5 - 30 VDC			
Power Drain		< 10 mA			
Voltage Drop (on state)		< 1.7 V			
Switching Current (max)		200 mA max.			
Short Circuit Protection		Yes			
Operating Frequency		1 kHz max.			
Repeatability		not specified			
Case		AISI 303 Stainless Steel			
Flush Mounting		Yes	No	Yes	No
Protection Degree		IP 67			
Operating Temperature		-25°C to +75°C			
Output Connection		Cable: PVC, 22 AWG, 2 m long		Connector	

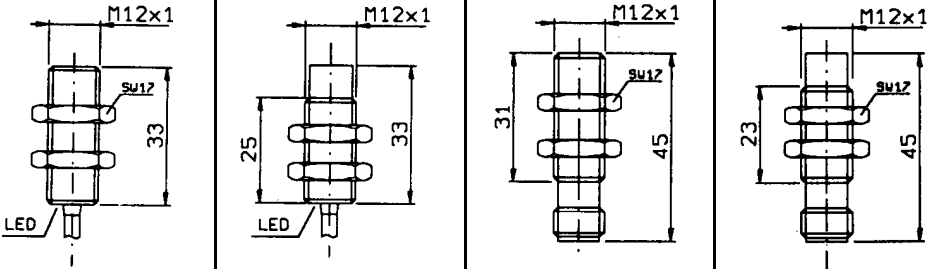
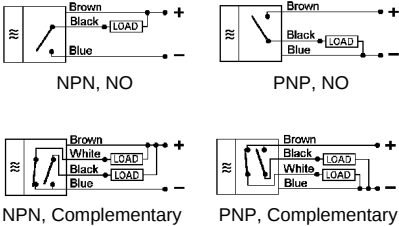
Output Function	NPN, NO	XT08-D310-F	XT08-D313-F
	PNP, NO	XT08-D410-F	XT08-D413-F
	NPN, NC	XT08-D510-F	XT08-D513-F
	PNP, NC	XT08-D610-F	XT08-D613-F
8 mm Diameter Extended Operating Distance Threaded body with cable or integral connector to simplify installation.			
 NPN, NO		 PNP, NO	
 NPN, NC		 PNP, NC	
Operating Distance		2.0 mm	
Power Supply		10 - 30 VDC	
Power Drain		< 12 mA	
Voltage Drop (on state)		< 1.8 V	
Switching Current (max)		200 mA max.	
Short Circuit Protection		Yes	
Operating Frequency		2 kHz max.	
Repeatability		< 0.01 mm	
Case		Stainless Steel	
Flush Mounting		Yes	
Protection Degree		IP 67	
Operating Temperature		-25°C to +70°C	
Output Connection		Cable: PVC, 22 AWG, 2 m long	Connector

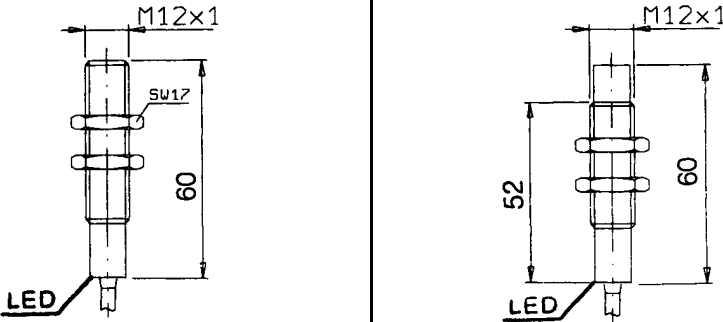


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Electronic Proximity Sensors

Output Function	NPN, NO	T12-D310-F	T12-D360-F	T12-D318-F	T12-D368-F
	PNP, NO	T12-D410-F	T12-D460-F	T12-D418-F	T12-D468-F
	NPN, NC			T12-D518-F	T12-D568-F
	PNP, NC			T12-D618-F	T12-D668-F
	NPN, Complementary	T12-D010-F	T12-D060-F	T12-D018-F	T12-D068-F
	PNP, Complementary	T12-D710-F	T12-D760-F	T12-D718-F	T12-D768-F
12 mm Diameter Threaded body with cable or integral connector to simplify installation. LED indicators on all models. Short circuit and reverse polarity protection standard on three-wire models. Available with complementary NO and NC outputs. These models conform to EN 50008-EN50044 and meet the CE EMC directive.					
 NPN, NO		 PNP, NO			
 NPN, NC		 PNP, NC			
 NPN, Complementary		 PNP, Complementary			
Operating Distance	2.0 mm		4.0 mm		2.0 mm
Power Supply	10 - 30 VDC				
Power Drain	< 5 mA		< 18 mA		
Voltage Drop (on state)	< 3 V		< 1.8 V		
Switching Current (max)	200 mA				
Short Circuit Protection	Yes (3 wire only)				
Operating Frequency	1.0 kHz max.				
Repeatability	not specified		< 0.01 mm		
Case	Nickel-plated Brass				
Flush Mounting	Yes	No	Yes	No	No
Protection Degree	IP 67				
Operating Temperature	-25°C to +70°C				
Output Connection	Cable: PVC, 22 AWG, 2 m long			Connector	

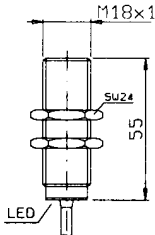
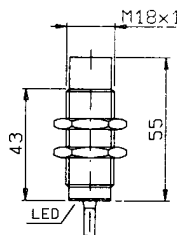
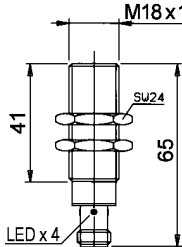
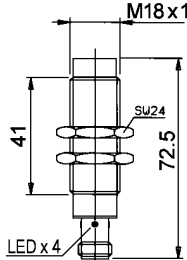
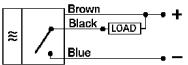
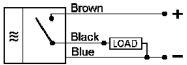
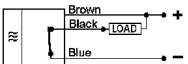
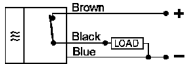
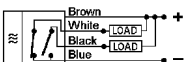
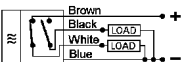
Output Function	NPN, NO	T12-D310S-F	T12-D360S-F	T12-D318S-F	T12-D368S-F
	PNP, NO	T12-D410S-F	T12-D460S-F	T12-D418S-F	T12-D468S-F
	NPN, Complementary	T12-D010S-F	T12-D060S-F	T12-D018S-F	T12-D068S-F
	PNP, Complementary	T12-D710S-F	T12-D760S-F	T12-D718S-F	T12-D768S-F
12 mm Diameter Short Body Threaded body with cable or integral connector to simplify installation. This series features greater miniaturization, increased sensing distance and 5V logic compatibility. LED indicators on all models. Available with complementary NO and NC outputs.					
					
Operating Distance		3.0 mm	5.0 mm	3.0 mm	5.0 mm
Power Supply		5 - 30 VDC			
Power Drain		< 10 mA			
Voltage Drop (on state)		< 1.7 V			
Switching Current (max)		200 mA max.			
Short Circuit Protection		No			
Operating Frequency		1 kHz max.			
Repeatability		not specified			
Case		Nickel-Plated Brass			
Flush Mounting		Yes	No	Yes	No
Protection Degree		IP 67			
Operating Temperature		-25°C to +75°C			
Output Connection		Cable: PVC, 22 AWG, 2 m long		Connector	

Output Function	NPN, NO	TT12-D310-F	TT12-D360-F
12 mm Diameter Threaded body with cable or integral connector to simplify installation. 5 to 30 V range permits operation on most DC systems. Low voltage drop insures TTL compatibility.			
Operating Distance		2.0 mm	4.0 mm
Power Supply		5 - 30 VDC	
Power Drain		6 mA	
Voltage Drop (on state)		< 0.7 V	
Switching Current (max)		150 mA max.	
Short Circuit Protection		No	
Operating Frequency		2.0 kHz	1.0 kHz
Repeatability		not specified	
Case		Nickel-Plated Brass	
Flush Mounting		Yes	No
Protection Degree		IP 67	
Operating Temperature		-25°C to +70°C	
Output Connection		Cable: PVC, 22 AWG, 2 m long	



Output Function	NPN, NO	XT12-D310-F	XT12-D318-F
	PNP, NO	XT12-D410-F	XT12-D418-F
	NPN, NC	XT12-D510-F	XT12-D518-F
	PNP, NC	XT12-D610-F	XT12-D618-F
12 mm Diameter Extended Operating Distance Threaded body with cable or integral connector to simplify installation.			
Operating Distance		4.0 mm	
Power Supply		10 - 30 VDC	
Power Drain		< 18 mA	
Voltage Drop (on state)		< 1.8 V	
Switching Current (max)		200 mA max.	
Short Circuit Protection		Yes	
Operating Frequency		1.0 kHz max.	
Repeatability		< 0.01 mm	
Case		Stainless Steel	
Flush Mounting		Yes	
Protection Degree		IP 67	
Operating Temperature		-25°C to +70°C	
Output Connection		Cable: PVC, 22 AWG, 2 m long	Connector

Output Function	NO	T12-D810-F	T12-D860-F	T12-D818-F	T12-D868-F
	NC	T12-D910-F	T12-D960-F	T12-D918-F	T12-D968-F
12 mm Diameter DC Two Wire Threaded body with cable or integral connector to simplify installation. Simple two wire connection. LED indicators on all models. Short circuit and reverse polarity protection standard. These models conform to EN 50008-EN50044 and meet the CE EMC directive.					
Operating Distance		2.0 mm	4.0 mm	2.0 mm	4.0 mm
Power Supply		10 - 30 VDC			
Max. Switching Current		100 mA			
Min. Switching Current		< 1.5 mA			
Leakage Current		< 0.6 mA			
Voltage Drop (on state)		< 6.5 V			
Switching Current (max)		1 kHz max.			
Short Circuit Protection		Yes			
Operating Frequency		1.0 kHz			
Repeatability		< 0.01 mm			
Case		Nickel-plated Brass			
Flush Mounting		Yes	No	Yes	No
Protection Degree		IP 67			
Operating Temperature		-25°C to +70°C			
Output Connection		Cable: PVC, 22 AWG, 2 m long		Connector	

Output Function	NPN, NO	T18-D310-F	T18-D360-F	T18-D318-F	T18-D368-F
	PNP, NO	T18-D410-F	T18-D460-F	T18-D418-F	T18-D468-F
	NPN, NC			T18-D518-F	T18-D568-F
	PNP, NC			T18-D618-F	T18-D668-F
	NPN, Complementary	T18-D010-F	T18-D060-F	T18-D018-F	T18-D068-F
	PNP, Complementary	T18-D710-F	T18-D760-F	T18-D718-F	T18-D768-F
18 mm Diameter Threaded body with cable or integral connector to simplify installation. LED indicators on all models. Short circuit and reverse polarity protection standard on three-wire models. Available with complementary NO and NC outputs. These models conform to EN 50008-EN50044 and meet the CE EMC directive.					
 NPN, NO					
 PNP, NO					
 NPN, NC					
 PNP, NC					
 NPN, Complementary					
 PNP, Complementary					
Operating Distance		5.0 mm	8.0 mm	5.0 mm	8.0 mm
Power Supply		10 - 30 VDC			
Power Drain		< 5 mA		< 18 mA	
Voltage Drop (on state)		< 3 V		< 1.8 V	
Switching Current (max)		150 mA		200 mA	
Short Circuit Protection		Yes (3 wire only)			
Operating Frequency		1.0 kHz max.	500 Hz max.	1.0 kHz max.	
Repeatability		not specified		< 0.01 mm	
Case		Nickel-plated Brass			
Flush Mounting		Yes	No	Yes	No
Protection Degree		IP 67			
Operating Temperature		-25°C to +70°C			
Output Connection		Cable: PVC, 22 AWG, 2 m long		Connector	



KANSON ELECTRONICS, INC.

Electronic Proximity Sensors

Output Function	NPN, NO	XT18-D310-F	XT18-D318-F
	PNP, NO	XT18-D410-F	XT18-D418-F
	NPN, NC	XT18-D510-F	XT18-D518-F
	PNP, NC	XT18-D610-F	XT18-D618-F
18 mm Diameter Extended Operating Distance Threaded body with cable or integral connector to simplify installation.			
Operating Distance		8.0 mm	
Power Supply		10 - 30 VDC	
Power Drain		< 18 mA	
Voltage Drop (on state)		< 1.8 V	
Switching Current (max)		200 mA max.	
Short Circuit Protection		Yes	
Operating Frequency		200 Hz max.	
Repeatability		< 0.02 mm	
Case		Stainless Steel	
Flush Mounting		Yes	
Protection Degree		IP 67	
Operating Temperature		-25°C to +70°C	
Output Connection		Cable: PVC, 22 AWG, 2 m long	Connector

Output Function	NO	T18-D810-F	T18-D860-F	T18-D818-F	T18-D868-F
	NC	T18-D910-F	T18-D960-F	T18-D918-F	T18-D968-F
18 mm Diameter DC Two Wire Threaded body with cable or integral connector to simplify installation. Simple two wire connection. LED indicators on all models. Short circuit and reverse polarity protection standard. These models conform to EN 50008-EN50044 and meet the CE EMC directive.					
Operating Distance		5.0 mm	8.0 mm	5.0 mm	8.0 mm
Power Supply		10 - 30 VDC			
Max. Switching Current		100 mA			
Min. Switching Current		< 1.5 mA			
Leakage Current		< 0.6 mA			
Voltage Drop (on state)		< 6.5 V			
Switching Current (max)		1 kHz max.			
Short Circuit Protection		Yes			
Operating Frequency		600 Hz			
Repeatability		< 0.02 mm			
Case		Nickel-plated Brass			
Flush Mounting		Yes	No	Yes	No
Protection Degree		IP 67			
Operating Temperature		-25°C to +70°C			
Output Connection		Cable: PVC, 22 AWG, 2 m long		Connector	

Electronic Proximity Sensors

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Output Function	NPN, NO	T30-D310-F	T30-D360-F	T30-D318-F	T30-D368-F
	PNP, NO	T30-D410-F	T30-D460-F	T30-D418-F	T30-D468-F
	NPN, NC			T30-D518-F	T30-D568-F
	PNP, NC			T30-D618-F	T30-D668-F
	NPN, Complementary	T30-D010-F	T30-D060-F	T30-D018-F	T30-D068-F
	PNP, Complementary	T30-D710-F	T30-D760-F	T30-D718-F	T30-D768-F
30 mm Diameter Threaded body with cable or integral connector to simplify installation. LED indicators on all models. Short circuit and reverse polarity protection standard on three-wire models. Available with complementary NO and NC outputs. These models conform to EN 50008-EN50044 and meet the CE EMC directive.					
 NPN, NO		 PNP, NO			
 NPN, NC		 PNP, NC			
 NPN, Complementary		 PNP, Complementary			
Operating Distance	10 mm		15 mm		10 mm
Power Supply	10 - 30 VDC				
Power Drain	< 5 mA		< 18 mA		
Voltage Drop (on state)	< 3 V		< 1.8 V		
Switching Current (max)	150 mA		200 mA		
Short Circuit Protection	Yes (3 wire only)				
Operating Frequency	300 Hz max.		150 Hz max.		300 Hz max.
Repeatability	not specified		< 0.05 mm		
Case	Nickel-plated Brass				
Flush Mounting	Yes		No		No
Protection Degree	IP 67				
Operating Temperature	-25°C to +70°C				
Output Connection	Cable: PVC, 22 AWG, 2 m long			Connector	

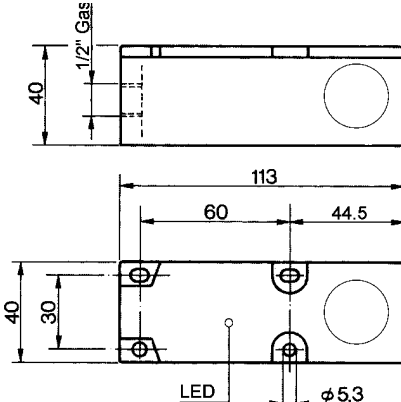


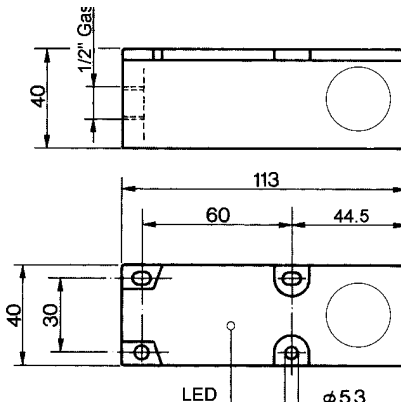
KANSON ELECTRONICS, INC.

Electronic Proximity Sensors

Output Function	NPN, NO	XT30-D310-F	XT30-D318-F
	PNP, NO	XT30-D410-F	XT30-D418-F
	NPN, NC	XT30-D510-F	XT30-D518-F
	PNP, NC	XT30-D610-F	XT30-D618-F
30 mm Diameter Extended Operating Distance Threaded body with cable or integral connector to simplify installation.			
Operating Distance		15 mm	
Power Supply		10 - 30 VDC	
Power Drain		< 18 mA	
Voltage Drop (on state)		< 1.8 V	
Switching Current (max)		200 mA max.	
Short Circuit Protection		Yes	
Operating Frequency		200 Hz max.	
Repeatability		< 0.05 mm	
Case		Nickel-plated Brass	
Flush Mounting		Yes	
Protection Degree		IP 67	
Operating Temperature		-25°C to +70°C	
Output Connection		Cable: PVC, 22 AWG, 2 m long	Connector

Output Function	NO	T30-D810-F	T30-D860-F	T30-D818-F	T30-D868-F
	NC	T30-D910-F	T30-D960-F	T30-D918-F	T30-D968-F
30 mm Diameter DC Two Wire Threaded body with cable or integral connector to simplify installation. Simple two wire connection. LED indicators on all models. Short circuit and reverse polarity protection standard. These models conform to EN 50008-EN50044 and meet the CE EMC directive.					
Operating Distance		10 mm	15 mm	10 mm	15 mm
Power Supply		10 - 30 VDC			
Max. Switching Current		100 mA			
Min. Switching Current		< 1.5 mA			
Leakage Current		< 0.6 mA			
Voltage Drop (on state)		< 6.5 V			
Switching Current (max)		1 kHz max.			
Short Circuit Protection		Yes			
Operating Frequency		300 Hz			
Repeatability		< 0.05 mm			
Case		Nickel-plated Brass			
Flush Mounting		Yes	No	Yes	No
Protection Degree		IP 67			
Operating Temperature		-25°C to +70°C			
Output Connection		Cable: PVC, 22 AWG, 2 m long		Connector	

Output Function	NPN, Complementary	L40-D010-F	L40-D060-F		
	PNP, Complementary	L40-D710-F	L40-D760-F		
	NO/NC Selectable			L40-DP10-F	L40-DP60-F
Limit Switch Style Sensing head can be oriented in 5 different directions. Two wire or four wire, complementary output models available. LED status indicator on all models. Compliant with CE EMC directive.					
Operating Distance		15 mm	20 mm	15 mm	20 mm
Power Supply		10 - 55 VDC		10 - 30 VDC	
Power Drain		< 10 mA		-	
Leakage Current		-		< 0.6 mA	
Voltage Drop (on state)		< 1.8 V		< 6.5 V	
Switching Current (max)		200 mA max.		100 mA max.	
Switching Current (min)		-		< 1.5 mA	
Operating Frequency		300 Hz		-	
Repeatability		< 0.3 mm		-	
Case		Plastic		-	
Flush Mounting		Yes	No	Yes	No
Protection Degree		IP 65		-	
Operating Temperature		-25 to 70°C		-	
Output Connection		Terminal Block		-	

Output Function	NPN, NO	1217P-1	1217P-2	1217P-3	1221-1-A-1-A
	PNP, NC				
Limit Switch Style These two economical limit style switches can be applied where the advanced features of some other models are not needed. The 1221 when used in combination with an (issc) Model 1262 provides MSHA approved motion detection in hazardous locations. The 1217P sensor can be used with the (issc) Model 1217 motion detector in non-hazardous applications. Both units made in the USA.					
Operating Distance		End	12.7 mm (0.5 in)	Left Side	14.3 mm (0.56 in)
Sensing Direction			Right Side		End
Power Supply		10 - 40 VDC		10 - 26 VDC	
Power Drain		-		< 20 mA	
Voltage Drop (on state)		< 0.7 V		< 0.7 V	
Switching Current (max)		100 mA		100 mA	
Operating Frequency		150 Hz		1.0 kHz	
Repeatability		-		0.5 mm (0.02 in)	
Case		Plastic ABS/Polycarbonate		-	
Operating Temperature		-25 to 75°C		-20 to 65°C	
Output Connection		Terminal Block		-	

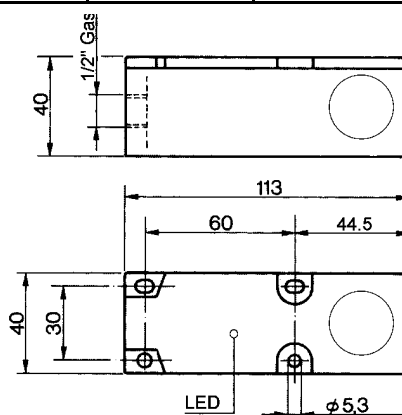
For Additional data on the Model 1217 and Model 1262 refer to the **(issc)** Solid State Timer and Control Components Catalog Bulletin 1000



Output Function	NO	1250-1-A-1	1250-2-A-1	1250-3-A-1	1250-1-A-2	1250-2-A-2	1250-3-A-2
	NC	1250-1-B-1	1250-2-B-1	1250-3-B-1	1250-1-B-2	1250-2-B-2	1250-3-B-2
	NO with built-in timer				1248-1A4P		

Limit Switch Style

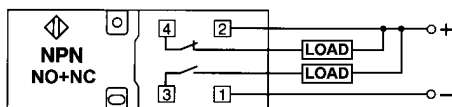
These two models have a universal 20-250 VAC/DC power supply. The 1250 is an economical limit style switch. The 1248A also features built-in motion detector timer circuitry. Three user selectable ranges cover 5 to 7500 pulses per minute. As long as speed remains above set point output output is energized. There is an adjustable start-up delay to allow equipment to achieve operating speed. Both units made in the USA.



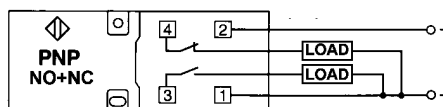
Operating Distance	12.7 mm (0.5 in)					
Sensing Direction	End	Right Side	Left Side	End	Right Side	Left Side
Power Supply	20 - 250 VAC/DC					
Power Drain	< 10 mA					
Leakage Current	2.0 mA					
Voltage Drop (on state)	< 1.8 V					
Switching Current (max)	500 mA max.					
In-rush Current < 8 msec	7.0 A					
Operating Frequency	166 Hz					
Case	Plastic ABS/Polycarbonate					
Protection Degree	NEMA 1, 3, 4, 6, 12, 13, IP 67					
Operating Temperature	-25 to 70°C					
Output Connection	Terminal Block			Connector		

For Additional data on the Model 1248A refer to the
(188C) Solid State Timer and Control Components Catalog
 Bulletin 1000

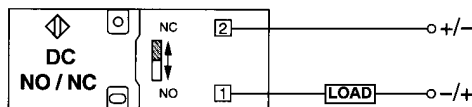
NPN, Complementary



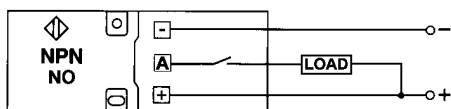
PNP, Complementary



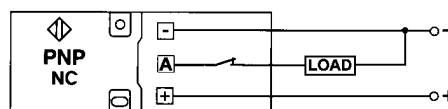
NO/NC selectable



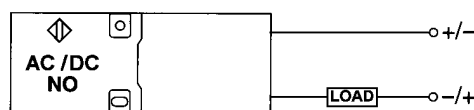
NPN, NO



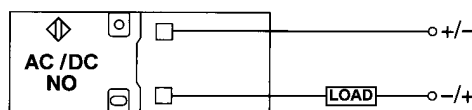
PNP, NC



1248A and 1250 with connector



1250 with internal terminals



The diagrams illustrate four different relay wiring configurations for a DC control circuit:

- DC NPN, Complementary:** Shows an NPN relay coil connected to a positive supply (+). The normally open (NO) contact is connected to a load, which is then connected to a negative supply (-). The normally closed (NC) contact is also connected to a load, which is then connected to a positive supply (+).
- DC Two wire, NO selected:** Shows a two-wire relay with a normally open (NO) contact selected. The coil is connected to a positive supply (+), and the contact is connected to a load, which is then connected to a positive supply (+).
- DC PNP, Complementary:** Shows a PNP relay coil connected to a positive supply (+). The normally open (NO) contact is connected to a load, which is then connected to a negative supply (-). The normally closed (NC) contact is also connected to a load, which is then connected to a positive supply (+).
- DC Two wire, NC selected:** Shows a two-wire relay with a normally closed (NC) contact selected. The coil is connected to a positive supply (+), and the contact is connected to a load, which is then connected to a positive supply (+).

4 WIRE

2 WIRE

Version	Contact numeration			
	1	2	3	
2 WIRE DC	—	+		
3 WIRE DC	—	+		NC/NC
4 WIRE DC	—	+	NC	NO

This sensor is supplied with a trimmer for sensitivity adjustment. The sensitivity increases when the trimmer is rotated in the clockwise direction and decreases in the counterclockwise direction. Avoid setting the distance greater than 60 mm. For optimum performance make the adjustment after installation to take other nearby metallic objects into consideration. The sensor is supplied preset to 50 mm.

See AC supply models on page 24.



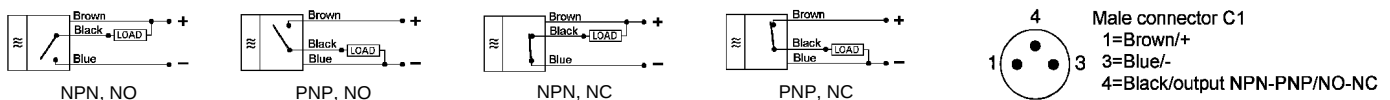
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Electronic Proximity Sensors

Output Function	NPN, NO	L17-D360-F
	PNP, NO	L17-D460-F
	NPN, NC	L17-D560-F
	PNP, NC	L17-D660-F
Rectangular Low cost, equipped with polarity protection and compliant with the CE EMC directive.		
Operating Distance	4.0 mm	
Power Supply	10 - 30 VDC	
Power Drain	< 12 mA	
Voltage Drop (on state)	< 1.0 V	
Switching Current (max)	100 mA	
Operating Frequency	500 Hz	
Case	Plastic	
Flush Mounting	No	
Protection Degree	IP 68	
Operating Temperature	-25°C to +70°C	
Output Connection	Cable PVC: AWG 26, 2m	

Output Function	NPN, Complementary	L12-D010-F	L12-D060-F
	PNP, Complementary	L12-D710-F	L12-D760-F
Rectangular Equipped with short circuit and polarity protection. LED indicator. IP67 protection and compliant with the CE EMC directive.			
Operating Distance	2.0 mm		4.0 mm
Power Supply	10 - 30 VDC		
Power Drain	< 12 mA		
Voltage Drop (on state)	< 1.8 V		
Switching Current (max)	200 mA		
Short Circuit Protection	Yes		
Operating Frequency	500 Hz		
Repeatability	<0.01 mm		
Case	Plastic		
Flush Mounting	Yes		No
Protection Degree	IP 67		
LED State Indicator	Yes		
Operating Temperature	-25°C to +70°C		
Output Connection	Cable PVC: L = 2m		

Output Function	NPN, NO	L10-D360-F	L10-D363-F
	PNP, NO	L10-D460-F	L10-D463-F
	NPN, NC	L10-D560-F	L10-D563-F
	PNP, NC	L10-D660-F	L10-D663-F
Rectangular Equipped with short circuit and polarity protection. LED indicator. IP67 protection and compliant with the CE EMC directive.			
Operating Distance		2.0 mm	
Power Supply		10 - 30 VDC	
Power Drain		< 12 mA	
Voltage Drop (on state)		< 1.8 V	
Switching Current (max)		200 mA	
Short Circuit Protection		Yes	
Operating Frequency		1.0 kHz	
Repeatability		< 0.01	
Case		Plastic	
Flush Mounting		Yes	
Protection Degree		IP 67	
Operating Temperature		-25°C to +70°C	
Output Connection		Cable PVC: AWG 26, 2m	Connector





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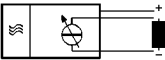
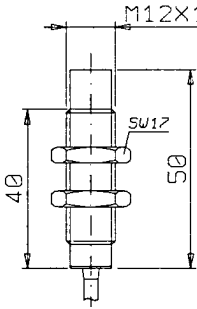
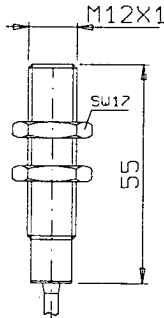
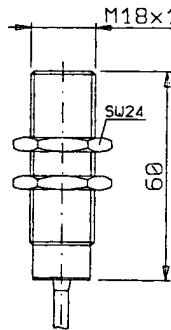
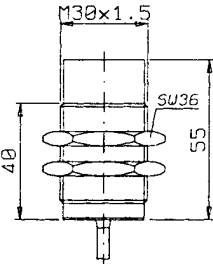
Electronic Proximity Sensors

Output Function	NPN, NO NAMUR	HT05-D310-F	HT08-D310-F	HT12-DN10-F
High Temperature These sensors can withstand temperatures up to 120°C, available in three body diameters from 5 mm to 12 mm				
External Diameter		5.0 mm	8.0 mm	12 mm
Operating Distance		0.8 mm	1.0 mm	2.0 mm
Power Supply		10 - 30 VDC		
Power Drain		< 5 mA		
Voltage Drop (on state)		< 3 V		
Switching Current (max)		50 mA max.		
Current with Actuator		-		
Current without Actuator		-		
Operating Frequency		3.0 kHz max.	2.0 kHz max.	2.0 kHz max.
Case		Stainless Steel		Nickel-plated Brass
Flush Mounting		Yes		
Protection Degree		IP 67		
Operating Temperature		-25°C to +130°C		-25°C to +120°C
Output Connection		Cable: Silicone, 22 AWG, 2 m long		

Output Function	Analogue, PNP 4 - 20 mA	T08-DA10-F	T12-DA10-F	T18-DA10-F	T30-DA10-F	L12-DA60-F
Analog Current Output Output current is proportional to the distance to target.						
Size		8.0 mm dia.	12.0 mm dia.	18.0 mm dia.	30.0 mm dia.	40 x 50 x 12 mm
Operating Distance		0.1 - 1.5 mm	0.1 - 3.0 mm	0.1 - 6.0 mm	0.5 - 10 mm	0 - 6.0 mm
Linearity Error		< 5%				< 2%
Power Supply		18 - 30 VDC				15 - 30 VDC
Power Drain		< 35 mA				< 5.0 mA
Output Current		4.0 mA @ max. dist. - 20 mA @ min. dist.				0.6 - 15.5 mA
Output Resistance		400 Ω				
Case		Nickel-plated Brass				Polypropylene
Flush Mounting		3.0 kHz max.	Yes	IP 67		No
Protection Degree		IP 67				
Operating Temperature		0°C to +50°C				
Temperature Drift		< 5%				< 4%
Output Connection		Cable: PVC, 22 AWG, 2 m long				

Electronic Proximity Sensors

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Output Function	Linear, PNP 0-10V			
Linear Voltage Output Output voltage is proportional to the distance to target.  Linear Voltage Output	T12-DL60-F 	T12-DL10-F 	T18-DL10-F 	T30-DL60-F 
External Diameter	12 mm		18 mm	30 mm
Operating Distance	0.3 - 5.0 mm	1.0 - 2.0 mm	3.0 - 5.0 mm	3.5 - 11 mm
Linearity Error	< 3%	< 5%		< 2%
Power Supply	17 - 30 VDC			
Power Drain	< 22 mA	< 10 mA	< 33 mA	
Output Current	0 - 10 V	0.13 - 1.05 V		0 - 10 V
Output Resistance	300 Ω			
Case	Nickel-plated Brass			
Flush Mounting	No	Yes	No	
Protection Degree	IP 67			
Operating Temperature	0° to +70°C	-10 to +60°C		0° to +60°C
Temperature Drift	< 5%	< 10%		< 4%
Output Connection	Cable: PVC, 22 AWG, 2 m long			

Inductive Ring Sensors

Feature internal diameters of 5, 12, 22, 25, 30, 44, 63 and 100 mm. Adjustable sensitivity, LED function indicator and short circuit & reverse polarity protection are standard. Most models available with pre-wired cable or connectors. Environmental protection is IP65: dust tight and protected against water jets. **CE** marked in conformity to 89/336 EEC and 73/23 ECC

DESCRIPTION:

In inductive ring sensors the sensing area is located inside the ring. These sensors are designed to detect metallic masses entering or passing through the ring. They are ideal for sensing, counting and checking of small metal part such as: screws, washes, nuts etc. and the control, detection, position, inspection and automation of machine tools & manufacturing systems

They operate on a 10-30 Vdc supply and offer NPN or PNP, complementary outputs. They are sealed in a rugged, plastic

housing with a protection degree of IP 65. All versions have short circuit and reverse polarity protection and are available in both prewired cable or connector output connection. Special versions with retained output pulse of 100 msec and NAMUR output are available.

OPERATING PRINCIPLE:

The operating principle is based on a high frequency oscillator that creates an electromagnetic field in the close surroundings of the sensing surface. The presence of a metallic object (actuator) in the operating area causes a decrease of the oscillation amplitude. Part of the electromagnetic energy is transferred from the sensor to the actuator and is dissipated. The oscillation amplitude is then identified by a threshold circuit that changes the output state.

The operating distance of the sensor depends on the actuator shape and size and is strictly linked to the nature of the metal. For minimum target size see table 1.

Ring Sensors - non flush mounting								
Output Connection		Cable: PVC, 22 AWG, 2 m long						
Output	NPN, Comp.*	R05-D060-F	R12-D060-F	R22-D060-F	R30-D060-F	R44-D060-F	R63-D060-F	R100-D060-F
Function	PNP, Comp.	R05-D760-F	R12-D760-F	R22-D760-F	R30-D760-F	R44-D760-F	R63-D760-F	R100-D760-F
Output Connection		Connector						
Output Function	NPN, NO	R05-D363-F	R12-D363-F					
	PNP, NO	R05-D463-F	R12-D463-F					
	NPN, NC	R05-D563-F	R12-D563-F					
	PNP, NC	R05-D663-F	R12-D663-F					
	NPN, Comp.			R22-D068-F	R30-D068-F	R44-D068-F	R63-D068-F	R100-D068-F
	PNP, Comp.			R22-D768-F	R30-D768-F	R44-D768-F	R63-D768-F	R100-D768-F
Hole Diameter		5.0 mm	12 mm	22 mm	30 mm	44 mm	63 mm	100 mm
Dimensions		see dimensions on next page						
Power Supply		10 - 30 VDC						
Power Drain		< 18 mA						
Voltage Drop (on state)		< 1.8 V						
Switching Current (max)		200 mA max.						
Short Circuit Protection		Yes						
Operating Frequency		600 - 1500 Hz	600 - 1000 Hz		600 - 800 Hz	250 - 600 Hz	100 - 200 Hz	100 Hz
Repeatability		< 0.3 mm						
Case		Plastic						
Flush Mounting		No						
Protection Degree		IP 65						
Operating Temperature		-25°C to +70°C						

Ring Sensors - flush mounting	
Cable: PVC, 22 AWG, 2 m long	
Output	NPN, Comp.*
Function	PNP, Comp.
Connector	
Output	NPN, Comp.
Function	PNP, Comp.
Hole Diameter	5.0 mm
Dimensions	see dimensions on next page
Power Supply	10 - 30 VDC
Power Drain	< 18 mA
Voltage Drop (on state)	< 1.8 V
Switching Current (max)	200 mA max.
Short Circuit Protection	Yes
Operating Frequency	600 - 1000 Hz
Repeatability	< 0.3 mm
Case	Plastic
Flush Mounting	Yes
Protection Degree	IP 65
Operating Temperature	-25°C to +70°C

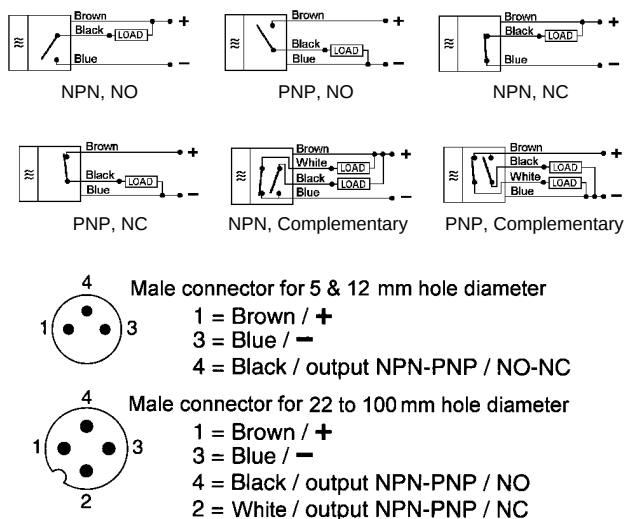


Table 1

Minimum Target Size (Iron)							
Model	R05	R12	R22	R30	R44	R63	R100
Length mm	1.0	2.0	6.0	7.0	9.0	12	20
Diameter mm	0.7	1.2	3.0	4.0	5.0	6.0	12

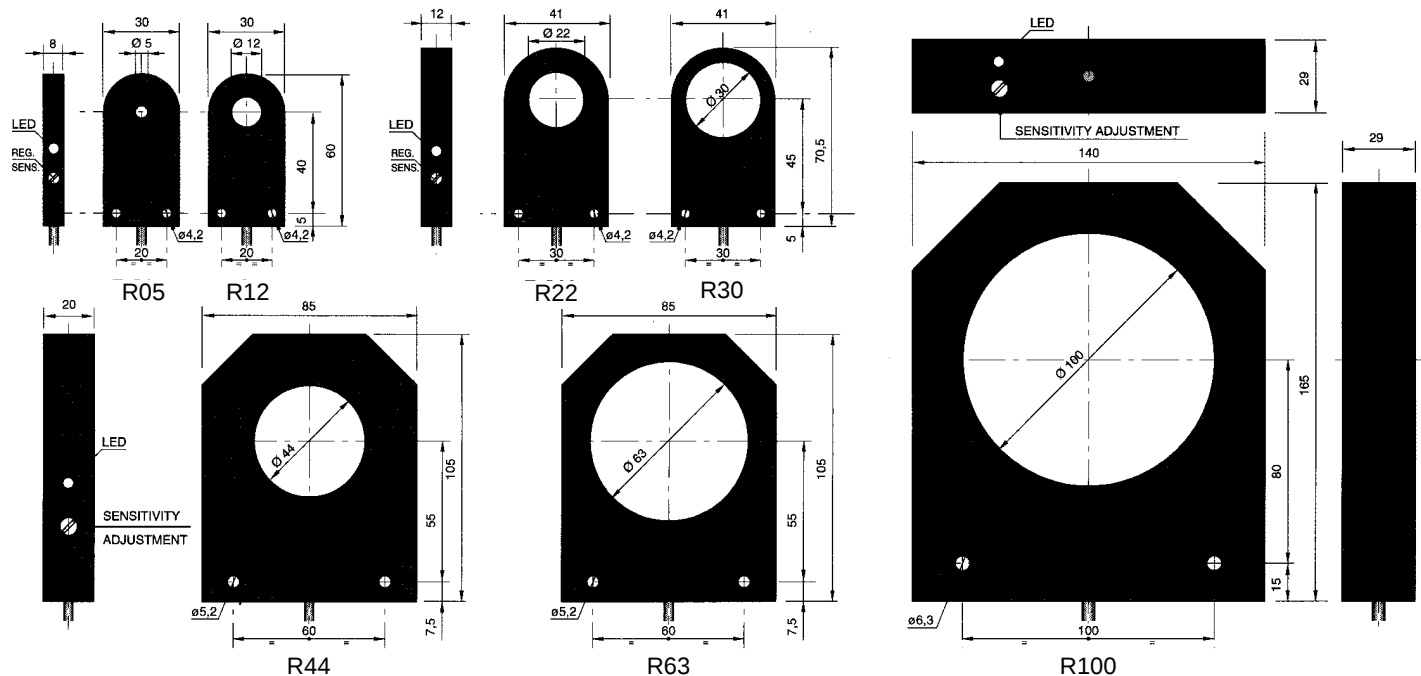
SENSITIVITY ADJUSTMENT	TYPE		A (mm)	B (mm)
	R05		25	10
	R12		30	10
	R22		60	20
	R30		60	20
	R44		300	250
	R63		300	250
	R100		600	650

SELECTION OF RING SENSOR : Select the minimum hole diameter required. This enables the sensitivity adjustment to be made within normal parameters ensuring proper functioning of the unit.

SENSITIVITY ADJUSTMENT : After selection of the ring sensor, it is recommended that the sensitivity adjustment be made while the sensor is installed in its final position, enabling any surrounding metal to be taken into account. Sensitivity increases by turning the trimmer clockwise and decreases by turning it counter-clockwise.

EFFECTS OF METAL IN THE CLOSE VICINITY : Moving metal parts close to the sensing area can affect the performance of the sensor. In order to ensure proper functioning, mount the sensor away from metallic objects.

USE OF SENSOR : A distance equal to the width of the sensor should be left between each object that passes through the sensor. If more than one sensor is to be installed in close vicinity, the minimum distance indicated between the sensors should be observed.





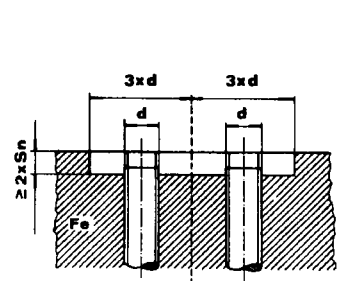
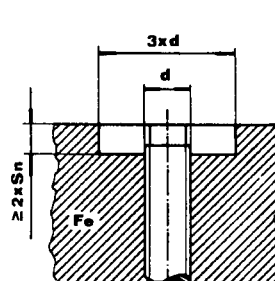
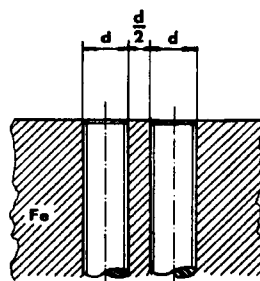
Output Function	Cable, PVC 22 AWG, 2 m Connector	WT12-D410-F WT12-D418-F	WT12-D460-F WT12-D468-F	WT18-D410-F WT18-D418-F	WT18-D460-F WT18-D468-F
Weld Immune DC The main characteristic of this series is the immunity to noise induced by alternating magnetic fields. The magnetic flux density can reach 150 millitesla, equivalent to a 20 kA welding current flowing 2.5 cm from the sensor. LED function indicator. Short circuit and reverse polarity protection are standard.					
External Diameter		12 mm		18 mm	
Operating Distance		2.0 mm	4.0 mm	5.0 mm	8.0 mm
Output Function		PNP, NO			
Power Supply		10 - 30 VDC			
Power Drain		< 10 mA			
Voltage Drop (on state)		< 2.4 V @ I max			
Switching Current (max)		200 mA max.			
Operating Frequency		15 Hz max.			
Case		Teflon Plated Brass			
Flush Mounting		Yes	No	Yes	No
Protection Degree		IP 67			
Operating Temperature		-25°C to +70°C			

Output Function	Cable, PVC 22 AWG, 2 m Connector	WT30-D410-F WT30-D418-F	WT30-D460-F WT30-D468-F
Weld Immune DC Continued Three wire PNP, NO Connector			
External Diameter		30 mm	
Operating Distance		10 mm	15 mm
Output Function		PNP, NO	
Power Supply		10 - 30 VDC	
Power Drain		< 10 mA	
Voltage Drop (on state)		< 2.4 V @ I max	
Switching Current (max)		200 mA max.	
Operating Frequency		15 Hz max.	
Case		Teflon Plated Brass	
Flush Mounting		Yes	No
Protection Degree		IP 67	
Operating Temperature		-25°C to +70°C	

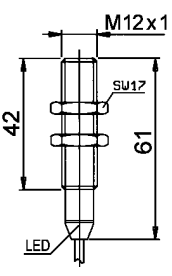
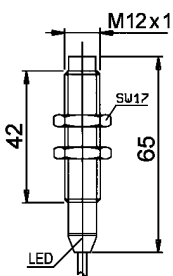
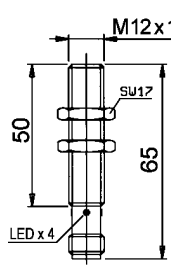
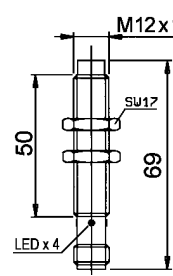
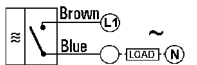
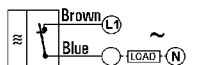
2m cable	T18-DN10-F	T18-DN60-F	T30-DN10-F	T30-DN60-F
Connector	T18-DN18-F	T18-DN68-F	T30-DN18-F	T30-DN68-F
NAMUR Output Continued. Connector Versions 6.5 mm only 8.0 mm to 30 mm	Add 4.0 mm to length for connector version		Add 8.0 mm to length for connector version	
External Diameter	18.0 mm		30 mm	
Operating Distance	5.0 mm	8.0 mm	10 mm	15 mm
Power Supply	5 - 24 VDC			
Operating Frequency	5.0 mm		500 Hz	
Repeatability			< 0.05 mm	
Case			Nickel Plated Brass	
Flush Mounting	Yes (see mounting)			
Protection Degree	IP-67			
Operating Temperature	-25°C to +70°C			

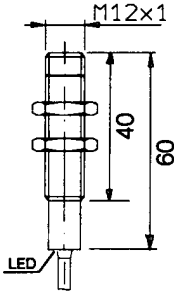
Totally shielded models can be embedded in metal for flush mounting, for side by side refer to figure 1a. Partially shielded can be mounted according to Figure 1b. For side by side refer to figure 1c. S_n = operating distance.

Fig. 1c



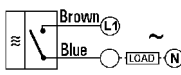
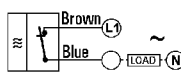
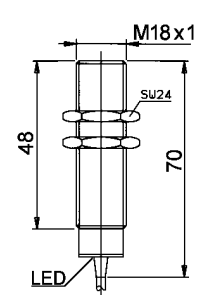
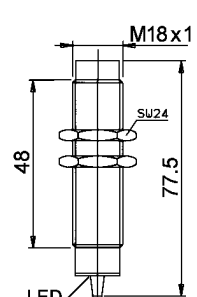
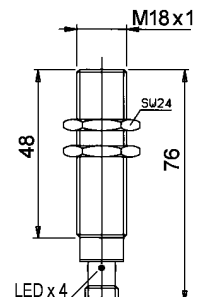
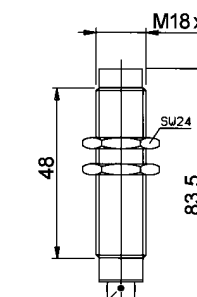


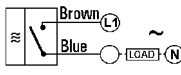
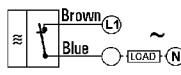
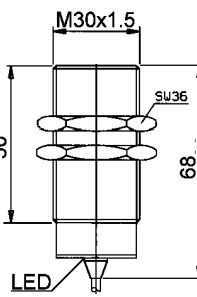
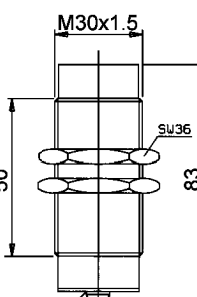
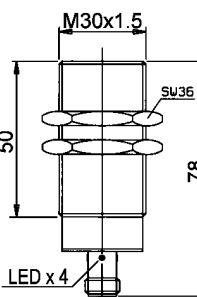
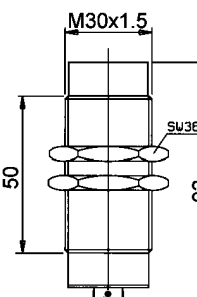
Output Function	NO	T12-A110-F	T12-A160-F	T12-A118-F	T12-A168-F
	NC	T12-A210-F	T12-A260-F	T12-A218-F	T12-A268-F
12 mm Diameter AC These two wire AC inductive proximity sensors meet EN 500036 - EN 500044 standard and feature a wide supply range of 20-250 VAC. All models available with cable or connector output connections, LED function indicator and meet the CE EMC directive.		   			
 NO output		 NC output			
Operating Distance		2.0 mm	4.0 mm	2.0 mm	4.0 mm
Power Supply		20 - 250 VAC			
Max. Switching Current		300 mA			
Min Switching Current		20 mA			
Leakage Current		< 2.5 mA			
Voltage Drop (on state)		< 6.0 V			
Max. In-rush - 20 msec.		1.5 A			
Operating Frequency		12 Hz			
Repeatability		< 0.2 mm			
Case		Nickel Plated Brass			
Flush Mounting		Yes	No	Yes	No
Protection Degree		IP 67			
Operating Temperature		-25°C to +70°C			
Output Connection		Cable: PVC, 22 AWG, 2 m long		Connector	

Output Function	NO	PT12-A160-F
12 mm Diameter AC Plastic Body This water resistant and dust-tight AC sensor is suited for all type of applications from food and chemical processing to packaging and industrial machinery .  NO output		
Operating Distance		4.0 mm
Power Supply		40 - 250 VAC
Power Drain		3.5 mA
Maximum Load		180 mA max.
Operating Frequency		50 Hz
Case		Plastic (Polybutylene Terephthalate)
Flush Mounting		No
Protection Degree		IP 67
Operating Temperature		-25°C to +70°C
Output Connection		Cable: PVC, 22 AWG, 2 m long

Electronic Proximity Sensors

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Output Function	NO	T18-A110-F	T18-A160-F	T18-A118-F	T18-A168-F
	NC	T18-A210-F	T18-A260-F	T18-A218-F	T18-A268-F
18 mm Diameter AC These two wire AC inductive proximity sensors meet EN 500036 - EN 500044 standard and feature a wide supply range of 20-250 VAC. All models available with cable or connector output connections, LED function indicator and meet the CE EMC directive.  					
Operating Distance		10 mm	15 mm	5.0 mm	8.0 mm
Power Supply		20 - 250 VAC			
Max. Switching Current		300 mA			
Min Switching Current		20 mA			
Leakage Current		< 2.5 mA			
Voltage Drop (on state)		< 6.0 V			
Max. In-rush - 20 msec.		1.5 A			
Operating Frequency		12 Hz			
Repeatability		< 0.2 mm			
Case		Nickel Plated Brass			
Flush Mounting		Yes	No	Yes	No
Protection Degree		IP 67			
Operating Temperature		-25°C to +70°C			
Output Connection		Cable: PVC, 22 AWG, 2 m long		Connector	

Output Function	NO	T30-A110-F	T30-A160-F	T30-A118-F	T30-A168-F
	NC	T30-A210-F	T30-A260-F	T30-A218-F	T30-A268-F
30 mm Diameter AC These two wire AC inductive proximity sensors meet EN 500036 - EN 500044 standard and feature a wide supply range of 20-250 VAC. All models available with cable or connector output connections, LED function indicator and meet the CE EMC directive.  					
Operating Distance		10 mm	15 mm	10 mm	15 mm
Power Supply		20 - 250 VAC			
Max. Switching Current		300 mA			
Min Switching Current		20 mA			
Leakage Current		< 2.5 mA			
Voltage Drop (on state)		< 6.0 V			
Max. In-rush - 20 msec.		1.5 A			
Operating Frequency		12 Hz			
Repeatability		< 0.3 mm			
Case		Nickel Plated Brass			
Flush Mounting		Yes	No	Yes	No
Protection Degree		IP 67			
Operating Temperature		-25°C to +70°C			
Output Connection		Cable: PVC, 22 AWG, 2 m long		Connector	



Output Function	NO/NC Selectable	L40-AP10-F	L40-AP0-F
Limit Switch Style Sensing head can be oriented in 5 different directions. Two wire switch selectable output. LED status indicator on all models. Compliant with CE EMC directive.			
Operating Distance		15 mm	20 mm
Power Supply		20 to 250 VAC	
Leakage Current		<1.5 mA	
Voltage Drop		< 6.0 V	
Switching Current (max)		300 mA	
Switching Current (min)		15 mA	
In-rush Current <20 msec		1.5A	
Operating Frequency		12 Hz	
Repeatability		< 0.3 mm	
Case		Plastic	
Flush Mounting		Yes	No
Protection Degree		IP 65	
Operating Temperature		-25 to 70°C	
Output Connection		Terminal Block	

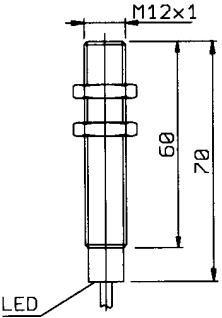
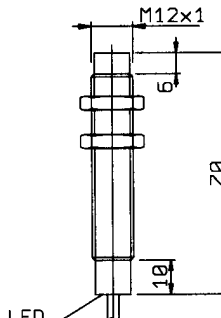
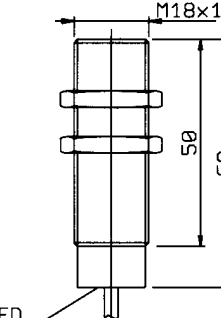
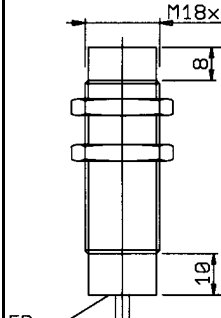
For AC/DC universal power supply models see page 12.

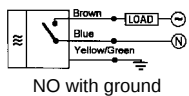
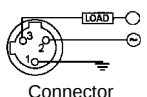
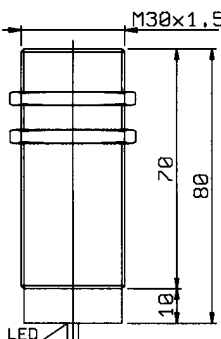
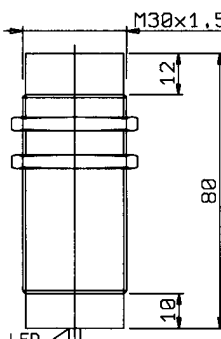
Model Number	L80-AP64-F
Block Shaped Case Adjustable operating distance up to 60 mm. Two wire connection with switch selectable NO or NC output. LED indicators and compliance with the CE EMC directive.	
Operating Distance	10 - 60 mm
Power Supply	20 to 250 VAC
Leakage Current	<1.5 mA
Voltage Drop	< 6.0 V
Switching Current (max)	300 mA
Switching Current (min)	15 mA
In-rush Current <20 msec	1.5A
Operating Frequency	12 Hz
Repeatability	< 0.3 mm
Case	Plastic
Flush Mounting	No
Protection Degree	IP 65
Operating Temperature	-25 to 70°C
Output Connection	Conector (included with sensor)

See DC supply models and connector configuration on page 13.

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Output Connection and Function	NO, Cable, 2 m	WT12-A110-F	WT12-A160-F	WT18-A110-F	WT18-A160-F
	NC, Cable, 2 m	WT12-A210-F	WT12-A260-F	WT18-A210-F	WT18-A260-F
	NO, Connector	WT12-A1110-F	WT12-A1610-F	WT18-A1110-F	WT18-A1610-F
	NC, Connector	WT12-A2110-F	WT12-A2610-F	WT18-A2110-F	WT18-A2610-F
Weld Immune AC The main characteristic of this series is the immunity to noise induced by alternating magnetic fields. The magnetic flux density can reach 150 millitesla, equivalent to a 20 kA welding current flowing 2.5 cm from the sensor. LED function indicator. Short circuit and reverse polarity protection are standard.					
External Diameter		12 mm	12 mm	18 mm	18 mm
Operating Distance		2.0 mm	4.0 mm	5.0 mm	8.0 mm
Power Supply		20 - 250 VAC			
Power Drain		< 2.0 mA			
Voltage Drop (on state)		< 5.0 V @ I max			
Switching Current (max)		300 mA		500 mA	
Operating Frequency		15 Hz max.			
Case		Teflon Plated Brass			
Flush Mounting		Yes	No	Yes	No
Protection Degree		IP 67			
Operating Temperature		-25°C to +70°C			

Output Connection and Function	NO, Cable, 2 m	WT30-A110-F	WT30-A160-F
	NC, Cable, 2 m	WT30-A210-F	WT30-A260-F
	NO, Connector	WT30-A1110-F	WT30-A1610-F
	NC, Connector	WT30-A2110-F	WT30-A2610-F
Weld Immune AC Continued  NO with ground  Connector			
External Diameter		30 mm	15 mm
Operating Distance		10 mm	15 mm
Power Supply		20 - 250 VAC	
Power Drain		< 2.0 mA	
Voltage Drop (on state)		< 5.0 V @ I max	
Switching Current (max)		300 mA	500 mA
Operating Frequency		15 Hz max.	
Case		Teflon Plated Brass	
Flush Mounting		Yes	No
Protection Degree		IP 67	
Operating Temperature		-25°C to +70°C	

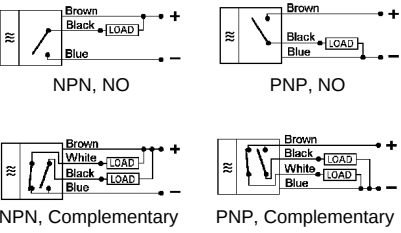
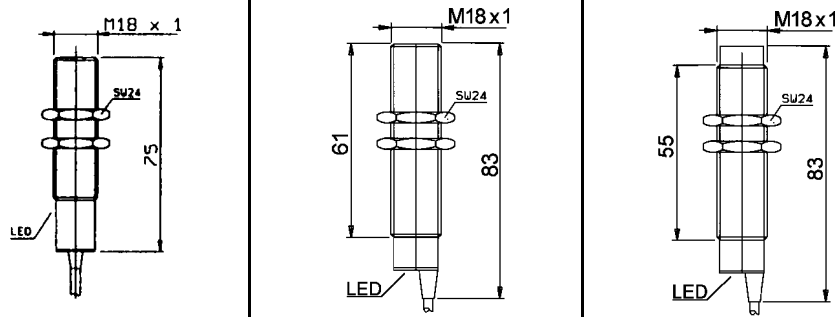
Capacitive Proximity Sensors

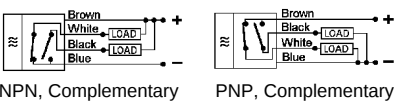
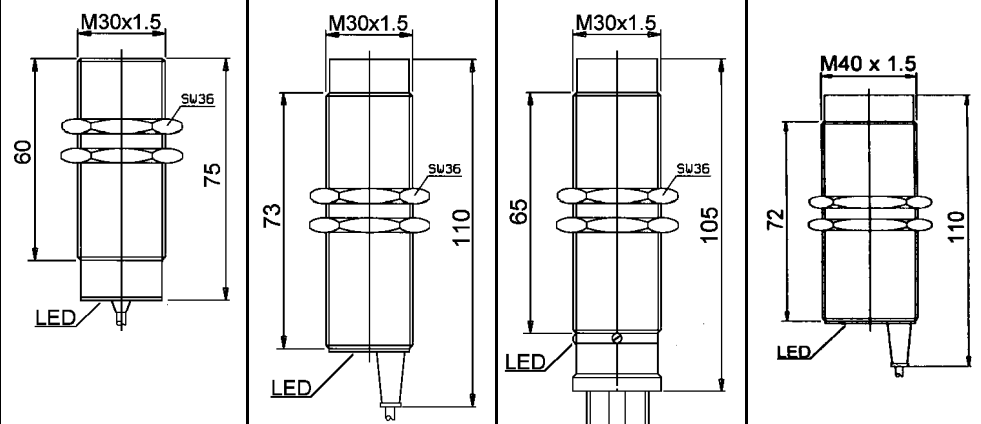
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Capacitive Sensors

Capacitive sensors can be used to sense both metallic and non-metallic objects (liquid, plastic or wood). They are available in either metal or plastic cylindrical threaded housings. These sensors are dust and water tight as well as shock and vibration resistant. All models feature LED indication of output status and short circuit protection. Both cable and connector versions

are offered, a protective housing simplifies installation in tank applications. A screw on the back of the sensor allows adjustment of the operating distance. This adjustment in applications such as sensing weather a container is filled or empty. All models compliant with the **CE** EMC directive.

Output Function	NPN, NO	CT18-D310-F		
	PNP, NO	CT18-D410-F		
	NPN, Complementary		CT18-D010-F	CP18-D060-F
	PNP, Complementary		CT18-D710-F	CP18-D760-F
DC Capacitive 18 mm				
				
				
Operating Distance		3.0 - 8.0 mm	0 - 5.0 mm	0 - 10 mm
Power Supply			10 - 30 VDC	
Power Drain		< 5.0 mA	< 10 mA	< 5.0 mA
Voltage Drop (on state)		< 3.0 V	< 1.8 V	< 3.0 V
Switching Current (max)		150 mA	200 mA	150 mA
Operating Frequency		200 Hz	10 Hz	100 Hz
Case		Nickel Plated Brass		Plastic
Flush Mounting		Yes		No
Protection Degree			IP 65	
Operating Temperature		-10° to +60°C	-20° to +70°C	-10° to +60°C
Output Connection			Cable: PVC, 22 AWG, 2 m long	

Output Function	NPN, Complementary	CT30-D010-F	CP30-D060-F	CP30-D064-F	CP40-D060-F
	PNP, Complementary	CT30-D710-F	CP30-D760-F	CP30-D764-F	CP40-D760-F
DC Capacitive 30 mm & 40 mm					
					
					
Mating connector with screw terminals included with models so equipped.					
External Diameter			30 mm		40 mm
Operating Distance		3.0 - 15 mm	0 - 25 mm		0 - 35 mm
Power Supply		10 - 30 VDC	10 - 55 VDC		
Power Drain		< 5.0 mA	≤ 10 mA		< 10 mA
Voltage Drop (on state)		< 3.0 V	< 1.8 V		
Switching Current (max)		150 mA	300 mA		200 mA
Operating Frequency		100 Hz	10 Hz		
Case		Nickel Plated Brass	Plastic		
Flush Mounting		Yes	No		
Protection Degree		IP 65	IP 67	IP 65	IP 67
Operating Temperature		-10° to +60°C	-20° to +70°C		
Output Connection		Cable: PVC, 2 m		Connector (included)	Cable: PVC, 2 m

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Photoelectric Sensors

These high quality and durable optical sensors are available in four types. **Direct Reflection:** The emitter and receiver are located in the same housing. The detection of an object is obtained by the reflection of the infrared light off of the object. In the use of photocells it is important to note that the color and type of surface can effect the operating distance. The operating distance in the technical data is related to matt white paper. **Reflection with Reflector:** The emitter and receiver are located in the same housing. The reflection of the light emitted is obtained by using one or more reflectors and the detection of the object occurs when these rays are interrupted. This type offers a greater operating distance then the direct reflection type.

Polarized Reflection with Reflector: Similar to reflection with reflector except that this type uses a polarized band of light. A polarized band of light offers a more secure readings even when the object has a very shiny surface and they are not affected by random reflections. **Thru Beam:** In this type the emitter and receiver are in separate housing and must face each other. Detection achieved when object interrupts the light beam between the emitter and receiver. This type offers the greatest operating distance. All models available with cables or connectors, are short circuit protected and compliant with the **CE EMC directive.**

Direct Reflection

Model Number	Cable	OT18M-CP2-F	OT18M-CP4-F	OT18-AP2-F	OT18-AP4-F
	Connector	OT18M-CP2H-F	OT18M-CP4H-F	OT18-AP2H-F	OT18-AP4H-F
Operating Distance		200 mm	400 mm	200 mm	400 mm
Power Supply		10 - 30 VDC		20 - 250 VAC	
Power Drain		≤50 mA		≤10 mA	
Output Current		200 mA		300 mA	
Output Function		NPN/PNP Complementary		NO/NC	
Voltage Drop (on state)		≤ 3.0 V		≤1.5 V	
Short Circuit Protection		Yes		No	
Light Source		Infrared		Infrared	
Operating Frequency		700 Hz		15 Hz	
Case		Stainless Steel		Plastic, gray makrolon	
Flush Mounting		> 10,000 Lux			
Protection Degree		IP 67			
Operating Temperature		-20°C to +50°C			

Operating distance based on matt white paper dim. 10 x 10 cm.

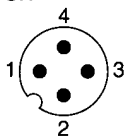
Reflector Types

Model Number	Cable	OT18M-CR-F	OT18M-CAR-F	OT18-AR-F	OT18-AAR-F
	Connector	OT18M-CRH-F	OT18M-CARH-F	OT18-ARH-F	OT18-AARH-F
Operating Distance		2500 mm	1000 mm	2500 mm	1000 mm
Power Supply		10 - 30 VDC		20 - 250 VAC	
Power Drain		≤20 mA		≤10 mA	
Output Current		200 mA		300 mA	
Output Function		NPN/PNP Complementary		NO/NC	
Voltage Drop (on state)		≤ 3.0 V		≤1.5 V	
Short Circuit Protection		Yes		No	
Light Source		Infrared	Red	Infrared	Red
Operating Frequency		700 Hz		15 Hz	
Case		Stainless Steel		Plastic, gray makrolon	
Flush Mounting		> 10,000 Lux			
Protection Degree		IP 67			
Operating Temperature		-20°C to +50°C			

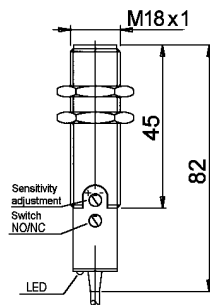
Operating distance based on RP-452 reflector. See Page 43 for reflectors

CONNECTION WITH PLUG

VIEW OF MALE
CONNECTOR



2 WIRINGS (EMITTER) **4 WIRINGS**
 1 = Brown / + 1 = Brown / +
 3 = Blue / - 3 = Blue / -
 4 = Black / output NO
 2 = White / output NC



INSTRUCTIONS FOR THE PROGRAMMING AND ADJUSTMENT

TRIMMER FOR THE SENSING RANGE ADJUSTMENT: The photocell is supplied with max sensing range with the trimmer totally rotated in the clockwise direction. The sensitivity reduces by rotating the trimmer in the counterclockwise direction.

SWITCH NPN/PNP: The photocell is supplied with the switch in P (PNP output). To change to NPN turn the switch to N in the counterclockwise direction. **WARNING!** Do not change switch while power is applied.

GREEN LED - STABILITY INDICATOR: This LED is on when the level of the output signal and the alignment of the photoelectric sensors are in the optimum position. In the case that the LED is off this indicates that the lens is obscured or for the types with direct reflection a possible alteration of the dimension or color of the object to be detected.

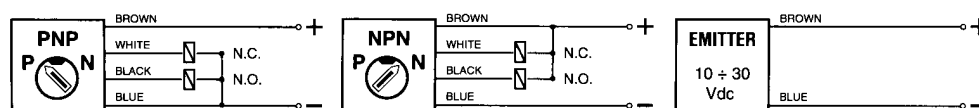
YELLOW LED - OPERATION INDICATOR: This LED is on when the object to be detected enters the sensing range of the photocell giving output signals. **NOTE!** The unit must be programmed for the required NPN or PNP function before applying power.



Thru Beam Types

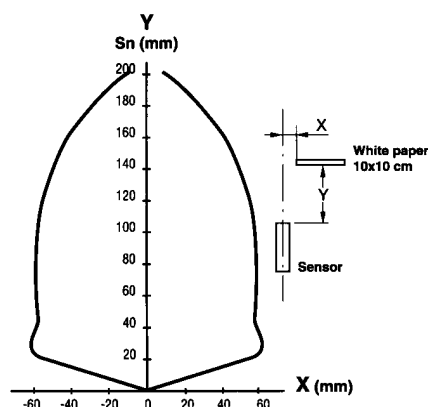
Model Number		Emitter	Detector	Emitter	Detector
	Cable	OT18M-CBE-F	OT18M-CBR-F	OT18-ABE-F	OT18-ABR-F
	Connector	OT18M-CBEH-F	OT18M-CBRH-F	OT18-ABEH-F	OT18-ABRH-F
Operating Distance		15 m			
Power Supply		10 - 30 VDC		20 - 250 VAC	
Power Drain		≤35 mA		≤10 mA	
Output Current		200 mA		300 mA	
Output Function		NPN/PNP Complementary		NO/NC	
Voltage Drop (on state)		≤ 3.0 V		≤1.5 V	
Short Circuit Protection		Yes		No	
Light Source		Infrared		Infrared	
Operating Frequency		700 Hz		15 Hz	
Case		Stainless Steel		Plastic, gray makrolon	
Flush Mounting		> 10.000 Lux			
Protection Degree		IP 67			
Operating Temperature		-20°C to +50°C			

WIRING DIAGRAMS

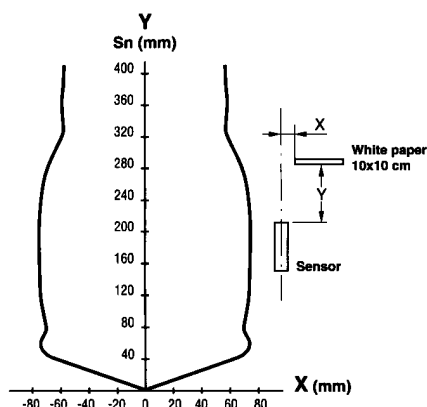


Radiation patterns

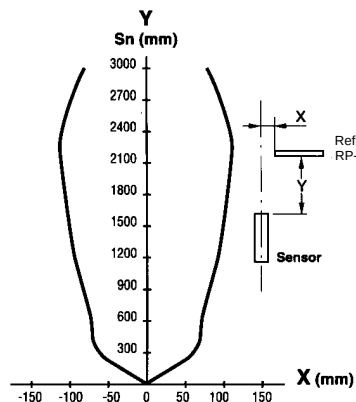
OT18M-CP2-F and OT18-AP2-F



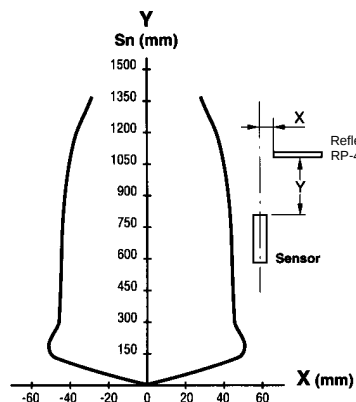
OT18M-CP4-F and OT18-AP4-F



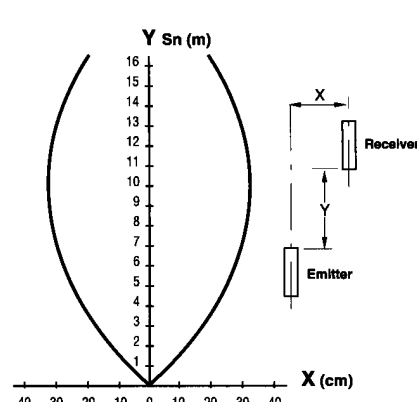
OT18M-CR-F

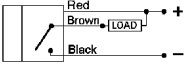
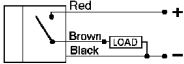
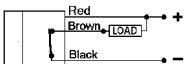
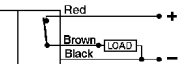
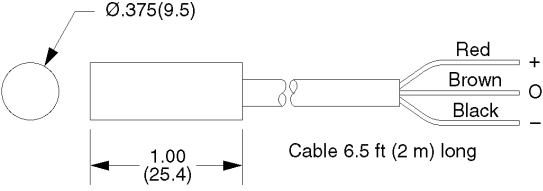


OT18-AR-F



OT18M-CBR-F/OT18M-CBE-F



Output Function	NPN, NO	TMS-D102
	PNP, NO	TMS-D104
	NPN, NC	TMS-D101
	PNP, NC	TMS-D103
9.5 mm (0.375") Diameter Unthreaded body with cable.  NPN, NO  PNP, NO  NPN, NC  PNP, NC 		
Operating Distance	25.4 mm (1.0")	
Power Supply	9 - 26 VDC	
Power Drain	≤ 20 mA @ 24 VDC	
Voltage Drop (on state)	≤ 2.0 V	
Switching Current (max)	100 mA max.	
Short Circuit Protection	No	
Field Strength to Activate	30 Gauss	
Operating Frequency	50 kHz max. (resistive)	
Case	Diallyl Phthalate	
Flush Mounting	Yes	
Protection Degree	IP 67	
Operating Temperature	-40°C to +85°C	
Output Connection	Cable: PVC, 24 AWG, 2 m long	

Power Supply/Amplifiers RP-490 and RP-491

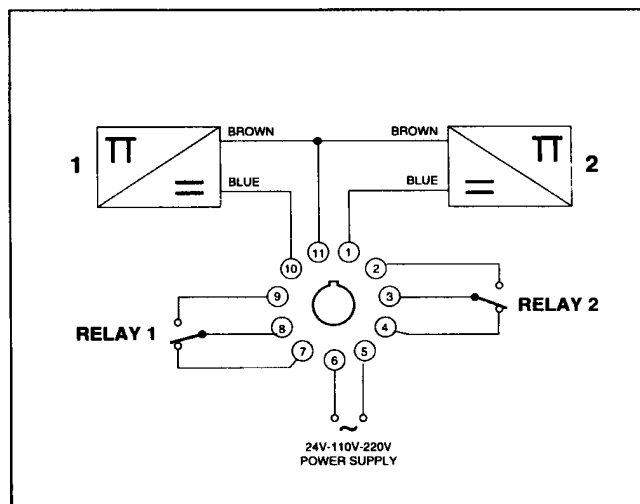
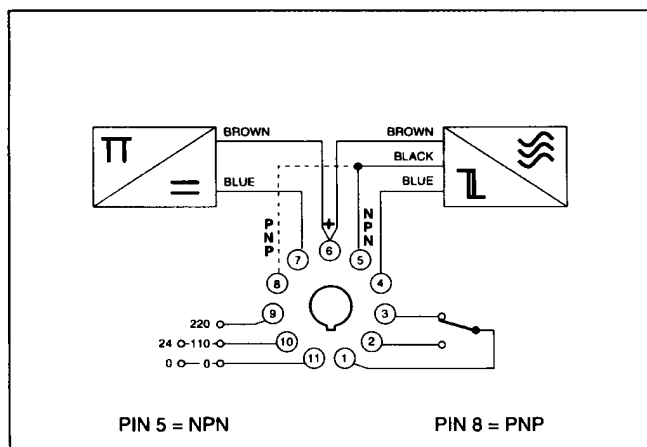
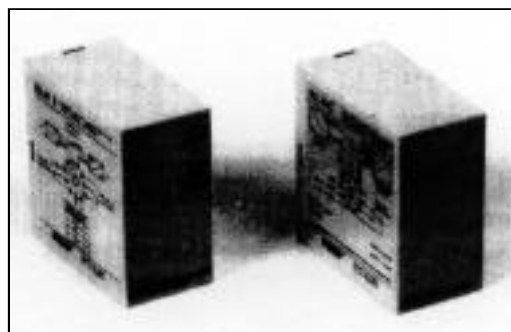
Specifications

These instruments are made up of a transformer, an amplifier, a rectifying circuit and one or two double pole output relays, respectively in the RP-490 and RP-491 types.

They are used to supply with a stabilized 12 VDC to inductive and capacitive sensors and photocells. The electronics of the two models is assembled in a plastic housing with an 11 pin plug-in base.

The RP-490 model is very versatile as it permits the use of a sensor with NPN, PNP or NAMUR logic.

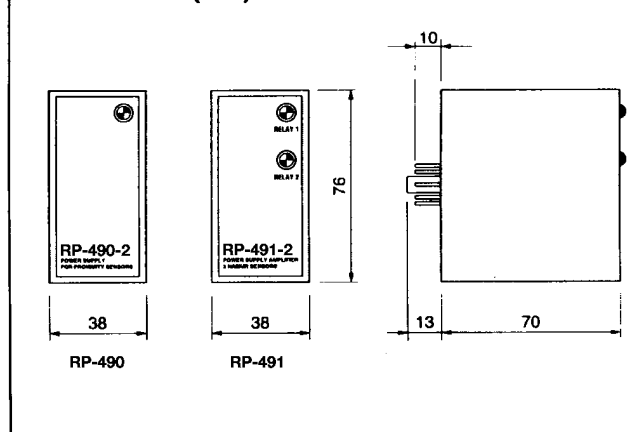
The RP-491 type allows for the use of two NAMUR sensors.



SPECIFICATIONS

Power supply (RP-49X-1)	24VDC/AC
Power supply (RP-49X-2) ~ 15%	110/220VAC 50-60Hz
Output voltage	12 VDC
Operating power	1.5VA
Max output current	50 mA
Temperature range	-20 to + 60°C
Degree of protection	IP 40
LED indicators	yes
Model RP-490 SPDT relay output	5A 220VAC
Model RP-491 two SPDT relay outputs	5A 220VAC

DIMENSIONS (mm)



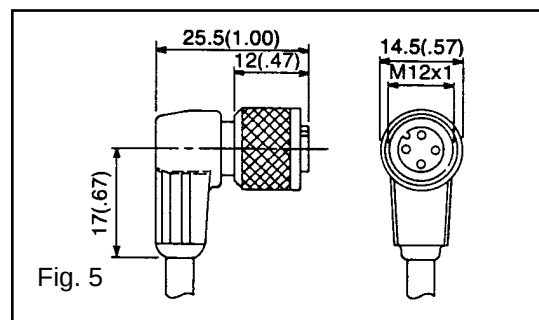
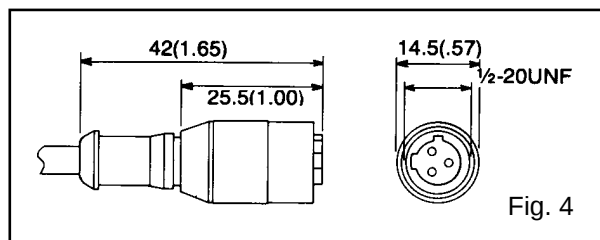
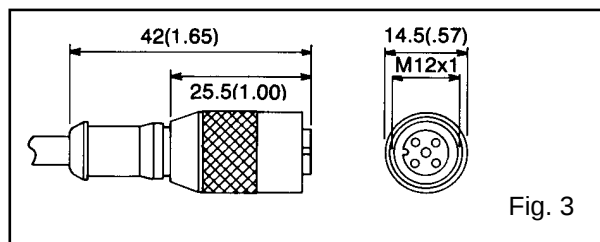
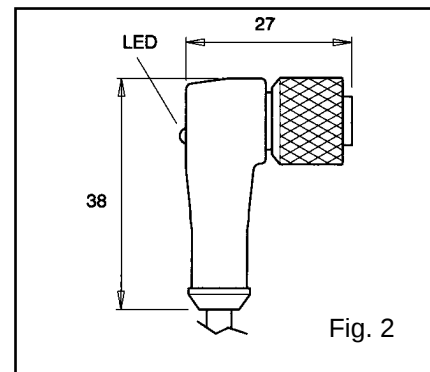
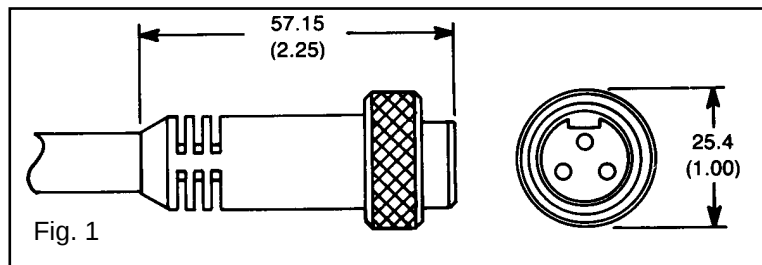
MODEL NUMBERS

RP-490-1	Amplifier and power supply for one sensor, 24V AC/DC supply
RP-490-2	Amplifier and power supply for one sensor, 110/220 VAC supply
RP-491-1	Amplifier and power supply for two NAMUR sensors, 24V AC/DC supply
RP-491-2	Amplifier and power supply for two NAMUR sensors, 110/220 VAC supply

10 000 000 0054 ex 001 700 0050 Fax: 001 700 0050 web <http://www.ics.kyushu-u.ac.jp/>

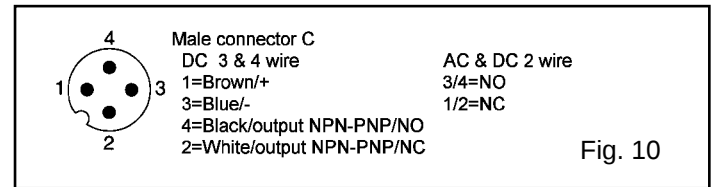
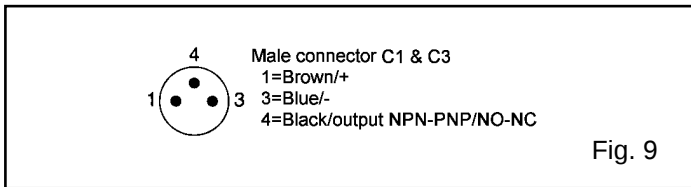
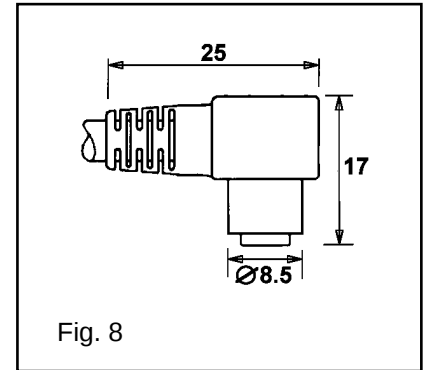
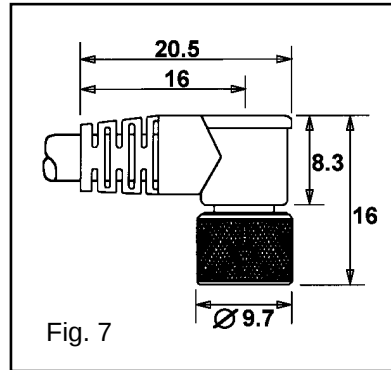
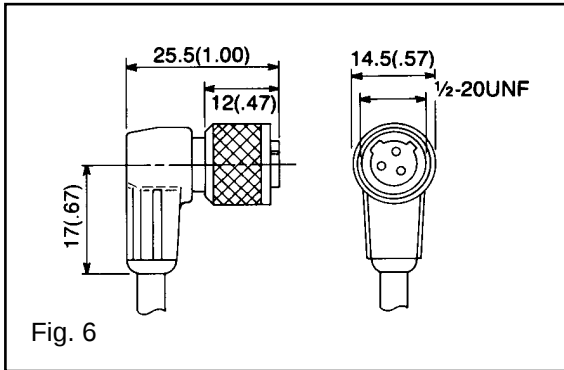
Cables

Model	Wires	AC/DC	Style	LEDs	Length	Figure	Applications
RP-503	3	AC	straight	no	2m	1	1248A, 1250
RP-503-5	3	AC	straight	no	5m	1	1248A, 1250
RP-509	3	DC	right angle	yes	2m	2	NPN, NO sensors only
RP-510	3	DC	right angle	yes	2m	2	PNP, NO sensors only
RP-511	3	DC	straight	no	2m	3	NO sensors only
RP-511-5	3	DC	straight	no	5m	3	NO sensors only
RP-512	3	DC	right angle	no	2m	5	NO sensors only
RP-512-5	3	DC	right angle	no	5m	5	NO sensors only
RP-513	3	AC	straight	no	2m	4	AC weld-immune only
RP-513-5	3	AC	straight	no	5m	4	AC weld-immune only
RP-514	3	AC	right angle	no	2m	6	AC weld-immune only
RP-514-5	3	AC	right angle	no	5m	6	AC weld-immune only
RP-515	3	DC	right angle	yes	2m	2	NPN, NO sensors only
RP-515-5	3	DC	right angle	yes	5m	2	NPN, NO sensors only
RP-515-F	3	DC	right angle	yes	2m	2	NPN, NO sensors only
RP-516	3	DC	right angle	yes	2m	2	PNP, NO sensors only
RP-516-5	3	DC	right angle	yes	5m	2	PNP, NO sensors only
RP-516-F	3	DC	right angle	yes	2m	2	PNP, NO sensors
RP-522	3	DC	miniature, straight	no	2m	-	NO sensors only
RP-523	3	DC	miniature, right angle	yes	2m	7	PNP, NO sensors only
RP-523-5	3	DC	miniature, right angle	yes	5m	7	PNP, NO sensors only
RP-524	3	DC	miniature, right angle	yes	2m	7	NPN, NO sensors only
RP-524-5	3	DC	miniature, right angle	yes	5m	7	NPN, NO sensors only
RP-526	4	DC	straight	no	2m	3	12mm/18mm/30mm sensors
RP-526-5	4	DC	straight	no	5m	3	12mm/18mm/30mm sensors
RP-528	4	DC	straight	no	2m	-	5mm/8mm sensors
RP-529	4	DC	right angle	no	2m	7	5mm/8mm sensors
RP-530	4	DC	right angle	no	2m	2	12mm/18mm/30mm sensors
RP-530-5	4	DC	right angle	no	5m	2	12mm/18mm/30mm sensors
RP-531	4	DC	right angle	yes	2m	2	NPN, 12mm/18mm/30mm
RP-531-5	4	DC	right angle	yes	5m	2	NPN, 12mm/18mm/30mm
RP-532	4	DC	right angle	yes	2m	2	PNP, 12mm/18mm/30mm
RP-533	4	DC	right angle	yes	2m	2	NPN, 12mm/18mm/30mm



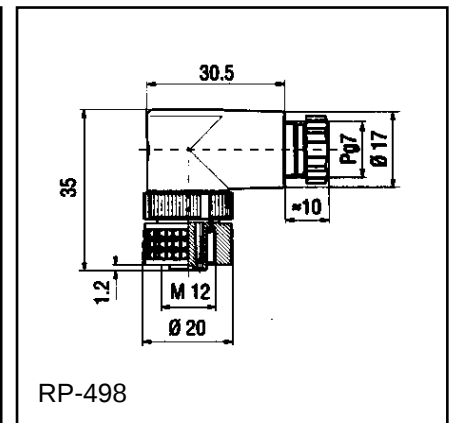
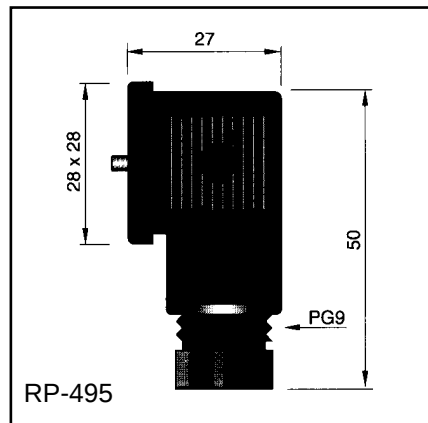
additional figures on next page

Cables, continued

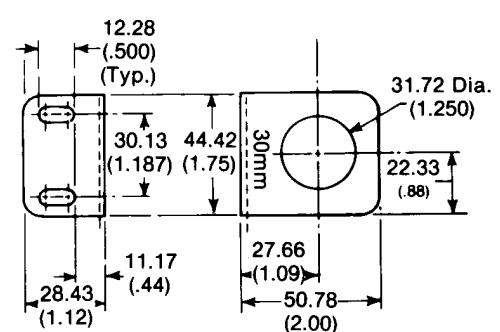
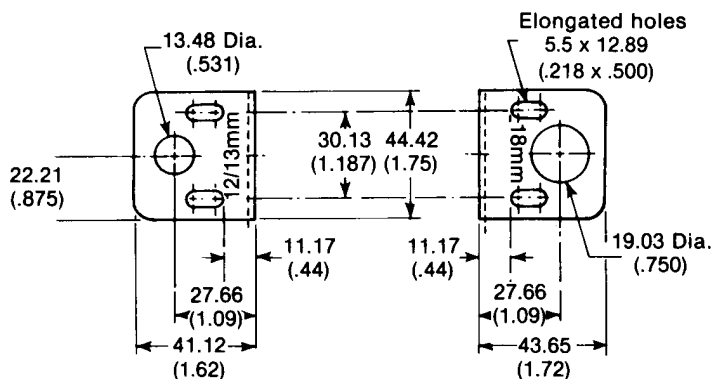


Connectors

Model	Description
RP-495	3mm/5mm connector
RP-496	3mm/5mm connector
RP-497	right angle, with screw terminals
RP-498	straight, with screw terminals
RP-499	18mm right angle connector
RP-500	connector w/LED NPN, NO
RP-501	



Mounting Brackets

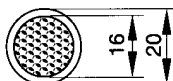




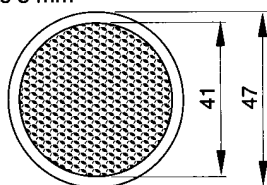
Reflectors

Reflectors	Dimensions	Relative reflectivity
RP-450	20 mm dia. 5 mm thick	31%
RP-451	47 mm dia. 8 mm thick	63%
RP-452	84 mm dia. 8 mm thick	100%
RP-453	72 mm X 32 mm, 6 mm thick	70%
RP-454	90 mm X 40 mm, 5 mm thick	79%

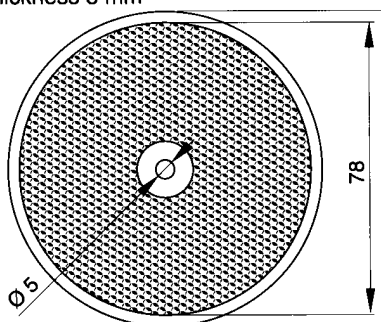
RP-450
Thickness 5 mm



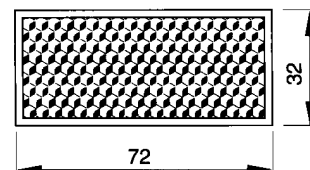
RP-451
Thickness 8 mm



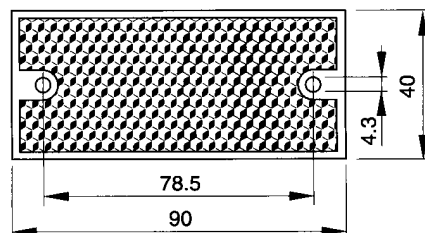
RP-452
Thickness 8 mm



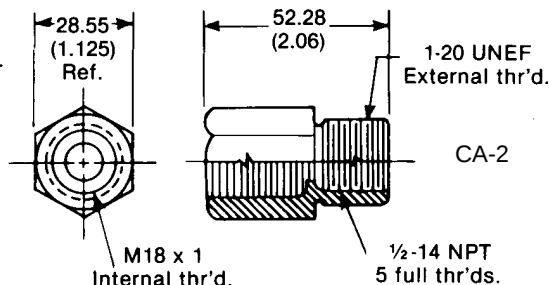
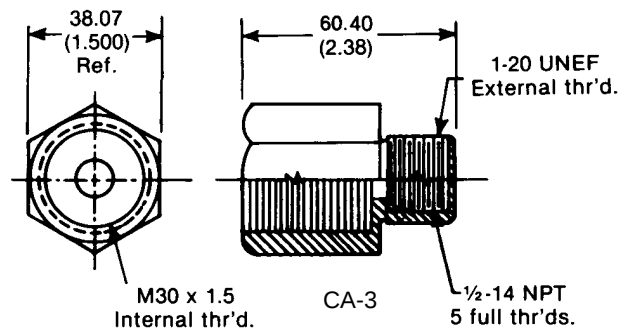
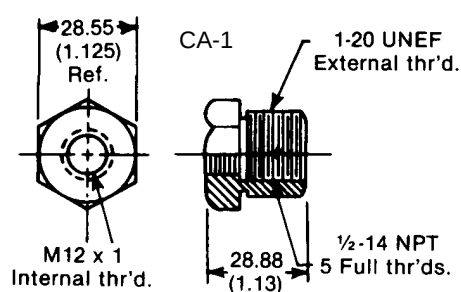
RP-453
Thickness 6 mm



RP-454
Thickness 5 mm



Conduit Adapters



Miscellaneous

Model	Reference	Description
RP-307	page 37	hold-down spring for RP-490 to RP-493
RP-330	page 37	8 pin socket for RP-490 to RP-493
RP-331	page 37	11 pin socket for RP-490 to RP-493
RP-408M	-	8 mm nickel plated brass hex nut
RP-408P	-	8 mm plastic hex nut
RP-412	-	12 mm nickel plated brass hex nut
RP-418M	-	18 mm nickel plated brass hex nut
RP-418P	-	18 mm plastic hex nut
RP-430	-	30 mm nickel plated brass hex nut
RP-570	-	12 mm dust cap
RP-590	page 33	capacitive sensor protective housing, cable units except 40mm
RP-591	page 33	capacitive sensor protective housing, connector units
RP-592	page 33	capacitive sensor protective housing, 40mm units
RP-593	page 33	lock nut for capacitive sensors

KANSON ELECTRONICS, INC.

Model	Page	Model	Page	Model	Page	Model	Page
1217P-1	16	L17-D360-F	19	R30-D068-F	23	RP-526	41
1217P-2	16	L17-D460-F	19	R30-D760-F	23	RP-526-5	41
1217P-3	16	L17-D560-F	19	R30-D768-F	23	RP-527	41
1221-1-A-1-A	16	L17-D660-F	19	R44-D060-F	23	RP-528	41
1248A-1A4P	17	L40-AP10-F	29	R44-D068-F	23	RP-529	41
1250-1-A-1	17	L40-AP60-F	29	R44-D760-F	23	RP-530	41
1250-1-A-2	17	L40-D010-F	16	R44-D768-F	23	RP-530-5	41
1250-1-A-3	17	L40-D060-F	16	R63-D060-F	23	RP-531	41
1250-1-B-1	17	L40-D710-F	16	R63-D068-F	23	RP-531-5	41
1250-1-B-2	17	L40-D760-F	16	R63-D760-F	23	RP-532	41
1250-1-B-3	17	L40-DP10-F	16	R63-D768-F	23	RP-533	41
1250-2-A-1	17	L40-DP60-F	16	RP-307	43	RP-533-5	41
1250-2-A-2	17	L80-AP64-F	29	RP-330	43	RP-534	41
1250-2-A-3	17	L80-D064-F	18	RP-331	43	RP-535	41
1250-2-B-1	17	L80-D764-F	18	RP-408M	43	RP-536	41
1250-2-B-2	17	L80-DP64-F	18	RP-408P	43	RP-537	41
1250-2-B-3	17	MB-1	42	RP-412	43	RP-570	41
CA-1	43	MB-2	42	RP-418M	43	RP-590	33
CA-2	43	OT18-AAR-F	34	RP-418P	43	RP-591	33
CA-3	43	OT18-AARH-F	34	RP-430M	43	RP-592	33
CP18-D060-F	32	OT18-ABE-F	35	RP-450	43	RP-593	33
CP18-D760-F	32	OT18-ABEH-F	35	RP-451	43	T04-D310-F	6
CP30-AP64-F	33	OT18-ABR-F	35	RP-452	43	T04-D410-F	6
CP30-D060-F	32	OT18-ABRH-F	35	RP-453	43	T04-D510-F	6
CP30-D064-F	32	OT18-AP2-F	34	RP-454	43	T04-D610-F	6
CP30-D760-F	32	OT18-AP2H-F	34	RP-490-1	37	T05-D310-F	6
CP30-D764-F	32	OT18-AP4-F	34	RP-490-2	37	T05-D313-F	6
CP40-A160-F	33	OT18-AP4H-F	34	RP-491-1	37	T05-D410-F	6
CP40-A260-F	33	OT18-AR-F	34	RP-491-2	37	T05-D413-F	6
CP40-D060-F	32	OT18-ARH-F	34	RP-491-3	37	T05-D513-F	6
CP40-D760-F	32	OT18M-CAR-F	34	RP-492-1	38	T05-D613-F	6
CT18-D010-F	32	OT18M-CARH-F	34	RP-492-2	38	T06-DN10-F	26
CT18-D310-F	32	OT18M-CBE-F	35	RP-493-1	39	T06-DN18-F	26
CT18-D410-F	32	OT18M-CBEH-F	35	RP-493-2	39	T06-DN60-F	26
CT18-D710-F	32	OT18M-CBR-F	35	RP-496	41	T06-DN68-F	26
CT30-A110-F	33	OT18M-CBRH-F	35	RP-497	41	T08-D310-F	7
CT30-A210-F	33	OT18M-CP2-F	34	RP-498	41	T08-D310S-F	8
CT30-AP14-F	33	OT18M-CP2H-F	34	RP-499	41	T08-D313S-F	8
CT30-D010-F	32	OT18M-CP4-F	34	RP-500	41	T08-D318-F	7
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