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ALARMS & INDICATION

MADE IN USA
Products manufactured in the United States

NEW
Products that are new to the catalog

ESM Series pg. 97

ESB Series pg. 99

ESP Series pg. 101

Kele
www.kele.com

■ Indicates New Products

DESCRIPTION

Model **LPI-1C** is a loop-powered indicator featuring a large 3-1/2 digit LCD display with black digits. The Model **LPI-1C** displays engineering units of °F, °C, PSI, %, or no engineering units if desired. It is directly powered by the 4-20 mA signal and scaled to specifications.

FEATURES

- *Indication of 4-20 mA signal in desired scale*
- *3-1/2 digit LCD display*
- *Snap-in panel mounting*
- *Easy-to-read digits*
- *NEMA 4X enclosure available*
- *Precalibrated for desired range*
- *Negative-to-positive indication*
- *Jumper-selectable engineering unit display*

APPLICATION

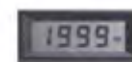- *Temperature*
- *Humidity*
- *Pressure*
- *Differential or static pressure*
- *Kilowatt demand*

LPI-1C-WMB

LPI-1C (typical panel mount)

LPI-1C-E   **LPI-1C-E-DBL**

- *Gallons per minute*
- *Voltage*
- *Current*
- *Many other 4-20 mA applications*

SPECIFICATIONS

Input Signal	4 - 20 mA loop-powered
Input Impedance	300Ω nominal @ 24 VDC
Accuracy	0.1% of scale
Digit Size	0.5" (1.27 cm)
Decimal Point	Three positions or none (1.0.0.0)
Display Color	Black
Range	-1999 to 1999
Operating Humidity	95% non-condensing
Operating Temperature	32° to 122°F (0° to 50°C)
Panel Clearance	1.97" (5.00 cm)
Cutout Requirement	1.00" H x 2.40" W (2.54 x 6.10 cm)
Dimensions	
Display	1.11" H x 2.51" W (2.82 x 6.38 cm)
E (NEMA 4X)	6.0"H x 6.0"W x 3.0"D (15.2 x 15.2 x 7.62 cm)
WMB	2.12"H x 3.12"W x 1.75"D (5.4 x 7.94 x 4.45 cm)
Approvals	RoHS
Weight	2.3 oz (56.7g) (Display only)
Warranty	1 year

WIRING

Connect the **LPI-1C** indicator in series with the 4-20 mA current loop to be measured.

Power supply

Sensor/transmitter   4-20 mA   BAS input or other 4-20 mA load

SPAN   SIG   ZERO

Board unit

Factory calibrated (no field calibration needed)

Connector pins

°F
°C
PSI
%

Back of display unit

Engineering unit jumpers
Unit selected displays to the right of display reading.

ORDERING INFORMATION

Displays are custom calibrated at no charge and require specification of input scale (mA), range, engineering units, and decimal point placement.

MODEL	DESCRIPTION
LPI-1C	3-1/2 digit LCD panel display with black digits*
–	No enclosure
E	3-1/2 digit LCD panel display with NEMA 4X enclosure
WMB	3-1/2 digit LCD panel display with small enclosure
E-DBL	Two 3-1/2 digit LCD panel displays in one NEMA 4X enclosure

| LPI-1C | – | E-DBL | *Example:* **LPI-1C-E-DBL** Two LPI-1C displays mounted in a single enclosure |

RELATED PRODUCTS

GP-3420	LPI-1C, LPI-3C, VPI-1C mounting goof plate, 3.40" x 2.00" (8.6 x 5.1 cm)
GP-3430	LPI-1C, LPI-3C, VPI-1C mounting goof plate, 3.40" x 3.00" (8.6 x 7.6 cm)

ALARMS & INDICATION

3-1/2 DIGIT LCD AMBER / GREEN / RED PANEL DISPLAY
LPI-1C-A, LPI-1C-G, LPI-1C-R

DESCRIPTION

Models LPI-1CA, G, and **R** are 4-20 mA, 24 VDC-powered, brightly lit 3-1/2 digit color LCD displays, available with amber, green, or red digits. **Models LPI-1CA, G,** and **R** also feature jumper-selectable built-in engineering units of °F, °C, PSI, %, or no units. The same 24 VDC power supply can be used to provide power to the 4-20 mA loop and the display.

FEATURES

- *Indication of 4-20 mA signal in desired scale*
- *Bright 3-1/2 digit LCD display*
- *Available in amber, green, and red*
- *Snap-in panel mounting*
- *Easy-to-read digits*
- *NEMA 4X enclosure available*
- *Precalibrated for desired range*
- *Negative-to-positive indication*
- *Jumper selectable engineering unit display*

APPLICATION

- *Temperature*
- *Humidity*
- *Pressure*

LPI-1C-G-WMB

LPI-1C-G (typical panel mount)
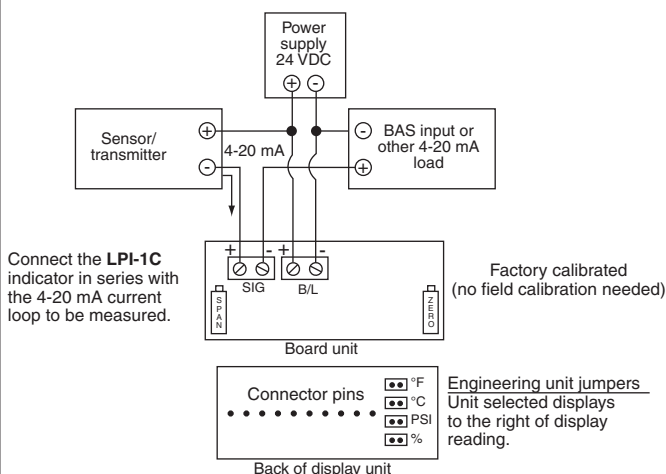
LPI-1C-R-E

LPI-1C-R-E-DBL

- *Differential or static pressure*
- *Kilowatt demand*
- *Gallons per minute*
- *Voltage*
- *Current*
- *Many other 4-20 mA applications*

RoHS ☑

SPECIFICATIONS

Supply VA	24 VDC @ 35 mA
Input Signal	4-20 mA loop powered
Input Impedance	300Ω nominal @ 24 VDC
Accuracy	0.1% of scale
Digit Size	0.5" (1.27 cm)
Decimal Point	Three positions or none (1.0.0.0)
Display Color	Amber
Display Size	0.5" (1.27 cm)
Range	-1999 to 1999
Operating Humidity	95% non-condensing
Operating Temperature	32° to 122°F (0° to 50°C)
Panel Clearance	1.97" (5.00 cm)
Cutout Requirement	1.00"H x 2.40"W (2.54 x 6.10 cm)
Dimensions	
Display	1.11"H x 2.51"W (2.82 x 6.38 cm)
E (NEMA 4x)	6.0"H x 6.0"W x 3.0"D (15.2 x 15.2 x 7.62 cm)
WMB	2.12"H x 3.12"W x 1.75"D (5.4 x 7.94 x 4.45 cm)
DBL	6.0"H x 6.0"W x 3.0"D (15.2 x 15.2 x 7.62 cm)
Approvals	RoHS
Weight	2.3 oz (56.7g) (Display only)
Warranty	1 year

WIRING

Power supply 24 VDC

Sensor/ transmitter   4-20 mA   BAS input or other 4-20 mA load

Connect the **LPI-1C** indicator in series with the 4-20 mA current loop to be measured.

SIG   B/L

SPAN   ZERO

Factory calibrated (no field calibration needed)

Board unit

Connector pins

Engineering unit jumpers
Unit selected displays to the right of display reading.

°F
°C
PSI
%

Back of display unit

ORDERING INFORMATION

Displays are custom calibrated at no charge and require specification of input scale (mA), range, engineering units, and decimal point placement.

MODEL	DESCRIPTION
LPI-1C-A	3-1/2 digit LCD with amber digits*
LPI-1C-G	3-1/2 digit LCD with green digits*
LPI-1C-R	3-1/2 digit LCD with red digits*
–	No enclosure
E	3-1/2 digit LCD panel display with NEMA 4X enclosure
WMB	3-1/2 digit LCD panel display with small enclosure
E-DBL	Two 3-1/2 digit LCD panel displays in one NEMA 4X enclosure

| LPI-1C-A | – | E-DBL | *Example:* **LPI-1C-A-E-DBL** Two amber 3-1/2 digit LCD displays mounted in single enclosure |

RELATED PRODUCTS

GP-3420	LPI-1C, LPI-3C, VPI-1C mounting goof plate, 3.40" x 2.00" (8.6 x 5.1 cm)
GP-3430	LPI-1C, LPI-3C, VPI-1C mounting goof plate, 3.40" x 3.00" (8.6 x 7.6 cm)

January 2012

3

DESCRIPTION

Model LPI-3C is a 4-20 mA, brightly lit, 4-1/2 digit display. Along with standard black digits, amber, green, and red (powered by 24 VDC)are also available. The **Model LPI-3C** also features jumper-selectable built-in engineering units of °F, °C, PSI, %, or no units. For those units with colored digits, the same 24 VDC power supply can be used to provide power to the 4-20 mA loop and the display.

FEATURES

• *Indication of 4-20 mA signal in desired scale*
• *Optional, bright 4-1/2 digit LCD colored display*
• *Available in black, amber, green, or red digits*
• *Snap-in panel mounting*
• *Easy-to-read digits*
• *NEMA 4X enclosure available*
• *Precalibrated for desired range*
• *Negative-to-positive indication*
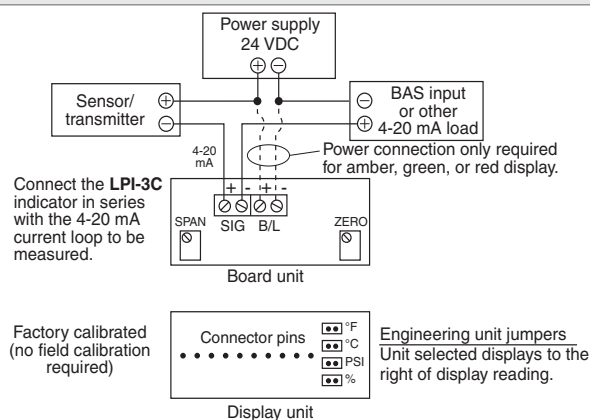• *Jumper-selectable engineering unit display*

LPI-3C-A-WMB

LPI-3C
(typical panel mount)

LPI-3C-G-E

LPI-3C-R-E-DBL

RoHS

APPLICATION

• *Temperature*
• *Humidity*
• *Pressure*
• *Differential or static pressure*
• *Kilowatt demand*
• *Gallons per minute*
• *Voltage*
• *Current*
• *Many other 4-20 mA applications*

SPECIFICATIONS

Supply VA	24 VDC @ 35 mA for colored digits
Input Signal	Loop-powered 4-20 mA signal
Input Impedance	300Ω nominal @ 24 VDC
Accuracy	0.1% FS
Digit Size	0.5" (1.27 cm) LCD
Decimal Point	Four positions or none (1.0.0.0.0)
Range	-19999 to +19999
Operating Humidity	95% non-condensing
Operating Temperature	32° to 122°F (0° to 50°C)
Panel Clearance	1.97" (5.00 cm)
Cutout Requirement	1.00"H x 2.40"W (2.54 x 6.10 cm)
Dimensions	
Display	1.11"H x 2.51"W (2.82 x 6.38 cm)
E (NEMA 4X)	6.0"H x 6.0"W x 3.0"D
	(15.2 x 15.2 x 7.62 cm)
WMB	2.12"H x 3.12"W x 1.75"D
	(5.4 x 7.94 x 4.45 cm)
Approvals	RoHS, Except: (LPI-3CA)
Weight	2.3 oz (56.7g) (Display only)
Warranty	1 year

WIRING

Power supply 24 VDC

Sensor/ transmitter

BAS input or other 4-20 mA load

Power connection only required for amber, green, or red display.

4-20 mA

Connect the **LPI-3C** indicator in series with the 4-20 mA current loop to be measured.

SPAN SIG B/L ZERO

Board unit

Factory calibrated (no field calibration required)

Connector pins

°F
°C
PSI
%

Engineering unit jumpers
Unit selected displays to the right of display reading.

Display unit

ORDERING INFORMATION

Displays are custom calibrated at no charge and require specification of input scale (mA), range, engineering units, and decimal point placement.

MODEL	DESCRIPTION		
LPI-3C	4-1/2 digit LCD panel display*		
—	4-1/2 digit display with black digits		
A	4-1/2 digit display with amber digits, (This unit not RoHS compliant)		
G	4-1/2 digit display with green digits		
R	4-1/2 digit display with red digits		
	–	No enclosure	
	E	4-1/2 digit LCD panel display with NEMA 4X enclosure	
	WMB	4-1/2 digit LCD panel display with small enclosure	
	E-DBL	Two 4-1/2 digit LCD panel displays in a single NEMA 4X enclosure	

| LPI-3C | — | A | — | E-DBL | *Example:* **LPI-3C-A-E-DBL** Two amber 4-1/2 digit LCD displays mounted in a single enclosure. |

RELATED PRODUCTS

GP-3420	LPI-1C, LPI-3C, VPI-1C mounting goof plate, 3.40" x 2.00" (8.6 x 5.1 cm)
GP-3430	LPI-1C, LPI-3C, VPI-1C mounting goof plate, 3.40" x 3.00" (8.6 x 7.6 cm)

KELE 3-1/2 DIGIT LARGE BLACK/RED/GREEN/AMBER PANEL DISPLAY
LPI-4

DESCRIPTION

The **Model LPI-4** loop-powered indicator features a large 1" (2.54 cm) 3-1/2 digit display. It is designed to display any 4-20 mA signal in desired scale. The **Model LPI-4** is powered directly from the 4-20mA signal loop, so there is no need for a power supply for the black digit model. It is also available in a 24 VDC powered version with red, green, or amber digits.

FEATURES

• *Indication of 4-20 mA signal in desired scale*
• *3-1/2 digit LCD display*
• *Large, easy-to-read digits*
• *Available in either black, red, green, or amber digits*
• *Precalibrated for desired range*
• *Snap-in panel mount with retainer*
• *Negative range indicator*
• *Includes weather-resistant seal*
• *Optional jumper-selectable display units °F, °C, %, PSI*

APPLICATION

• *Temperature*
• *Humidity*
• *Pressure*
• *Killowatt demand*
• *Gallons per minute*
• *Voltage/current*

LPI-4

LPI-4G

LPI-4R

LPI-4A

RoHS ☑

SPECIFICATIONS

Supply VA	Black Loop powered Red/Green/ Amber 24 VDC, 35 mA max
Input Signal	4-20 mA
Input Impedance	300Ω
Accuracy	+/- 0.05% of scale plus one digit
Digit Count	3-1/2 digits
Digit Size	1" (2.54 cm)
Decimal Point	Three positions or none (1.0.0.0)
Range	-1999 to 1999
Operating Humidity	95% non-condensing
Operating Temperature	32° to 122°F (0° to 50°C)
Cutout Requirement	1.77" x 3.62" (4.5 X 9.2 cm)
Dimensions	1.89"H x 3.78"W x 1.8"D (4.8 x 9.6 x 4.6 cm)
Approvals	RoHS
Weight	4 oz (113g)
Warranty	1 year

WIRING

Power supply 24 VDC

Sensor/ transmitter

BAS input or other 4-20 mA load

SIG

SPAN   ZERO

LPI-4

Power supply 24 VDC

Sensor/ transmitter
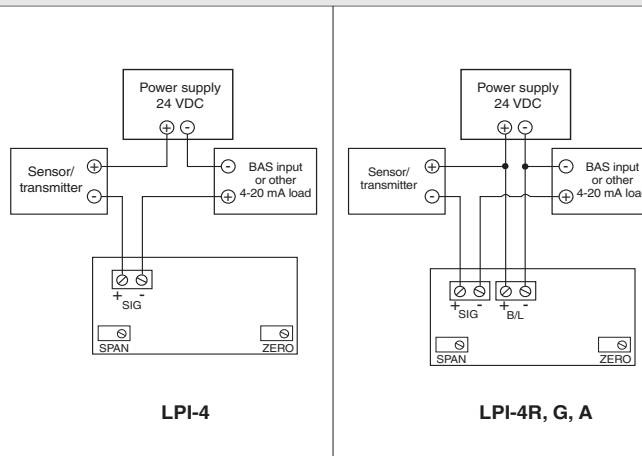
BAS input or other 4-20 mA load

SIG   B/L

SPAN   ZERO

LPI-4R, G, A

ORDERING INFORMATION

Displays are custom calibrated at no charge and require specification of input scale (mA), range, engineering units, and decimal point placement.

MODEL	DESCRIPTION
LPI-4	3-1/2 digit black panel display
LPI-4R	3-1/2 digit red panel display
LPI-4G	3-1/2 digit green panel display
LPI-4A	3-1/2 digit amber panel display

RELATED PRODUCTS

GP-5132	LPI-4 mounting goof plate, 5.13" x 3.25" (13.0 x 8.3 cm)

January 2012

DESCRIPTION

The **LPI-5** loop-powered indicator features a small 0.37" (0.94 cm), 3-1/2 digit, black LCD or red LED display. The meter displays any 4-20 mA signal in desired scale. The **Model LPI-5** is powered directly from the 4-20 mA signal loop, so the black LCD display and red LED display do not require a separate power supply.

FEATURES

- *Indication of 4-20 mA signal in desired scale*
- *Loop powered*
- *3-1/2 digit display*
- *Snap-in panel mounting*
- *Small, easy-to-read display*
- *Precalibrated for desired range*
- *Selectable decimal point location*
- *Positive-to-negative indication (black LCD display)*

APPLICATION

- *Temperature*
- *GPM*
- *Humidity*
- *Kilowatt demand*
- *Pressure*
- *Voltage/Current*

LPI-5

LPI-5R

SPECIFICATIONS

Input Signal	4-20 mA	**Operating Humidity**	95% RH non-condensing
Input Impedance		**Operating Temperature**	32° to 130°F (0° to 54°C)
Black	300Ω	**Cutout Requirement**	
Red	380Ω	Black	0.86"H x 1.57"W (2.2 x 4.0 cm)
Accuracy	+/- 0.1% of scale plus one digit	Red	0.8"H x 1.3"W (2.0 x 3.3 cm)
Digit Count	3-1/2 digits max	**Dimensions**	
Digit Size	0.37" (0.94 cm)	Black	0.95"H x 1.73"W x 1.1"D
Decimal Point	Three positions of none (1.0.0.0)		(2.4 x 4.4 x 2.8 cm)
Display Color	Black, Red	Red	1.28"H x 1.82"W x 1.6"D
Engineering Units	(Black only) MΩ, kΩ, °C, m, V, °F, A, µ		(3.25 x 4.64 x 4.0 cm)
Range		**Approvals**	RoHS
Black	-1999 to 1999, min span 100 digit counts	**Weight**	2 oz (57g)
Red	0 to 1999	**Warranty**	1 year
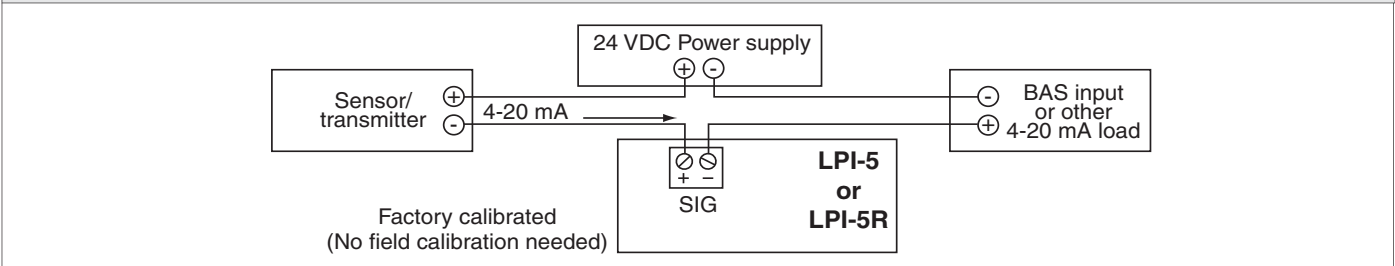
WIRING

24 VDC Power supply
⊕ ⊖

Sensor/
transmitter
⊕
⊖
← 4-20 mA →

⊖
BAS input
or other
⊕ 4-20 mA load

⊘ ⊘
+ −
SIG

LPI-5
or
LPI-5R

Factory calibrated
(No field calibration needed)

ORDERING INFORMATION

Displays are custom calibrated at no charge and require specification of input scale (mA), range, engineering units, and decimal point placement.

MODEL	DESCRIPTION
LPI-5	3-1/2 digit small black LCD panel display
LPI-5R	3-1/2 digit small red LED panel display

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3-1/2 DIGIT LCD PANEL DISPLAY
VPI SERIES

DESCRIPTION

The **VPI Series** is a voltage (0-5V, 0-10V) input 24 VDC powered, 3-1/2 digit display. The **VPI** Series uses a voltage signal of 0-5 or 0-10 VDC that can be scaled to a span of 2000 digits within a range of -1999 to 1999. This display also features jumper selectable, built-in engineering units. The **VPI-4** offers large, easy to read 1" (2.54 cm) digits.

FEATURES

- *0-5 or 0-10 VDC input signal*
- *3-1/2 digit, easy to read LCD display (VPI-1, VPI-4)*
- *4-1/2 digit, easy to read LCD display (VPI-3)*
- *Available in black amber, green and red digits*
- *Snap-in panel mounting*
- *NEMA 4 enclosure available*
- *Precalibrated before shipping*
- *Positive-to-negative indication*
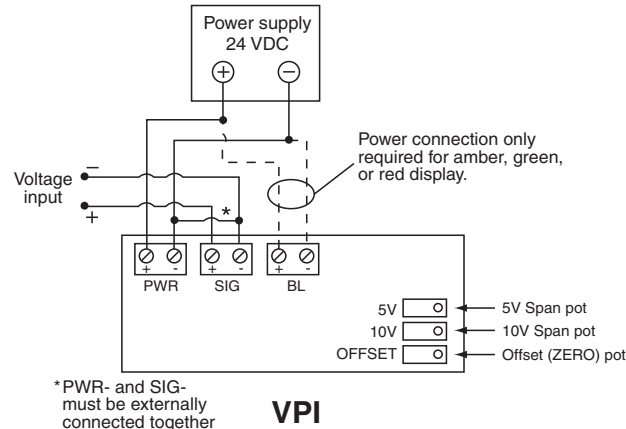- *Jumper selectable engineering unit display of °F, °C, PSI, %*

VPI-1-C-WMB

VPI-4

VPI-1-C-G (typical panel mount)

VPI-1-C-R-E   **VPI-1-C-R-E-DBL**

☑ RoHS

SPECIFICATIONS

Supply Voltage	
Black	24 VDC @ 10 mA
Color	24 VDC @ 35 mA
Input Signal	0-5 VDC or 0-10 VDC
Input Impedance	400 kΩ
Accuracy	0.1% of scale plus one digit
Digit Count	
VPI-1, VPI-4	3-1/2 digits
VPI-3	4-1/2 digits
Digit Size	
VPI-1, VPI-3C	0.5" (1.27 cm)
VPI-4	1.0" (2.54 cm)
Digit Span (VPI-3)	2000 digits (20000 digits)
Decimal Point (VPI-3)	Three positions or none, (Four positions or none)
Display Color	black, amber, green, red
Zero Range (VPI-3)	-1999 to 1999, (-19999 to 19999)
Operating Humidity	95% non-condensing
Operating Temperature	32° to 122°F (0° to 50°C)
Panel Clearance	1.0" (5.08 cm)
Cutout Requirement	
VPI-1C	1.00"H x 2.40"W (2.54 x 6.10 cm)
VPI-4	1.77"H x 3.62"W (4.5 x 9.2 cm)
Dimensions	
VPI-1C, VPI-3C	1.10"H x 2.51"W (2.82 x 6.38 cm)
VPI-4	1.89"H x 3.62"W (4.8 x 9.6 cm)
E (NEMA4X)	6.0"H x 6.0"W x 3"D (15.2 x 15.2 x 7.6 cm)
WMB	2.12"H x 3.12"W x 1.75"D (5.4 x 7.94 x 4.45 cm)
Enclosure Rating	NEMA 1, NEMA 4X
Approvals	RoHS
Weight	4 oz (113g)
Warranty	1 year

APPLICATION

- *Temperature*
- *Humidity*
- *Pressure*
- *Gallons per minute*
- *Voltage*
- *Kilowatt demand*

WIRING

Power supply 24 VDC

Power connection only required for amber, green, or red display.

Voltage input

PWR   SIG   BL

5V — 5V Span pot
10V — 10V Span pot
OFFSET — Offset (ZERO) pot

*PWR- and SIG- must be externally connected together

VPI

ORDERING INFORMATION

Displays are custom calibrated at no charge and require specification of input scale (VDC), range, engineering units, and decimal point placement.

MODEL			DESCRIPTION
VPI-4			3-1/2 digit panel display*, 1" (2.54 cm) digits
VPI-1C			3-1/2 digit panel display*, 0.5" (1.27 cm) digits
VPI-3C			4-1/2 digit panel display*, 0.5" (1.27 cm) digits
	–		3-1/2 digit display with black digits
	A		3-1/2 digit display with amber digits
	G		3-1/2 digit display with green digits
	R		3-1/2 digit display with red digits
		–	No enclosure
		E	LCD panel display with NEMA 4X enclosure (VPI-1C and VPI-3C only)
		WMB	LCD panel display with small enclosure (VPI-1C and VPI-3C only)
		E-DBL	Two LCD panel displays in one NEMA 4X enclosure (VPI-1C and VPI-3C only)

VPI-1C	–	A	–	E-DBL	*Example:* **VPI-1C-A-E-DBL** Two amber 3-1/2 digit displays mounted in a single enclosure

RELATED PRODUCTS

GP-3420	LPI-1C, LPI-3C, VPI-1C mounting goof plate, 3.40" x 2.00" (8.6 x 5.1 cm)
GP-3430	LPI-1C, LPI-3C, VPI-1C mounting goof plate, 3.40" x 3.00" (8.6 x 7.6 cm)

January 2012

KELE BIG DISPLAY READOUT, 3-1/2 DIGIT LED, RED/BLUE/GREEN
BDR SERIES

DESCRIPTION

The **BDR** Big Display Readout has large 2.3" size LED digits. It provides 3-1/2 digits and comes in three bright LED colors: red, green or blue. The **BDR** has a selectable decimal point position and accommodates negative sign readouts. The readouts are in linear proportion to the 4-20mA, 0-10VDC, 0-5VDC signal inputs or a voltage monitor input from 0-20VDC. These displays are easy to field calibrate with non-interactive zero and span pots as well as free pre-calibration service from Kele at time of order.

FEATURES

- *Large 2.3" (5.8cm) digital display*
- *LED colors in red, green or blue*
- *3-1/2 digit with negative signal as needed*
- *Standard signal inputs: 4-20mA, 0-10VDC, 0-5VDC*
- *Wall, Ceiling or Panel mount*
- *Non-interactive zero and span pots*
- *Pre-calibration*

BDR-G

BDR-B

BDR-R

Mounting Brackets included

RoHS

SPECIFICATIONS

Supply Voltage	90-240 VAC, 12 VA / 10.5 - 30 VAC/VDC 6VA
Input Current	4-20 mA, 300Ω
Input Voltage DC	0-5 VDC, 0-10 VDC, 1 MΩ
Input Monitor	DC power (no offset, 10 MΩ 0-200 mVDC, 0-2 VDC, 0-20 VDC
Accuracy	+/- 1% full scale plus 1 count
Digit Span	3-1/2 digit
Decimal Point	Off, DP1, DP2, DP3 (1999, 199.9, 19.99, 1.999)
Display Color	Red, Green, Blue
Display Size	2.3" (5.8 cm)
Display Type	Seven-segment LED
Range	-1999 to 1999
Calibration	Zero and span, non-interactive
Operating Humidity	5-95% RH non-condensing
Operating Temperature	14 to 122F (-10 to 50C)
Cutout Requirement	4.0"H x 10.4"W x 2.0"D (10.0 x 26.4 x 5.0 cm)
Dimensions	4.2"H x 10.6"W x 2.2"D in (10.6 x 27.0 x 5.5 cm)
Enclosure Options	NEMA 1, aluminum and plastic
Mounting	Panel: Steel U-bracket Wall/ceiling: Steel swivel bracket
Approvals	RoHS
Weight	2.8 lb (1.3 kg)
Warranty	1 year

WIRING

Calibration pots (use varies with source; see installation manual)

DCV SPAN LPI ZERO SPAN VPI 5V 10V ZERO SPAN SPAN

SPAN OR ZERO ADJ.

LPI OFFSET
+ −

★ LPI
VPI
DCV
FUNCTION

DP1
DP2
DP3
DECIMAL

LPI = Current signal
VPI = Voltage signal
DCV = Voltage monitor
DP = Decimal point placement
LPI OFFSET = Negative (−) sign Choice for V or I signal

*LPI function disables RANGES switch

BDR-999-[R/G/B]-24
10.5 to 30 VAC/VDC

★ RANGES
VPI 200mV 5V 10V
DCV 200mV 2V 20V

DCV− VPI LPI
IN− IN+ SIG− SIG+ SIG− SIG+

AC POWER
90V-250V
AC AC

GND

INPUT

Power supply monitor −
0-(0.2, 2, or 20) VDC +

Voltage signal in −
0-5 or 0-10 VDC +

Current signal in −
4-20 mA +

ORDERING INFORMATION

Displays are custom calibrated at no charge and require specification of input scale (mA, VDC), range, engineering units, and decimal point placement.

MODEL	DESCRIPTION
BDR-999-R-24	Red LED 3-1/2 digit display, 2.3" (5.8 cm) high 24 VAC/VDC
BDR-999-G-24	Green LED 3-1/2 digit display, 2.3" (5.8 cm) high 24 VAC/VDC
BDR-999-B-24	Blue LED 3-1/2 digit display, 2.3" (5.8 cm) high 24 VAC/VDC
BDR-999-R-120	Red LED 3-1/2 digit display, 2.3" (5.8 cm) high 120 VAC
BDR-999-G-120	Green LED 3-1/2 digit display, 2.3" (5.8 cm) high 120 VAC
BDR-999-B-120	Blue LED 3-1/2 digit display, 2.3" (5.8 cm) high 120 VAC

ALARMS & INDICATION

PANELPILOT SMART GRAPHICAL DISPLAY
SGD-24, -28

DESCRIPTION

The **PanelPilot Smart Graphics Display** is a configurable panel-mount volt meter with selectable graph colors, input signal scales, and meter display types. It can be used to display any proportional control or transmitter signal represented by a voltage span within 0 to 40 VDC. It is easily and quickly field-configured using simple software, via a USB cable, or is available preconfigured from Kele. It has a customizable splash screen and comes in a 2.4" or 2.8" screen size. A NEMA 4X enclosure is also available which can house one or two displays, preassembled at Kele or separately available for field installation.

SGD-28-M-C-E

SGD-28-M

NEW!

CE

RoHS

FEATURES

• **2.4" or 2.8" color TFT screen for high visibility**
• **Free PanelPilot software saves money**
• **Simple USB cable connection for quick setup**
• **6 standard meter types, selectable colors, scales, and labels for display flexibility**
• **Splash screen accepts common picture files allows customization**
• **Snap-in panel mount for fast installation**
• **NEMA 4X enclosure option with single or double display mounting**

APPLICATION
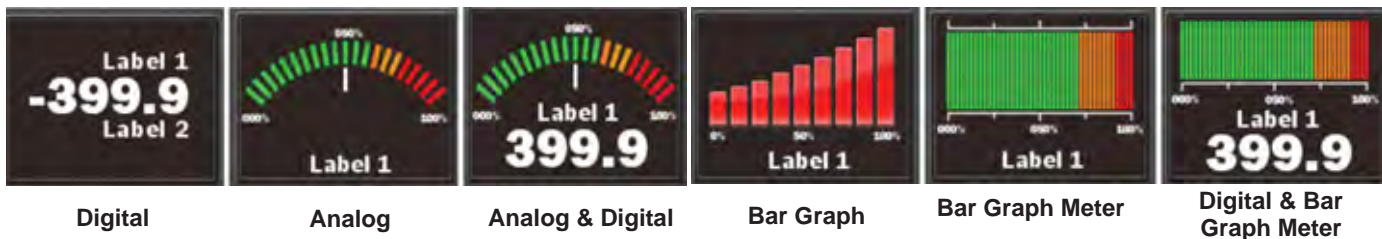
• **Temperature**
• **Humidity**
• **Pressure**
• **Air quality**
• **Valve or damper position**
• **Air or water flow**
• **Water level**
• **Light level**
• **Motor speed**
• **Any 4-20 mA or 0-10 VDC transmitter signal**

METER CHOICES

Digital	Analog	Analog & Digital	Bar Graph	Bar Graph Meter	Digital & Bar Graph Meter

SPECIFICATIONS

Supply VA	4 to 30 VDC	**SGD-28**	2.15"H x 3.43"W (5.45 x 8.70 cm) 0.11" (3 mm) maximum panel thickness
Input Signal	0/2-10 VDC, 4-20mA (with resistor) 0-40 VDC max		
Input Impedance	110 mA @ 5 VDC	**Dimensions**	
Wire Type	Screw terminals, 16 to 26 AWG	SGD-24	1.9"H x 3.0"W x 0.7"D (4.8 x 7.6 x 1.8 cm)
Accuracy	0.05% typical, 0.1% maximum		
Display Type		SGD-28	2.3"H x 3.4"W x 0.7"D (5.7 x 8.7 x 1.8 cm)
SGD-24	2.4 inch diagonal 320 x 240 pixels,16-bit color	NEMA 4X enclosure	6.0"H x 6.0"W x 3.0"D (15.2 x 15.2 x 7.6 cm)
SGD-28	2.8 inch diagonal 320 x 240 pixels, 16-bit color	**Enclosure Options**	NEMA 1 standard NEMA 4X optional
Interface	Compatible with Windows XP, 2000, Vista, Windows 7, mini USB cable connection	**Additional Specifications**	
			Meter choices- Bar graph, analog needle, digital readout, combinations
Sample Intervals	3 samples per second	**Approvals**	CE, RoHS
Operating Temperature	32° to 104°F (0° to 40°C)	**Weight**	
Panel Cutout		SGD-24	0.11 lb (.05 kg)
SGD-24	1.81"H x 2.91"W (4.60 x 7.40 cm) 0.11" (3 mm) maximum panel thickness	SGD-28	0.14 lb (.06 kg)
		Warranty	1 year

January 2012

WIRING

*Order Separately

1-5 V

++ - +
1 2 3 4

1 = IN2 Input 2 (40 VDC max) (not used)
2 = IN1 Input 1 (40 VDC max)
3 = OV Common
4 = v+ Power (4-30 VDC)

* 250Ω

BAS Input
4-20 mA

4-20 mA
Loop-powered
Transmitter

*Meter must be configured for 1-5 V
input for 4-20 mA input signal, when
using the 250Ω resistor. If using a 500Ω
resistor, configure the meter for 2-10 V.

24 VDC
Power Supply

*24 VDC POWER SUPPLY MUST BE
FLOATING (NOT GROUNDED TO
BAS COMMON)

4-20 mA Wiring

++ - +
1 2 3 4

BAS Input
0-10V

0-10 VDC
Transmitter

SIG
PWR

24 VDC
Power Supply

0-10 VDC Wiring

ORDERING INFORMATION

Note: Custom Calibrated Panels,
require completion of the panel
configuration worksheet. Work-
sheet available on Kele website
www.kele.com

MODEL	DESCRIPTION
SGD-24-M	Smart Graphics Display, 2.4 inch
SGD-24-M-C	Smart Graphics Display, 2.4 inch, custom calibrated
SGD-24-M-C-E	Smart Graphics Display, 2.4 inch, calibrated, enclosure
SGD-24-M-C-XK	Smart Display, 2.4 inch, calibrated, custom graphic
SGD-24-M-C-XK-E	Smart Display, 2.4 inch, calibrated, custom graphic, enclosure
SGD-24-M-CEDBL	Smart Display, 2.4 inch, calibrated, enclosure, double
SGD-24-MCXKEDBL	Smart Display, 2.4 inch, calibrated, custom graphic, enclosure, double
SGD-28-M	Smart Graphics Display, 2.8 inch
SGD-28-M-C	Smart Graphics Display, 2.8 inch, custom calibrated
SGD-28-M-C-E	Smart Graphics Display, 2.8 inch, calibrated, enclosure
SGD-28-M-C-XK	Smart Display, 2.8 inch, calibrated, custom graphic
SGD-28-M-C-XK-E	Smart Display, 2.8 inch, calibrated, custom graphic, enclosure
SGD-28-M-CEDBL	Smart Display, 2.8 inch, calibrated, enclosure, double
SGD-28-MCXKEDBL	Smart Display, 2.8 inch, calibrated, custom graphic, enclosure, double

ACCESSORIES

|	
SFP66-258E	Panel for SGD-24, single
SFP66-258F	Panel for SGD-24, double
SFP66-258C	Panel for SGD-28, single
SFP66-258D	Panel for SGD-28, double
USB-A-MF	USB Cable Type A TO Mini B
P6063C-P258	6x6x3 NEMA4X Encl Clear Hinge Cover w/ SOPK Kit
250R-3-1	250 OHM 3 WATT 1% Resistor Long Leads

ALARMS & INDICATION

PULSE OR RUN-TIME ACCUMULATOR DISPLAY
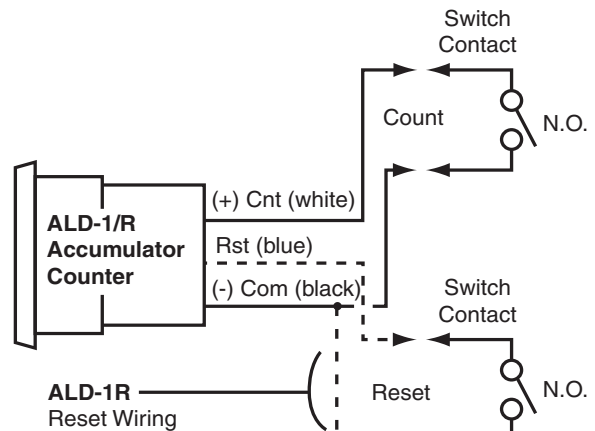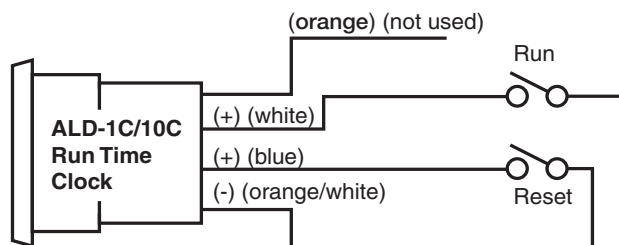### *ALD-1*

DESCRIPTION

The **ALD-1** is a 5-1/2 digit LCD resettable accumulator or run-time counter. The lithium battery provides years of trouble-free service. Two wires are all that are necessary to totalize consumption, flow data, or run-time data. No external power supply is necessary.
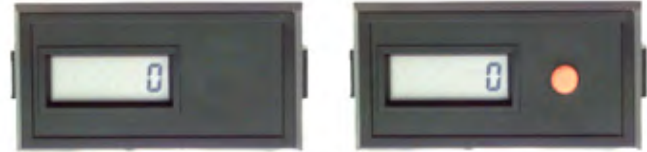
FEATURES

- *Resettable accumulator or run-time counter*
- *Long life lithium battery*
- *No external power supply*

WIRING

SPECIFICATIONS

Battery Life	10 years nominal	**Reset**	Push button or remote contact
Input	Contact or solid-state switch	**Operating Temperature**	32° to 122°F (0° to 50°C)
Count Speed		**Panel Cutout**	1.0"H x 2.0"W (2.54 x 5.08 cm)
Accumulator	100 counts per second	**Weight**	2.1 oz (59.5g)
Timer counts	one-hour or 0.1-hour increments	**Warranty**	2 years
Digit Size	0.2" (0.51 cm) high	**Bezel**	1.1"H x 2.09"W x 1.72"D
Display	5-1/2 digit		(2.79 x 5.3 x 4.37 cm)
Range	0-199999		

ORDERING INFORMATION

MODEL	DESCRIPTION
ALD-1	LCD push-button resettable accumulator counter
ALD-10C	LCD run-time remote reset clock, one-hour increments
ALD-1C	LCD run-time remote reset clock, 0.1-hour increments
ALD-1R	LCD remote reset accumulator counter

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DESCRIPTION

The **TWS Series Tower Lights** enable stacking of up to five signaling devices. Each device has its own set of contacts. Starting with a bottom module, up to five devices can be added in any combination of continuous and flashing incandescent lights, continuous and flashing LED lights, and Xenon strobes. Each stack can be capped with a horn. Each light comes in a variety of colors, and all lamps are replaceable. Several wall- and pedestal-mounting configurations are available.

OPERATION

- *Horns*
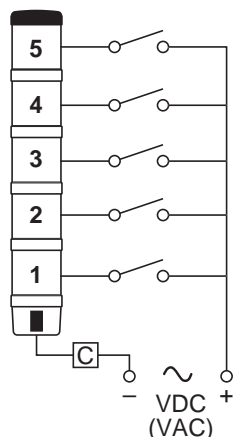- *IP20 upward mount*
- *IP24 downward mount*
- *Ratings IP66*

Stack with TWS-BS

Stack with TWS-BP1

Stack with TWS-KIT

Two stacks with TWS-BP2
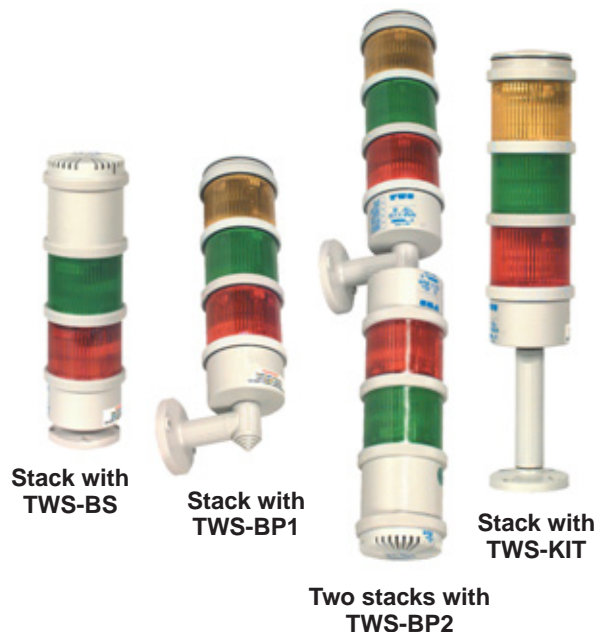
WIRING

SPECIFICATIONS

Supply Voltage	12-24 VAC/VDC, 24-240 VAC	**Operating Temperature**	-22° to 140°F (-30° to 60°C)
Voltage Range	24 VAC/ VDC, 110 VAC, 24 VAC,	Strobe	14° to 122°F (-10° to 50°C)
	24 VDC	**Dimensions**	
Power		Base	2.68"H x 2.95" dia (6.8 x 7.5 cm)
Light module	5W 12-120 VAC/VDC (7W 240 VAC)	Light	2.72"H x 2.95" dia (6.9 x 7.5 cm)
Horn module	12V-2.7 mA, 24V-6 mA, 110V-4	Horn	3.11"H x 2.95" dia (7.9 x 7.5 cm)
	mA,240V-8.5 mA	**Mounting**	Wall, two holes; surface, four holes;
Color	Blue, Amber, Red, Green, Yellow,		2.13" (5.4 cm) centers
	Clear, clear	**Enclosure**	IP66
Flash Rate		Horn	IP20 upward mount
Incandescent LED	110 fpm ±20 fpm		Ip 24 downward mount
Strobe	65 fpm ±10 fpm (24 VAC/VDC)	**Approvals**	CE UL Listed
	90 fpm ±20 fpm (110/240 VAC)	**Warranty**	1 year
Horn Loudness	Medium, 76-86 dB		

ORDERING INFORMATION

Steps	Direction	Part Number	Description				
1	Select Module and Cap (1 required)	TWS-BC	Bottom module and cap				
2	Select Mounting Base (1 required)	TWS-BS	Base with gasket				
		TWS-BP1	Single wall-mount base				
		TWS-BP2	Double wall-mount base				
		TWS-KIT	Base and stem extension				
3	Select Lighting Modules (5 maximum)	Module Voltage Range	Color	Continuous Incandescent	Flashing Incandescent	Continuous LED	Flashing LED	Strobe

Module Voltage Range	Color	Continuous Incandescent	Flashing Incandescent	Continuous LED	Flashing LED	Strobe
			Part Number			
24 VAC	BLUE	TWS-F1G	TWS-L1G	TWS-FL1G	TWS-LL1G	TWS-X1G
24 VDC	BLUE	TWS-F1N	TWS-L1N	TWS-FL1N	TWS-LL1N	TWS-X1N
110 VAC	BLUE	TWS-F1A	TWS-L1A	TWS-FL1A	TWS-LL1A	TWS-X1A
24 VAC	AMBER	TWS-F2G	TWS-L2G	TWS-FL2G	TWS-LL2G	TWS-X2G
24 VDC	AMBER	TWS-F2N	TWS-L2N	TWS-FL2N	TWS-LL2N	TWS-X2N
110 VAC	AMBER	TWS-F2A	TWS-L2A	TWS-FL2A	TWS-LL2A	TWS-X2A
24 VAC	RED	TWS-F3G	TWS-L3G	TWS-FL3G	TWS-LL3G	TWS-X3G
24 VDC	RED	TWS-F3N	TWS-L3N	TWS-FL3N	TWS-LL3N	TWS-X3N
110 VAC	RED	TWS-F3A	TWS-L3A	TWS-FL3A	TWS-LL3A	TWS-X3A
24 VAC	GREEN	TWS-F4G	TWS-L4G	TWS-FL4G	TWS-LL4G	TWS-X4G
24 VDC	GREEN	TWS-F4N	TWS-L4N	TWS-FL4N	TWS-LL4N	TWS-X4N
110 VAC	GREEN	TWS-F4A	TWS-L4A	TWS-FL4A	TWS-LL4A	TWS-X4A
24 VAC	YELLOW	TWS-F5G	TWS-L5G	TWS-FL5G	TWS-LL5G	TWS-X5G
24 VDC	YELLOW	TWS-F5N	TWS-L5N	TWS-FL5N	TWS-LL5N	TWS-X5N
110 VAC	YELLOW	TWS-F5A	TWS-L5A	TWS-FL5A	TWS-LL5A	TWS-X5A
24 VAC	CLEAR	TWS-F6G	TWS-L6G	-	-	TWS-X6G
24 VDC	CLEAR	TWS-F6N	TWS-L6N	-	-	TWS-X6N
110 VAC	CLEAR	TWS-F6A	TWS-L6A	-	-	TWS-X6A

Steps	Direction	Part Number	Description
4	Select Horn (1 maximum)	24 VAC	TWS-AG
		24 VDC	TWS-AN
		110 VAC	TWS-AA

RELATED PRODUCTS

TWS-BA15D-A	110VAC Replacement IC Lamp
TWS-BA15D-G	24VAC Replacement IC Lamp
TWS-BA15D-N	24VDC Replacement IC Lamp
TWS-LED1-A	110VAC Blue replacement LED
TWS-LED1-G	24VAC Blue replacement LED
TWS-LED1-N	24VDC Blue replacement LED
TWS-LED2-A	110VAC Amber replacement LED
TWS-LED2-G	24VAC Amber replacement LED
TWS-LED2-N	24VDC Amber replacement LED
TWS-LED3-A	110VAC Red replacement LED
TWS-LED3-G	24VAC Red replacement LED
TWS-LED3-N	24VDC Red replacement LED
TWS-LED4-A	110VAC Green replacement LED
TWS-LED4-G	24VAC Green replacement LED
TWS-LED4-N	24VDC Green replacement LED
TWS-LED5-A	110VAC Yellow replacement LED
TWS-LED5-G	24VAC Yellow replacement LED
TWS-LED5-N	24VDC Yellow replacement LED
TWS-LRX2J	Universal Xenon replacement- requires solder connection

January 2012

KELE REMOTE ALARM INDICATION STATION
RAD-1

DESCRIPTION

The **RAD-1** is a wall mounted remote alarm indication station mounted on a stainless steel plate. Any contact closure alarm initiating device that can switch 24VAC or DC can be used with the **RAD-1**.

SEQUENCE OF OPERATION

When 24 VAC or VDC is applied to the **RAD-1** through an alarm-initiating device, the red alarm LED will light, the horn will sound, and the alarm status relay will energize. If an initial alarm delay has been set, when 24 VAC or VDC is applied, the red alarm LED will blink until the delay period has expired. Then it will light continuously, the horn will sound continuously, and the relay will energize. If power is interrupted, the RAD-1 will reset to normal state.

During an alarm (24V applied to the **RAD-1**), the horn may be silenced by momentarily pressing the silence switch. The alarm LED will remain lighted, and the alarm status relay will remain energized when the horn is silenced until the alarm condition is cleared (24V removed). If an alarm repeat after silence time has been set, the horn will resound at the end of the repeat time. If the relay-follows-horn jumper is installed, the alarm status relay will de-energize when the horn is silenced and re-energize when the horn sounds at the end of the repeat-after-silence time.

If a pulsed (instead of continuous tone) horn is desired, the horn-pulsed jumper may be installed. If both the hornpulsed jumper and the relay-follow-horn jumper are installed, the alarm status relay will energize and de-energize with the pulsed horn.

FEATURES

- *Red alarm LED*
- *Alarm horn, continuous tone or pulsed*
- *Alarm horn silence switch*
- *Adjustable alarm delay time*
- *Adjustable alarm repeat time*
- *Alarm status SPDT relay*
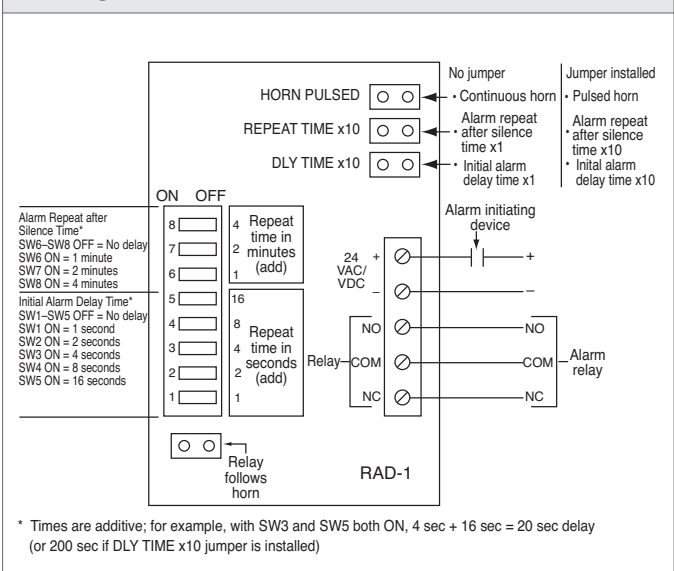- *Relay operates with the alarm horn option*

WIRING

HORN PULSED

REPEAT TIME x10

DLY TIME x10

	No jumper	Jumper installed
	• Continuous horn	• Pulsed horn
	Alarm repeat • after silence time x1	Alarm repeat • after silence time x10
	• Initial alarm delay time x1	• Inital alarm delay time x10

ON   OFF

Alarm Repeat after Silence Time*
SW6–SW8 OFF = No delay
SW6 ON = 1 minute
SW7 ON = 2 minutes
SW8 ON = 4 minutes

Initial Alarm Delay Time*
SW1–SW5 OFF = No delay
SW1 ON = 1 second
SW2 ON = 2 seconds
SW3 ON = 4 seconds
SW4 ON = 8 seconds
SW5 ON = 16 seconds

8 7 6 — Repeat time in minutes (add) 4 2 1
5 4 3 2 1 — Repeat time in seconds (add) 16 8 4 2 1

Alarm initiating device

24 VAC/ VDC + −

Relay — NO, COM, NC → NO, COM, NC — Alarm relay

Relay follows horn

RAD-1

* Times are additive; for example, with SW3 and SW5 both ON, 4 sec + 16 sec = 20 sec delay (or 200 sec if DLY TIME x10 jumper is installed)

SPECIFICATIONS

Supply Voltage	24 VAC @ 100 mA or 24 VDC @ 34 mA		30 VDC
Alarm Delay Time	None, or 1 to 31 seconds in one-second increments, or 10 to 310 seconds in 10-second increments	**Connections**	Screw terminals, 22 - 14 AWG wires
		Dimensions	4.5"H x 2.75"W x 1.0"D (11.4 x 7.0 x 2.5 cm)
Alarm Horn	Continuous or pulsed tone, 70 db min	**Mounting**	Brushed stainless steel plate mounts to standard single junction box, two screws provided
Alarm Repeat Time	None, or 1 to 7 in one-minute increments, or 10 to 70 minutes in 10-minute increments	**Approvals**	RoHS
		Weight	3 oz (74g)
Alarm Status Relay	SPDT, 0.5A @ 24 VAC, 1.0A @	**Warranty**	18 months

ORDERING INFORMATION

MODEL	DESCRIPTION
RAD-1	Remote alarm indication station

ALARMS & INDICATION

KELE ALARM INDICATION STATION
AIS

DESCRIPTION

The **Model AIS** Alarm Indication Station features an indication light, alarm horn and an alarm horn silence switch.

SEQUENCE OF OPERATION

Upon an alarm contact closure, the LED indicator will light, and the horn will sound. The horn can be silenced through the alarm silence switch, while the visual indication will continue to be lighted until the alarm condition has been corrected. A power interruption or open alarm contact will reset the AIS.

FEATURES

- *Long lasting, red LED indication*
- *Distinct continuous audible tone*
- *Horn silence switch*
- *Compact and rugged design*
- *Available in 24 VDC, 24 VAC, or 120 VAC*
- *Bright yellow panel face*

APPLICATION

- *Refrigerant leak alarm indication*
- *Water level alarm indication*
- *Pressure alarm indication*
- *High/Low temperature limits*
- *Gas leak indication*
- *Humidity limit alarm indication*
- *Vibration limit*
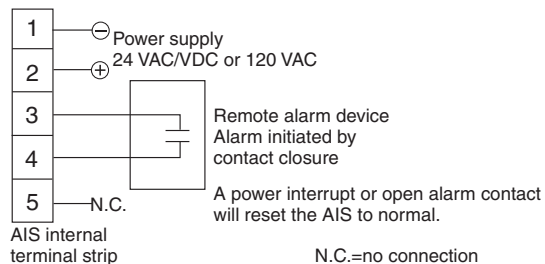- *Voltage/Current level limit*
- *Any contact closure alarm application*

SPECIFICATIONS

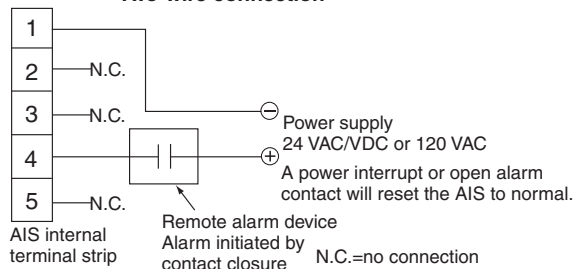|	
Supply Voltage	24 VAC/ VDC, 120 VAC, 100 mA max
Contact Rating	
AIS-24D	24 VDC, 50 mA min
AIS-24A	24 VAC, 90 mA min
AIS-120A	120 VAC, 70 mA min
Alarm Horn	80 db
Dimensions	7.09"H x 4.33"W x 3.54"D (18.0 x 11.0 x 9.0 cm)
Mounting	Four screws through back
Enclosure	Case- Polystyrene, impact resistant, knock-outs
Approvals	RoHS
Weight	1.1 lb (0.5 kg)
Warranty	1 year

WIRING

Four-wire connection

1	— Power supply
2	+ 24 VAC/VDC or 120 VAC
3	Remote alarm device
4	Alarm initiated by contact closure
5	N.C. A power interrupt or open alarm contact will reset the AIS to normal.

AIS internal terminal strip

N.C.=no connection

Two-wire connection

1	
2	N.C.
3	N.C. — Power supply
4	+ 24 VAC/VDC or 120 VAC
5	N.C. A power interrupt or open alarm contact will reset the AIS to normal.

Remote alarm device Alarm initiated by contact closure

AIS internal terminal strip

N.C.=no connection

ORDERING INFORMATION

MODEL	DESCRIPTION	
AIS	Alarm indication station	
	12VD	12 VDC powered
	24D	24 VDC powered
	24A	24 VAC powered
	120A	120 VAC powered

AIS	–	24A

Example: **AIS-24A** 24 VAC powered alarm indication station

001-901-382-6084 International | 888-397-5353 USA | kele.com

January 2012

3

DESCRIPTION

Signal strobes and horns available in wall-mount and panel-mount configurations with a variety of colors and voltages. Model **125STR** is a 120 VAC panel-mount strobe in NEMA 4X enclosure. Model **89STR** mounts on a single-gang box and is a single, indoor, flush-mount strobe. Model **869STR** is an indoor, flush-mount horn and strobe combination. Model **869** is an indoor, flush-mount horn only. Model **868 STR** is an outdoor, surface-mount horn and strobe combination. Model **868 i**s an outdoor, surface-mount horn.

FEATURES

- *Indoor and outdoor applications*
- *Amber, blue, clear, green, and red colors*
- *24 VAC, 24 VDC, and 120 VAC*
- *Surface and panel mount*

869   **869STR**

NEW!

868STR   **125STRH**

SPECIFICATIONS

Supply Voltage
N5 (89, 869, 868)	120 VAC
AQ (89, 869, 868)	24 VDC, 24 VAC
120A (125STRH)	120 VAC -20% to +10% of nominal voltage

Current Rating
125STRH	120 mA
Horn/Strobe	24 VDC, 22 mA/390 mA
	24 VAC, 72 mA/390 mA
	120 VAC, 24 mA/87 mA

Average Candela
|	
Amber	90 cd
Blue	20 cd
Clear	150 cd
Green	70 cd
Red	21 cd
Color	Amber, blue, clear, green, red
Horn Loudness	90 dba @ 10'
Peak Candela	300,000 cd
Strobe Tube Life	3000 hrs, 1000 hrs

Operating Humidity
868, 868 STR	95% RH @ 86°F (30°C)
869, 89 STR, 869 STR	85% RH @ 86°F (30°C)

Operating Temperature
868, 868 STR	-31° to 150°F (-35° to 66°C)
869, 89 STR, 869 STR	32° to 120°F (0° to 49°C)

Dimensions
89 STR	5"H x 3-3/8"W (12.7 x 8.6 cm)
869 STR, 868 STR, 869, 868	
	5-1/2"H x 5-1/2"W (14 x 14 cm),

Enclosure Rating
125 STRH	NEMA 4X

Mounting
868	Weatherproof surface box supplied – no NEMA rating
869	3" sq x 1-1/2" electrical box with 1-1/2" extension ring (need 3" depth)
Approvals	UL 1638 listed, cUL
Warranty	2 years

ORDERING INFORMATION

MODEL	DESCRIPTION
125STRH	Panel-mount strobe
89STR	Indoor flush-mount strobe
869STR	Indoor flush-mount electronic horn/strobe
868STR	Outdoor surface-mount electronic horn/strobe
869	Indoor flush- or panel-mount electronic horn
868	Outdoor surface-mount electronic horn

	COLOR	
	A	Amber
	B	Blue
	C	Clear
	G	Green
	R	Red

	SUPPLY VOLTAGE	
	AQ	24 VAC/VDC (89, 869, 868)
	N5	120 VAC (89, 869, 868)
	120A	120 VAC (125STRH only)

868STR	–	B	–	AQ

Example: **868STR-B-AQ** Outdoor surface-mount electronic horn with blue strobe and 24 VAC/VDC

WIRING

868 STR/869 STR Horn/Strobe

Strobe   Horn

−
−
+
+

kele.com | 888-397-5353 USA | 001-901-382-6084 International
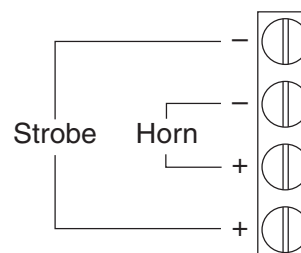
ALARM HORN
SC-SERIES

DESCRIPTION

The **SC Series Alarm Horns** provide an audible tone when an electric signal is applied. They can be used in applications when an audible alarm is needed to indicate that immediate attention is required.

SPECIFICATIONS

Supply Voltage	
SC110	30-120 VAC/VDC
SC628	6-28 VDC
SC628A, AN	6-28 VAC/VDC
Current Rating	
SC100	6-21 mA
SC628	3-18 mA
SC628AN	4-30 mA
SC628A	6-23 mA
Horn Loudness	Medium, 68-80 dB (AN model Loud, 80-95 dB)
Tone	Continuous
Panel Cutout	Panel, cutout 1.13" (2.87 cm)
Approvals	UL recognized component File# S1290
Warranty	1 year

ORDERING INFORMATION

MODEL	DESCRIPTION
SC110	Alarm horn, 120 VAC
SC628	Alarm horn, 24 VDC
SC628A	Alarm horn, 24 VAC/VDC
SC628AN	Alarm horn, 24 VAC/VDC

WIRING

SC Horn

Horn

WALL-MOUNTED STROBE
STB, STB-H
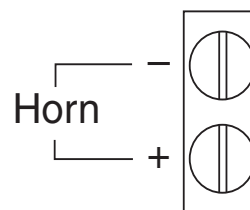
DESCRIPTION

The **Model STB** and **STB-H** wall-mounted strobes provide a bright, eye-catching warning light for any alarm application. The **STB-H** features a distinct audible signal.

FEATURES

- *Wall mounted with 4" square or double-gang box*
- *Integral alarm horn (91 db)*
- *24 VDC powered*
- *15/75 candela strobe intensity*
- *Meets requirements of ADA4.28.3*
- *UL listed*
- *Xenon strobe for constant flash rate*
- *Strobe and horn powered separately if desired*
- *Jumper-selectable, continuous or temporal tone*

SPECIFICATIONS

Supply Voltage	20-31 VDC (24 VDC nominal)
Current Rating	
STB	80 mA at 24VDC
STB-H	136 mA at 24 VAC
Strobe Frequency	1 Hz
Horn Loudness	104 dB max
Strobe Intensity	15 (off-center) candela
	75 (on-center) candela
Operating Temperature	32° to 120°F (0° to 49°C)
Dimensions	4.5"H x 4.56"W x 2.25"D (11.43 x 11.58 x 5.72 cm)
Approvals	UL Listed
Warranty	3 years

WIRING

Signal

S+   S+   S-   H-   H+

+   −   +   −
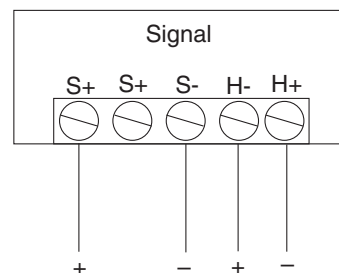
Note: Switch 1, 2 off

ORDERING INFORMATION

MODEL	DESCRIPTION
STB	Wall-mounted strobe
STB-H	Wall-mounted strobe with horn

January 2012

EMERGENCY OPERATOR STATIONS
ESM SERIES

DESCRIPTION

The **ESM Series** Emergency Operator Stations offer a highly visible method to shut down equipment, initiate alarms, or give a controller input during emergency conditions. Operation is with the push of a red 40mm mushroom-head push-button. The button may be reset with a pull or twist of the mushroom head, depending on the button style.

FEATURES

- **Highly visible yellow/black background**
- **UL listed for Category NISD Emergency Stop Devices**
- **Various NEMA rated enclosures**
- **40mm Red Mushroom Operators**
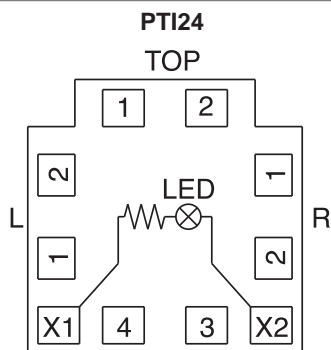- **1 N.O. and 1 N.C. contact included**

ESM-M1S-PPO-BS

Kele
Precision Manufacturing

ESM-M2S-PTL24-PO

SPECIFICATIONS

Supply Voltage	24 VAC 120VAC	**M3S**	4"H x 4"W x 4"D
Voltage Rating	Contact 600V Insulation	**M1F**	5.5"H x 5.5"W x 3"D
Contact Rating		**Enclosure Rating**	NEMA 1, 3R, 4, 4X, 12, 13
A600	10A	**Approvals**	
Q600	2.5A	**Station**	UL Listed NISD
Contact Configuration	4 Maintained or 6 Momentary maximum	**Enclosure**	UL, NEMA
Mechanical Life	Contact 10 million operations	**Pushbutton**	UL, NEMA
Contact Type	Self-cleaning silver contacts	**Weight**	
Contact Resistance	<25 milli ohms	**M1S**	1.65 lbs (0.75 kg)
Operating Temperature	-13° to 158°F (-25° to 70°C)	**NXS**	0.65 lbs (0.29kg)
Storage Temperature	-22° to 185°F(-30° to 85°C)	**M2S**	2.15 lbs (0.98 kg)
Dimensions		**SXS**	1.63 lbs (0.74 kg)
M1S, M2S	4"H x 4"D x 3"D	**M3S**	2.40 lbs (1.09 kg)
NXS	4.45"H x 2.87"W x 3.11"D	**M1F**	2.55 lbs (1.16 kg)
SXS	3.5"H x 3.25"D x 2.75"D	**Warranty**	1 year

WIRING

PTI24

TOP

| 1 | 2 |

2   LED   1

L   ⌁⌁⌁⊗   R

1   2

| X1 | 4 | 3 | X2 |

1 NO-1NC
Note: Typical contact connection

PPO, PTO, PK

TOP

3   ⊘   ⊘   1

4   ⊘   ⊘   2

1NO-1NC
Note: Typical contact connection
(4 momentary or 6 maintained maximum)

ORDERING INFORMATION

Model	Description
ESM	Maintained Emergency Operator Station (UL NISD)

Enclosure

M1S	NEMA 1 Metal enclosure, surface mount
NXS	NEMA 4X, 12 Non-metal enclosure, surface mount
M2S	NEMA 12, 13 Metal enclosure, surface mount
SXS	NEMA 4X Stainless steel enclosure, surface mount
M3S	NEMA 3R Metal enclosure, surface mount
M1F	NEMA 1 Metal enclosure, flush mount

Button Style

PP0	Red maintained 40mm mushroom (push-pull)
PT0	Red maintained 40mm mushroom (push-twist)
PTL24	Illuminated 24V Red maintained 40mm mushroom (push-twist, lamp included)
PK0	Red maintained 40mm mushroom (push- key release)

Legend

BS	Emergency - Boiler Shut-down
CS	Emergency - Chiller Stop
FN	Emergency - Exhaust Fan
HS	Emergency- HVAC Shut-down
PO	Emergency - Power Off
RP	Emergency - Refrigerant Purge
SD	Emergency - Shut Down
SO	Emergency - Shut Off
ST	Emergency - Stop
VP	Emergency - Ventilation Stop
VT	Emergency - Ventilation Start
XX	Custom Legend

ESM - M1S - PP0 - CS

Example: **ESM-M1S-PP0-CS** Maintained Emergency Operator Station, NEMA1 metal enclosure, surface mount, Red maintained 40mm push-pull mushroom, labeled as "Chiller Stop"

ACCESSORIES

ES-NO	Normally Open Contact Block for Non-illuminated ESM, ESB, and ESP Emergency Operator Stations
ES-NC	Normally Closed Contact Block for Non-illuminated ESM, ESB, and ESP Emergency Operator Stations
ES-KEY	Replacement Key for PK0 option, ESM and ESP series
ES-COVP	Clear hinged cover for Push-Pull/Twist

DESCRIPTION

The **ESB Series** Emergency Operator Stations offer a highly visible method to shut down equipment, initiate alarms, or give a controller input during emergency conditions. Operation occurs with the breaking of a lens, and then pushing the red push-button inside. Both break-lens to release button and field replacement lens are available.

FEATURES

• *Highly visible yellow/black background*
• *UL listed for Category NKCR Emergency Operator Stations*
• *Various NEMA rated enclosures*
• *Red push-button operators*
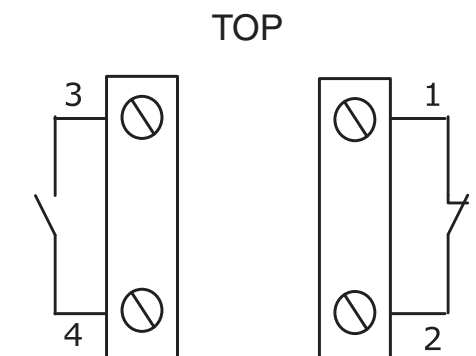• *1 N.O. and 1 N.C. contact included*

ESB-M1S-BLP-HS

SPECIFICATIONS

Supply Voltage	24 VAC 120VAC	**Dimensions**	
Voltage Rating	Contact 600V Insulation	M1S, M3S, M2S	4"H x 4"W x 4"D
Contact Rating		M4S	5.91"H x 5.91"D 4.72"D
A600	10A	M1F	5.5"H x 5.5"W x 4"D
Q600	2.5A	**Enclosure Rating**	NEMA 1, 3R, 4, 4X, 12, 13
Contact Configuration	4 Maintained or 6 Momentary maximum	**Approvals**	UL Listed NKCR, cUL
		Weight	
Mechanical Life	Contact 10 million operations	M1S	1.95 lbs (0.85 kg)
Contact Type	Self-cleaning silver contacts	M3S	2.25 lbs (1.0 kg)
Contact Resistance	<25 milli ohms	M2S, M1F	2.55 lbs (1.16 kg)
Operating Temperature	-13° to 158°F (-25° to 70°C)	M4S	3.95 lbs (1.79 kg)
Storage Temperature	-22° to 185°F (-30° to 85°C)	**Warranty**	1 year

WIRING

TOP

3

1

4

2

1NO-1NC
Note: Typical contact connection
(4 momentary or 6 maintained maximum)

3

ORDERING INFORMATION

Model	Description
ESB	Break-lens Emergency Operator Station (UL NKCR)

	Enclosure	
	M1S	NEMA 1 Metal enclosure, surface mount
	M3S	NEMA 3R Metal enclosure, surface mount
	M2S	NEMA 12, 13 Metal enclosure, surface mount
	M4S	NEMA 4, 12 Metal Enclosure, surface mount
	M1F	NEMA 1 Metal enclosure, flush mount

	Button Style	
	BLR	"Break Lens to Release Button" model with red momentary push button
	BLP	"Break Lens - Push Button" model maintained operator

	Legend	
	BS	Emergency - Boiler Shut-down
	CS	Emergency - Chiller Stop
	FN	Emergency - Exhaust Fan
	HS	Emergency- HVAC Shut-down
	PO	Emergency - Power Off
	RP	Emergency - Refrigerant Purge
	SD	Emergency - Shut Down
	SO	Emergency - Shut Off
	ST	Emergency - Stop
	VP	Emergency - Ventilation Stop
	VT	Emergency - Ventilation Start
	XX	Custom Legend

ESB - **M1S** - **BLP** - **CS**

Example: **ESB-M1S-BLP-CS** Break-Lens Emergency Operator Station, NEMA 1 metal enclosure, surface mount, maintained "Break Lens Push Button" operator, labeled as "Chiller Stop"

ACCESSORIES

		PAGE
ES-COVB	Clear hinged cover for Break Lens	
ES-LENS	Replacment Lens for ESB series Emergency Operator Stations	
ES-NC	Normally Closed Contact Block for Non-illuminated ESM, ESB, and ESP Emergency Operator Stations	**98**
ES-NO	Normally Open Contact Block for Non-illuminated ESM, ESB, and ESP Emergency Operator Stations	**98**

 January 2012

DESCRIPTION

The **ESP Series** Emergency Operator Stations offer a highly visible method to shut down equipment, initiate alarms, or give a controller input during emergency conditions. The **ESP Series** consists of a stainless steel plate with a 40mm mushroom head push-button. The button may be reset with a pull or twist of the mushroom head, depending on the button style.

FEATURES

* *Stainless steel plate mounted*
* *Highly visible yellow/black background*
* *UL listed for Category NISD Emergency Stop Devices*
* *40mm Red Mushroom Operators*
* *1 N.O. and 1 N.C. contact included*

ESP-PK0-CS

**ESP-PP0-VT**

SPECIFICATIONS

Supply Voltage	24 VAC 120VAC	**Contact Resistance**	<25 milli ohms
Voltage Rating	Contact 600V Insulation	**Operating Temperature**	-13° to 158°F (-25° to 70°C)
Contact Rating		**Storage Temperature**	-22° to 185°F (-30° to 85°C)
A600	10A	**Dimensions**	4.5"H x 2.75"W x .63"D Plate
Q600	2.5A	**Push-Button Rating**	NEMA 1, 3R, 4, 4X, 12, 13
Contact Configuration	4 Maintained or 6 Momentary maximum	**Approvals**	UL Listed NISD
Mechanical Life	Contact 10 million operations	**Weight**	0.30 lbs (0.14kg)
Contact Type	Self-cleaning silver contacts	**Warranty**	1 year

WIRING
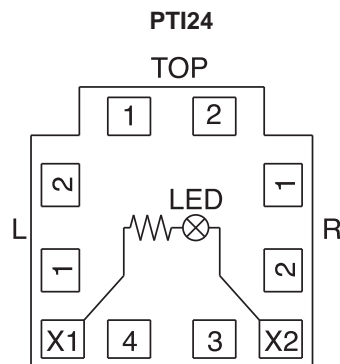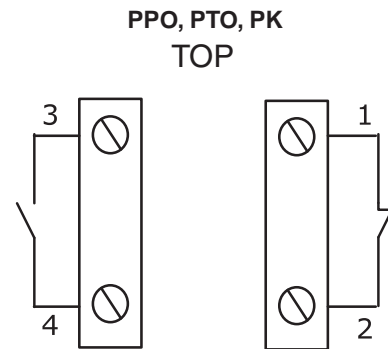
PTI24

TOP

1 2
2 LED 1
L R
1 2
X1 4 3 X2

1 NO-1NC
Note: Typical contact connection

PPO, PTO, PK

TOP

3 1
4 2

1NO-1NC
Note: Typical contact connection
(4 momentary or 6 maintained maximum)

3

ORDERING INFORMATION

Model	Description
ESP	**Plate-mounted Emergency Operator Station (UL NISD)**

	Button Style	
PP0	Red maintained 40mm mushroom (push-pull)	
PT0	Red maintained 40mm mushroom (push-twist)	
PTL24	Illuminated 24V Red maintained 40mm mushroom (push-twist, lamp included)	
PK0	Red maintained 40mm mushroom (push- key release)	

	Legend	
	BS	Emergency - Boiler Shut-down
	CS	Emergency - Chiller Stop
	FN	Emergency - Exhaust Fan
	HS	Emergency- HVAC Shut-down
	PO	Emergency - Power Off
	RP	Emergency - Refrigerant Purge
	SD	Emergency - Shut Down
	SO	Emergency - Shut Off
	ST	Emergency - Stop
	VP	Emergency - Ventilation Stop
	VT	Emergency - Ventilation Start
	XX	Custom Legend

ESP	-	PP0	-	CS

Example: **ESP-PP0-CS** Plate mounted Emergency Operator Station. Red Maintained Push-Pull button labeled as "Chiller Stop".

	ACCESSORIES	**PAGE**
ES-COVP	Clear hinged cover for Push-Pull/Twist	98
ES-KEY	Replacement Key for PK0 option, ESM and ESP series	98
ES-NC	Normally Closed Contact Block for Non-illuminated ESM, ESB, and ESP Emergency Operator Stations	98
ES-NO	Normally Open Contact Block for Non-illuminated ESM, ESB, and ESP Emergency Operator Stations	98

January 2012

DESCRIPTION

ST120 Series Operator Stations offers a means of disconnect to shut down equipment and/or initiate alarms during emergency conditions. Contacts are rated 600V @ 10A AC and 2.5A DC. All models carry a one-year warranty.

ST120-FN1-BP2-RPG   **ST120SL-RP2-VS**   **ST120-SN3R-BP2-CS**   **ST120SL-N1-BS**

ORDERING INFORMATION

PUSH-PULL OPERATION

MODEL	DESCRIPTION	
ST120SL	Complete push-pull emergency operator station (contacts not included)	
-	Red maintained 40 mm mushroom (push-pull) labeled "Pull to Reset" **NEMA 4X** and **12** nonmetallic **surface**-mount box	
F	Red maintained 40 mm mushroom (push-pull) labeled "Pull to Reset" **NEMA 4** and **12** all-metal **flush**-mount box	
FN1	Red maintained 40 mm mushroom (push-pull) labeled "Pull to Reset" **NEMA 1** all-metal **flush**-mount box	
N1	Red maintained 40 mm mushroom (push-pull) labeled "Pull to Reset" **NEMA 1** all-metal **surface**-mount box	
RPI	Red "Raised Lid - Push Button" padlockable **solid** lid over **momentary** flush round push button	
RP2	Red "Raised Lid - Push Button" padlockable **solid** lid over **maintained** flush round push button	

	LEGENDS	
	BS	EMERGENCY - BOILER SHUT-DOWN
	CS	EMERGENCY - CHILLER STOP
	FAN	EMERGENCY - EXHAUST FAN
	HS	EMERGENCY - HVAC SHUT-DOWN
	PO	EMERGENCY - POWER OFF
	RPG	EMERGENCY - REFRIGERANT PURGE
	SD	EMERGENCY - SHUT DOWN
	SO	EMERGENCY - SHUT OFF
	ST	EMERGENCY - STOP
	VS	EMERGENCY - VENTILATION STOP
	VSTART	EMERGENCY - VENTILATION START

BREAK-LENS OPERATION

MODEL	DESCRIPTION	
ST120	Complete break-lens emergency operator station (spare lens included, contacts not included)	
FN1	**NEMA 1** all-metal **flush**-mount box	
FN4	**NEMA 4** and **12** all-metal **flush**-mount box	
SN1	**NEMA 1** all-metal **surface**-mount box	
SN3R	**NEMA 3R** rainproof all-metal **surface**-mount box	
SN4	**NEMA 4** and **12** all-metal **surface**-mount box	
	-	Red "Break Lens to Release Button" model (use normally closed contact to close circuit when button releases)
	BP1	Red "Break Lens - Push Button" model, **momentary** operator
	BP2	Red "Break Lens - Push Button" model, **maintained** operator
	P1	"Break Lens - Operate Switch" two-position selector switch, **maintained** both positions, short lever
	P3	"Break Lens - Operate Switch" three-position selector switch, **maintained** all positions, short lever
	LEGENDS - See above	

ACCESSORIES

PILCLHCOV1	Clear hinged cover for push-pull model
PILCLHCOV5	Clear hinged cover for break-lens model
PILENS	Replacement lens for break-lens model
PILNCCB	N.C. stackable contact block
PILNOCB	N.O. stackable contact block

Notes: Six contact blocks max (2 rows of 3) may be used on each break glass operator station and the -FN1 and -N1 modesl of push-pull operation stations. The - model and F model push-pull stations can only take three contact blocks (1 row of 3).

All units use normally open contacts to close circuit or normally closed to open circuit (except "Break Glass of Release Button" model).

ALARMS & INDICATION

PLATE MOUNTED OPERATOR STATIONS
WPS SERIES

DESCRIPTION

The **WPS Series** Plate-mounted Operator Stations mount on a single-gang wall box or a standard handy box and come with brushed stainless steel plate. They are rated NEMA 1 for indoor applications. Many options are available for the **WPS Series** in addition to the models shown on our catalog page.

FEATURES

• *Mounted on brushed stainless steel wall plate*
• *Order contacts separately for wiring flexibility*
• *Special configurations are available*
• *Special labeling is available*
• *Single-gang wall or handy box mounting*
• *Contacts rated 600V at 10A AC and 2.5A DC*
• *One-year warranty*

WPS-KR-VS

WPS-MO-PO-DLM

WPS-MP-BS-CLM

WPS-RP2-HS

ORDERING INFORMATION

MODEL	DESCRIPTION		
WPS	Wall plate, box mounted emergency operator station (order contacts separately)		
	BUTTON STYLE		
MO	Red **momentary** 40 mm mushroom		
MP	Red **maintained** 40 mm mushroom (push-pull) labeled "Pull to Reset"		
TW	Red **maintained** 40 mm mushroom (push-turn to reset) labeled "Turn to Reset"		
KR	Red **maintained** key release 40 mm mushroom with two keys, key required to reset only		
RP1	Red "Raise Lid - Push Button" padlockable **solid** lid over **momentary** flush round push button		
RP2	Red "Raise Lid - Push Button" padlockable **solid** lid over **maintained** flush round push button		
CP1	Red "Raise Lid - Push Button" padlockable **clear** lid over **momentary** flush round push button		
CP2	Red "Raise Lid - Push Button" padlockable **clear** lid over **maintained** flush round push button		
	LEGENDS		
	CS	EMERGENCY - CHILLER STOP	
	PO	EMERGENCY - POWER OFF	
	BS	EMERGENCY - BOILER SHUT-DOWN	
	HS	EMERGENCY - HVAC SHUT-DOWN	
	VS	EMERGENCY - VENTILATION STOP	
	ST	EMERGENCY - STOP	
	SD	EMERGENCY - SHUT-DOWN	
	VSTART	EMERGENCY - VENTILATION START	
	SO	EMERGENCY - SHUT-OFF	
		CLM	Clearhinged lockout lid for use with MO, MP, TW, KR 40mm mushroom button
		DLM	Hinged lockout lid for use with MO 40mm mushroom button. Requires lid to be lifted in order to automatically release/extend mushroom device.

Example: **WPS-MP-VSTART** Wall plate operator station red maintained push-pull button labeled "Ventilation Start"

| WPS | – | MP | – | VSTART | – | |

RELATED PRODUCTS		**PAGE**
PILCLM	Clear cover for MO, MP, TW, KR stations	
PILNCCB	N.C. stackable contact block	103
PILNOCB	N.O. stackable contact block	103
PILRPKEY	Replacement key for WPS-KR series, specify model and key number when ordering	

Note: Three contact blocks can be used for a depth of 1-5/8" (42 mm).
Three more can be added for a depth of 2-5/8" (67 mm).