

CPS Series

Cable Pull Safety Switch



FEATURES

- Direct opening action \rightarrow of NC (normally closed) contacts
- 2CPS: 2NO/2NC, 1NO/3NC or 4NC contact configurations
1CPS: 1NO/1NC, 2NO/2NC, 1NO/3NC or 4NC contact configurations
- Typical cable span of 76 m (250 ft) in an environment with a temperature change of $\pm 17^\circ\text{C}$ ($\pm 30^\circ\text{F}$). Longer spans are possible depending upon temperature change and installation (ref. note on page 6 for more details or Application note - Effect of Temperature on Cable Pull Switch Operation)
- Choice of three actuator configurations (2CPS)
- Removable contact block version available (2CPS)
- Large wiring cavity with straight-through wiring
- 24 Vdc or 120 Vac bright, multicluster LED status indicator light available on 2CPS. Single high intensity LED on 1CPS
- Gold-plated contacts are standard on 2CPS, available on 1CPS
- Die-cast zinc housing
- Optional hardware packs available

TYPICAL APPLICATIONS

- Long conveyor systems found in warehouses and distribution centers
- Conveyor systems having a high amount of vibration
- Conveyor systems that experience wide temperature swings
- Long conveyor systems where easy through wiring, or highly visible trip status is required
- Hose down conditions
- Packaging equipment
- Assembly lines



BG
(Applied for)



CPS Series Cable Pull Safety Switches provide a readily accessible emergency stop signal. This is a cost-effective means compared to using multiple emergency stop push-buttons. (Cable Pull Safety Switches are not, however, to be used as a means of personnel safeguarding. They may be used to prevent further injury or damage to equipment when used for emergency stop signaling.)

The CPS Series Cable Pull Safety switch is designed to provide emergency stop protection for exposed conveyor and assembly lines. The internal mechanism latches on both slackened cable (push) and pulled cable. This capability also enhances productivity by eliminating nuisance stops due to variations in temperature, stretch of cable over time, and other application variables.

The 1CPS is intended for use in applications where the cable span is 76 m (250 ft) or shorter. It is an economical solution for shorter runs or zone protection typical to automated systems. The 2CPS series is intended for use in very long cable runs of 152 m (500 ft) or shorter, such as long conveyor lines found in warehouses.

A line in the midpoint of the cable tension window indicates proper cable tension, providing easy set-up. The direct opening switch contacts are held closed when the actuating cable is under proper tension and the reset knob is set to RUN. When the actuating cable is pulled, slackened or broken, a cam positively opens the NC (Normally Closed) switch contacts. The snap action, trip operation causes the switch contacts to change state and mechanically latch almost simultaneously when the cable is pulled, slackened or broken. The NC switch contacts remain open until the CPS is reset by properly tensioning the cable and manually rotating the reset knob.

When the direct opening switch contacts open, the auxiliary contacts also actuate (open contacts close and closed contacts open). The auxiliary contacts are electrically isolated from the direct opening switch contacts. These NO (Normally Open) contacts may be used for monitoring or signaling.

The CPS complies with: Low Voltage Directive 73/23/EEC, as amended by directive 93/68/EEC; Machinery Directive 98/37/EEC only as the directives relate to the components being used in a safety function; IEC/EN 60947-1; IEC/EN 60947-5-1; IEC/EN 60947-5-5.

WARNING

MISUSE OF DOCUMENTATION

- The information presented in this product sheet (or catalogue) is for reference only. DO NOT USE this document as system installation information.
- Complete installation, operation and maintenance information is provided in the instructions supplied with each product.

Failure to comply with these instructions could result in death or serious injury.

1CPS

Cable Pull Safety Switch

Technical Data

Mechanical life 1 000 000 operations

Degree of protection IP 67
NEMA 1, 4, 12, 13

Temperature range *Operating:*
-25 °C to +80 °C /
-13 °F to +176 °F
without condensation

Approvals IEC/EN 60947-1
IEC/EN 60947-5-1
IEC/EN 60947-5-5
AC15 A300
DC13 Q300
UL & CSA
BG Applied for

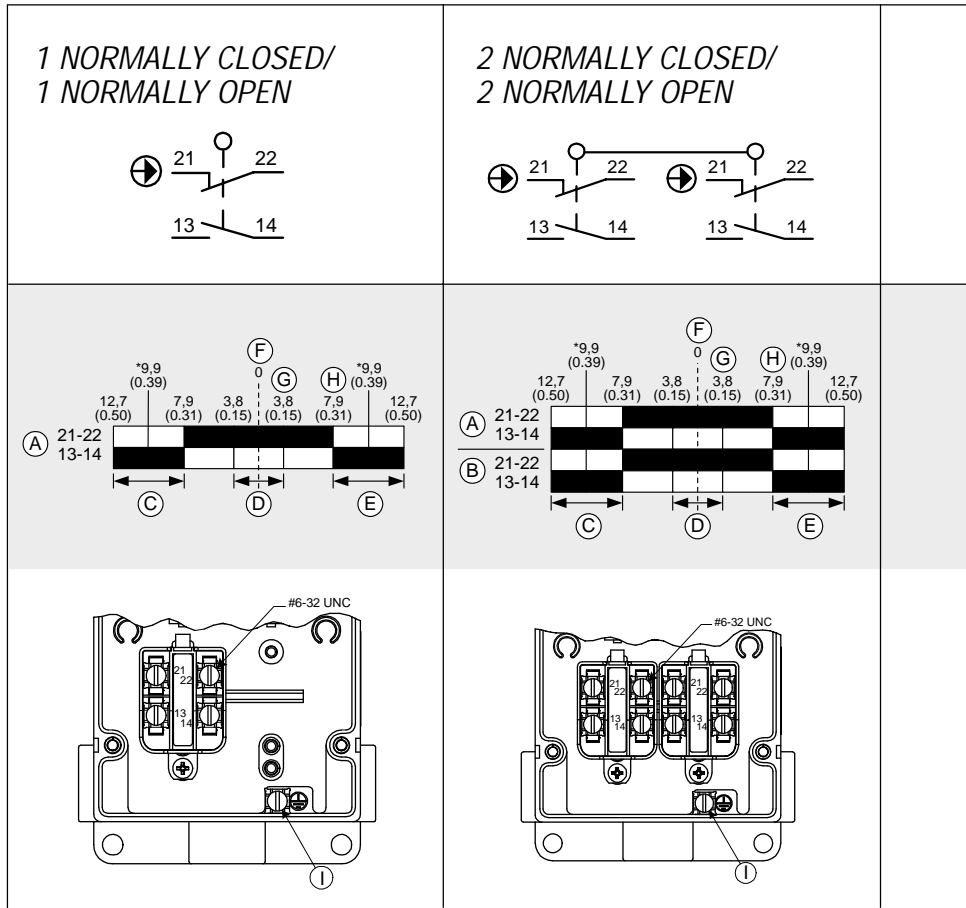
Vibration 10 Hz - 500 Hz, 5 g

Shock 15 g

Contact material Silver standard
Gold plated optional

Included accessories None

CPS



- A Left switch
- B Right switch
- C Slackened cable
- D Proper cable tension
- E Pulled cable
- F Cable tension = 111 N (25 lb)
- G Cable tension = 133 N (30 lb)
- H Cable tension = 178 N (40 lb)
- I Ground screw
- Contact closed
- Contact open

Conduit Thread

A = 1/2" NPT

C = 20 mm

Ordering:

1CPS

X

Example: 1CPSA1A

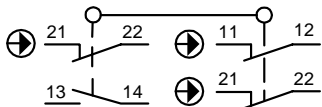
▲ Gold-plated contacts

1
5▲

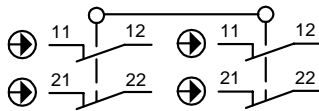
2
6▲

X

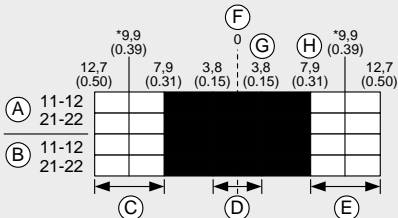
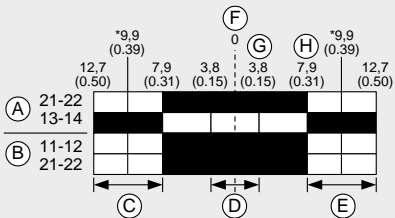
3 NORMALLY CLOSED/
1 NORMALLY OPEN



4 NORMALLY CLOSED

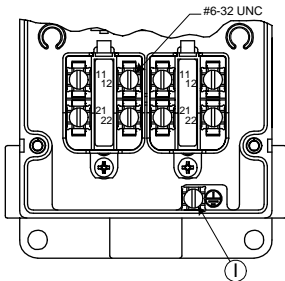
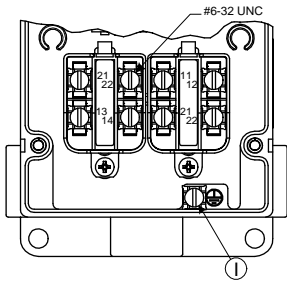


Indicator-Pilot Light Code



A : 24 V LED

A



B : 120 V LED

B

CPS

3

4

7[▲]

8[▲]

X

2CPS

Cable Pull Safety Switch

Technical Data

Mechanical life 1 000 000 operations

Degree of protection IP 67
NEMA 1, 4, 12, 13

Temperature range *Operating:*
-40 °C to +80 °C /
-40 °F to +176 °F
without condensation

Approvals IEC/EN 60947-1
IEC/EN 60947-5-1
IEC/EN 60947-5-5
AC15 A300
DC13 Q300
UL & CSA
BG

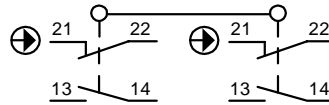
Vibration 10 Hz - 500 Hz, 5 g

Shock 15 g

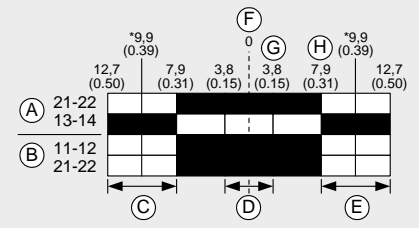
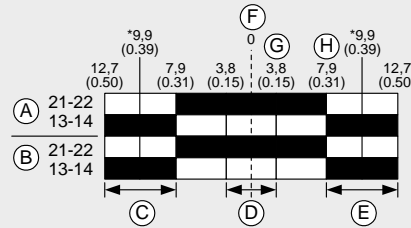
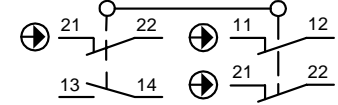
Contact material Gold plate
over silver

Included accessories Turnbuckle(s)

2 NORMALLY CLOSED/
2 NORMALLY OPEN



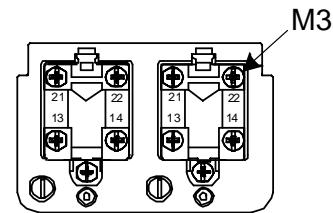
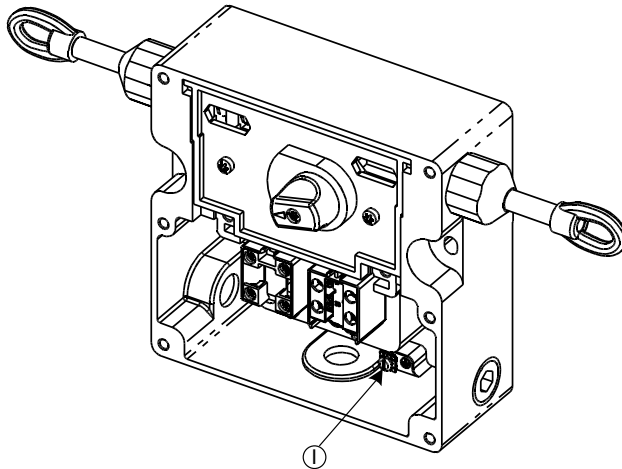
3 NORMALLY CLOSED/
1 NORMALLY OPEN



- A Left switch
 - B Right switch
 - C Slackened cable
 - D Proper cable tension
 - E Pulled cable
 - F Cable tension = 111 N (25 lb)
 - G Cable tension = 133 N (30 lb)
 - H Cable tension = 178 N (40 lb)
 - I Ground screw
- Contact closed
 Contact open

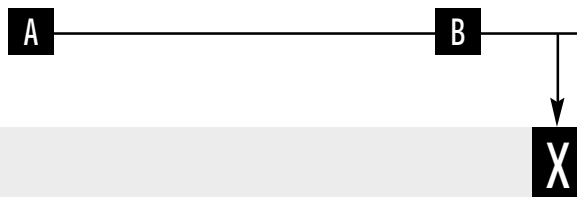
CPS

Contact blocks mounted to housing



Conduit Thread
1/2" NPT = **A**
20 mm = **C**

Contact block mounting
1 = to housing
2 = removable with heavy duty terminals



Ordering:

2CPS

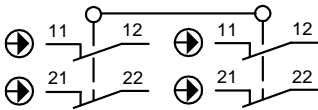
X

X

X

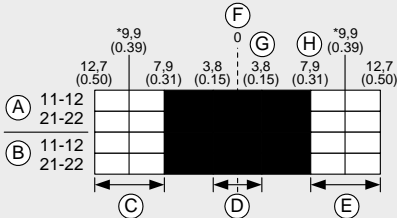
Example: 2CPSA1A2B

4 *NORMALLY CLOSED*



Actuation Code

Indicator Light Code



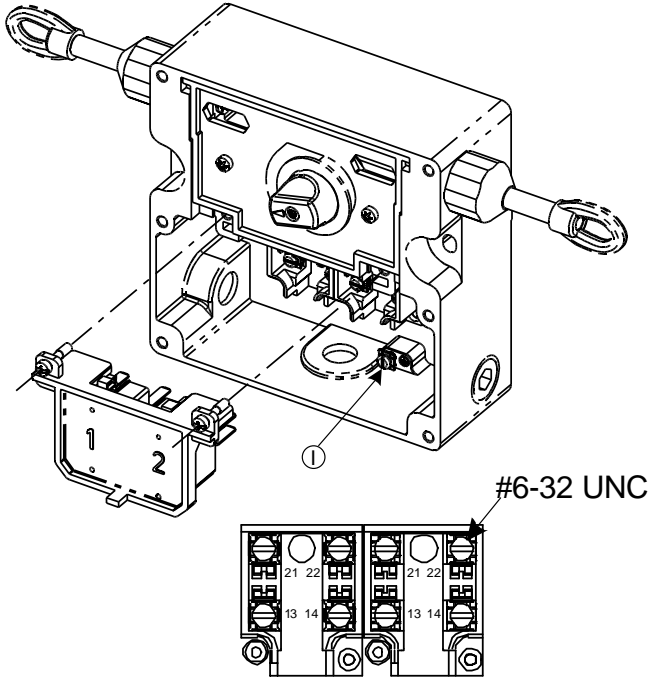
- 1: Maintained both sides
- 2: Maintained left side, no actuation right side
- 3: Maintained right side, no actuation left side

1
2
3

- No letter: no indicator provided
- A: 24 Vdc red multi-cluster LED
- B: 120 Vac red multi-cluster LED

A
B

Removable contact blocks with heavy duty wiring receptacles



D

X

X

CPS

Temperature-Span Distance Application Information

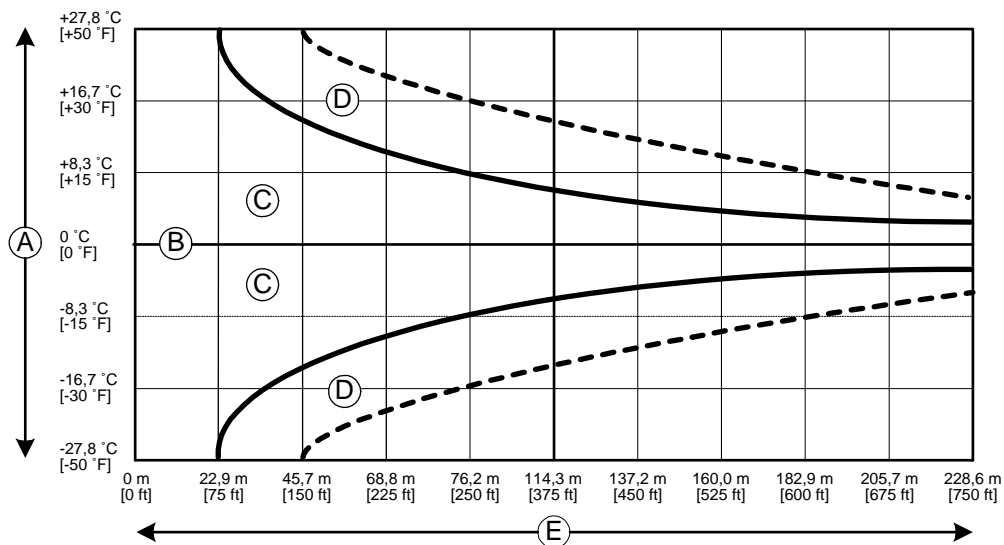
Cable Pull Switches featuring broken cable detection require pre-tensioning in order to enable the RUN condition.

The relative expansion or contraction of the steel actuating cable when the ambient temperature increases or decreases must be taken into account when pre-tensioning a cable pull switch.

The change in cable length with change in temperature can cause significant nuisance shut downs on longer runs.

Install the system when the temperature is at the mid point of the extremes. If a warehouse has a low temperature of 15,6 °C (60 °F) and a high of 32,2 °C (90 °F), set up the system at the midpoint 23,9 °C (75 °F).

Use an endspring or another CPS at the opposite end of the cable span to double the temperature tolerance and to meet the requirements of EN 418.

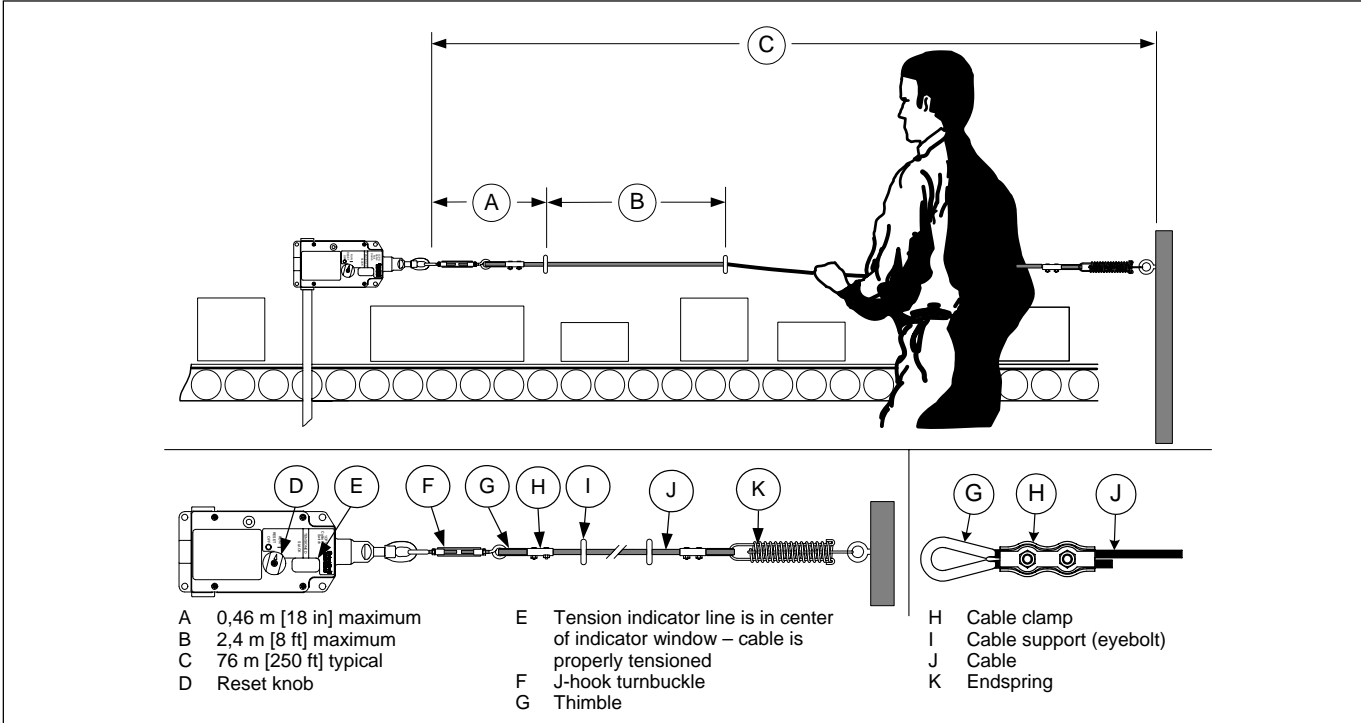


- A = Total temperature variation
- B = Setup point - Ideally at middle of temperature extremes
- C = Cable Pull Switch usable temperature span without endspring or second CPS
- D = Cable Pull Switch usable temperature span with endspring or second CPS
- E = Cable span distance

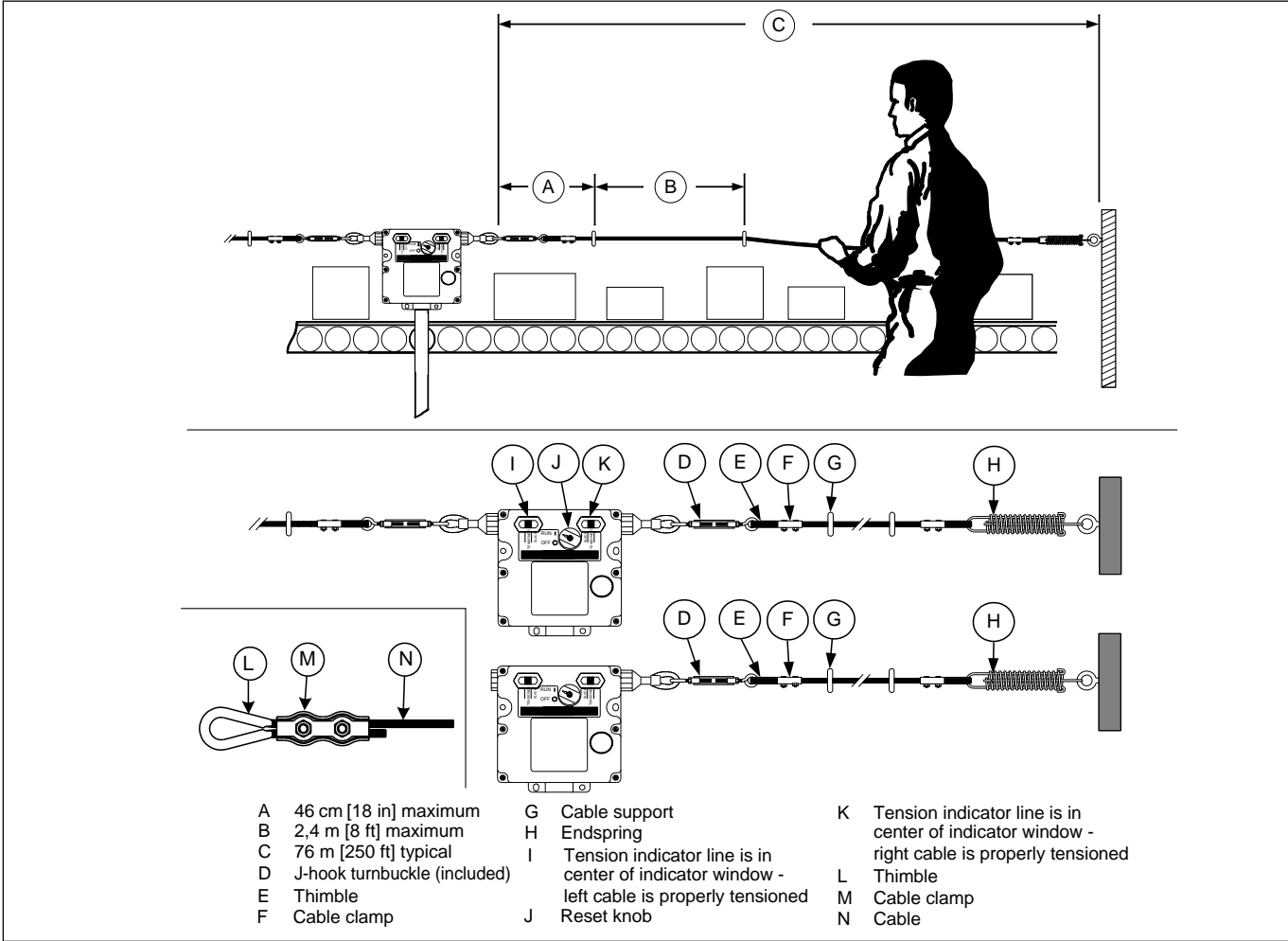
CPS

Application information

1CPS



2CPS



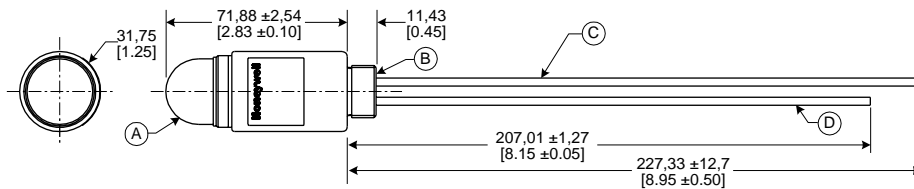
CPS

Hardware packets (available separately)

Listing	Accessory
CLSZC1	Cable - 7,6 m (25 ft) length
CLSZC2	Cable - 15,2 m (50 ft) length
CLSZC3	Cable - 30,5 m (100 ft) length
CLSZC4	Cable - 45,7 m (150 ft) length
CLSZC5	Cable - 61 m (200 ft) length
CLSZC7	Cable - 76,2 m (250 ft) length
CLSZTC	(2) Thimbles (2) Low-profile Duplex Cable Clamps
CPSZ1S	(1) Draw-bar Endspring
CPSZK1	(1) J-hook Turnbuckle with Lock Nuts (2) Thimbles (2) Low-profile Duplex Cable Clamps (16) Sets of Cable Supports ((16) 1/4-20 Eye Bolts, (32) 1/4-20 Nuts, (32) Flat Washers, (16) Lock Washers)
CPSLED24	Multicluster LED Accessory - 24 Vdc (conduit mount)
CPSLED120	Multicluster LED Accessory - 120 Vdc (conduit mount)
CPS-BRACKET	Mounting bracket (to be used with 1CPS or 2CPS)
CPSZTB	J-hook turnbuckle with lock nuts (included with 2CPS)

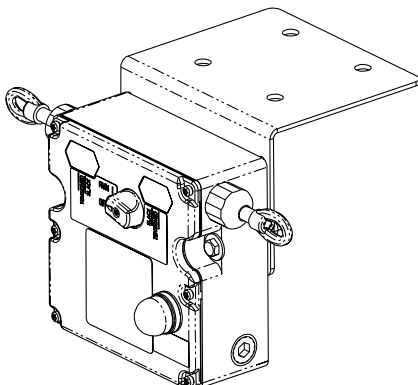
CPS

CPSLED



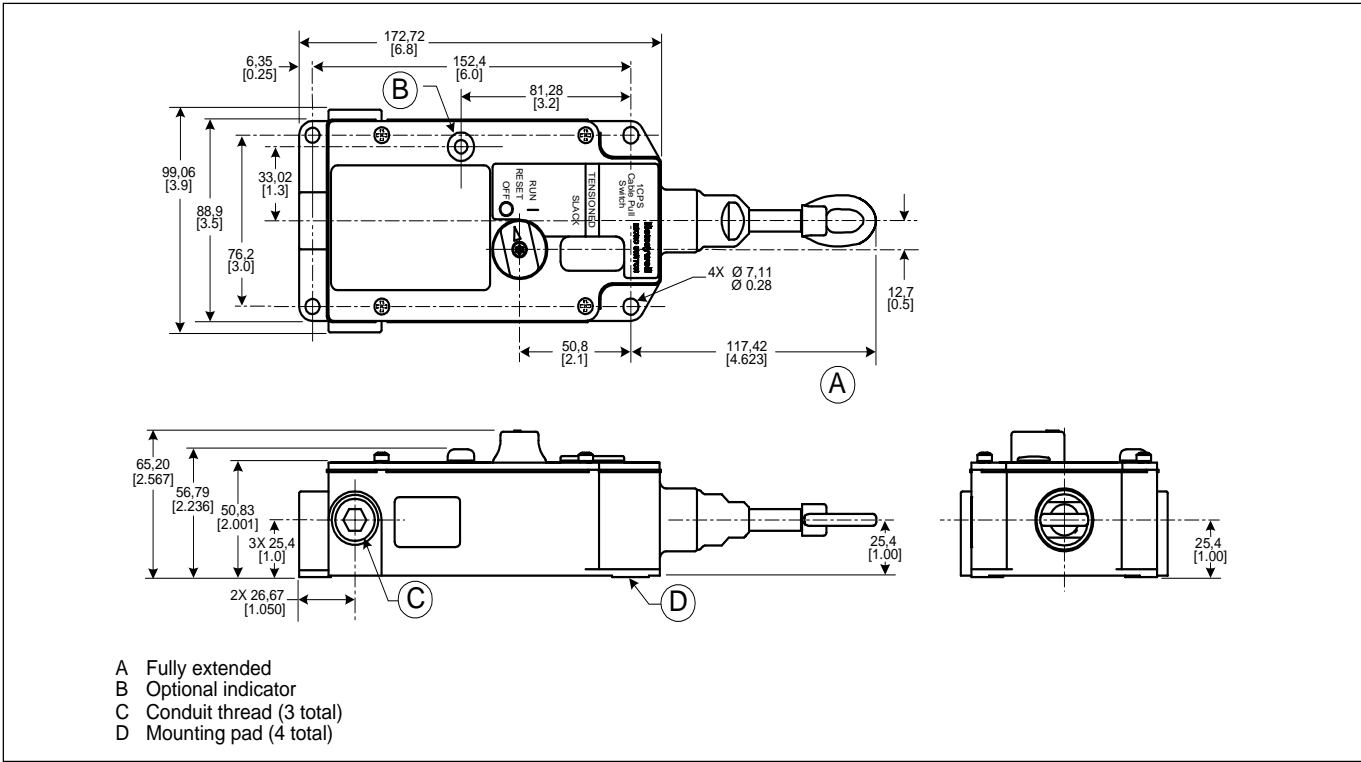
- A Multi-LED red pilot light
- B 1/2-14 NPom Thread
- C 18 AWG red PVC insulation
- D 18 AWG black PVC insulation

CPS-BRACKET

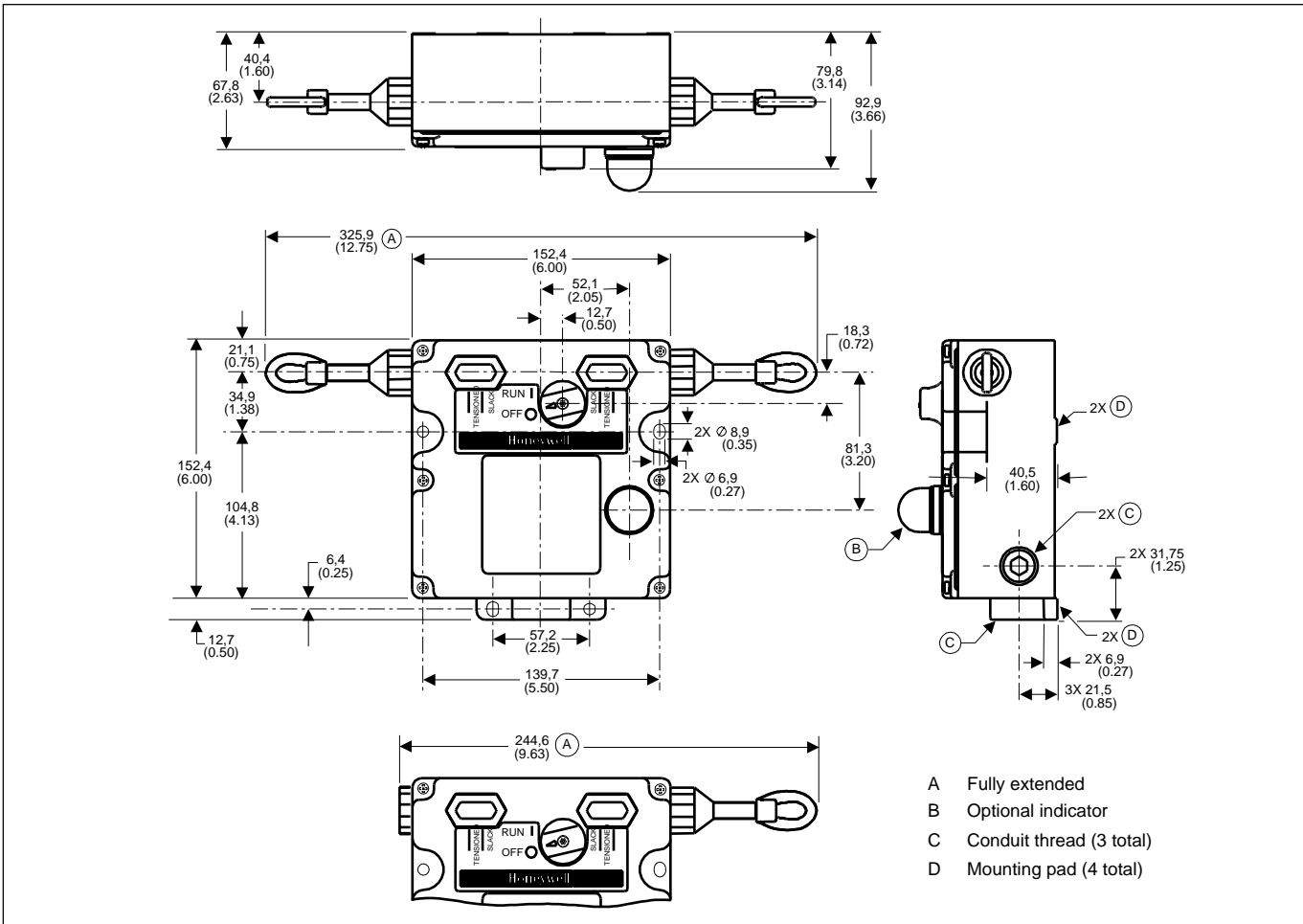


Mounting dimensions (mm/in)

1CPS



2CPS



CPS

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INTERNET: www.honeywell.com/sensing

E-mail: info.sc@honeywell.com

ASIA PACIFIC

Control Products Asia Pacific Headquarters

Phone: +(65) 6355-2828
FAX: +(65) 6445-3033

Australia

Honeywell Limited
Phone: +(61) 2-9370-4500
FAX: +(61) 2-9370-4525
Toll Free 1300-36-39-36
Toll Free Fax 1300-36-04-70

China - PRC - Beijing

Honeywell (Tianjin) Ltd.
Phone: +(86-10) 8458-3280
FAX: +(86-10) 8458-3102

China - PRC - Shanghai

Honeywell China Inc.
Phone: +(86-21) 6237-0237
FAX: +(86-21) 6237-1237

China - Hong Kong SAR

Honeywell Ltd.
Phone: +(852) 2953-6412
FAX: +(852) 2953-6767

India

Tata Honeywell Ltd
Phone: +(91) 20 687 0445/
0446
FAX: +(91) 20 681 2243/
687 5992

Indonesia

Honeywell Indonesia Pte Ltd
Phone: +(62-21) 535-8833
FAX: +(62-21) 5367 1008

Japan

Honeywell Inc
Phone: +(81) 3 5440 1425
FAX: +(81) 3 5440 1368

South Korea

Honeywell Korea Co. Ltd
Phone: +(822) 799-6167
FAX: +(822) 792-9013

Malaysia

Honeywell Engineering Sdn Bhd
Phone: +(60-3) 7958-4988
FAX: +(60-3) 7958-8922

New Zealand

Honeywell Limited
Phone: +(64-9) 623-5050
FAX: +(64-9) 623-5060
Toll Free (0800) 202-088

Philippines

Honeywell Systems (Philippines) Inc.
Phone: +(63-2) 636-1661/1662
FAX: +(63-2) 638-4013

Singapore

Honeywell South East Asia
Phone: +(65) 6355-2828
FAX: +(65) 6445-3033

Taiwan R.O.C.

Honeywell Taiwan Ltd.
Phone: +(886-2) 2245-1000
FAX: +(886-2) 2245 3242

Thailand

Honeywell Systems Ltd.
Phone: +(662) 693 3099
FAX: +(662) 693 3085

NORTH AMERICA

Canada

Honeywell LTD
Phone: 1-800-737-3360
FAX: 1-800-565-4130

USA

Control Products,
International Headquarters
Phone: 1-800-537-6945
1-815-235-6847
FAX: 1-815-235-6545
E-mail: info.sc@honeywell.com

EUROPE

Austria

Honeywell Austria GmbH
Phone: +(43) 1 727 80 366/246
FAX: +(43) 1 727 80 337

Belgium

Honeywell SA/NV
Phone: +(32) 2 728 2522
FAX: +(32) 2 728 2502

Bulgaria

Honeywell EOOD
Phone: +(359) 2 79 40 27
FAX: +(359) 2 79 40 90

Czech Republic

Honeywell spol. s.r.o.
Phone: +(420) 2 6112 3469/
3424
FAX: +(420) 2 6112 3461

Denmark

Honeywell A/S
Phone: +(45) 39 55 55 55
FAX: +(45) 39 55 55 58

Finland

Honeywell OY
Phone: +(358) 9 3480101
FAX: +(358) 9 34801375

France

Honeywell SA
Phone: +(33) 1 60 19 80 40
FAX: +(33) 1 60 19 81 73

Germany

Honeywell AG
Phone: +(49) 69 8064 444
FAX: +(49) 69 8064 442

Hungary

Honeywell Kft.
Phone: +(36 1) 451 4300
FAX: +(36 1) 451 4343

Italy

Honeywell S.p.A.
Phone: +(39) 02 92146 450/
456
FAX: +(39) 02 92146 490

The Netherlands

Honeywell B.V.
Phone: +(31) 20 565 69 11
FAX: +(31) 20 565 66 00

Norway

Honeywell A/S
Phone: +(47) 66 76 20 00
FAX: +(47) 66 76 20 90

Poland

Honeywell Sp. z o.o
Phone: +(48) 22 606 0900
FAX: +(48) 22 606 0901

Portugal

Honeywell Portugal Lda
Phone: +(351 21) 424 50 00
FAX: +(351 21) 424 50 99

Romania

Honeywell Bucharest
Phone: +(40) 1 2110076
FAX: +(40) 1 2103375

Commonwealth of Independent States (CIS)

ZAO Honeywell
Phone: +(7 095) 796 98 36
FAX: +(7 095) 796 98 93

Slovak Republic

Honeywell s.r.o.
Phone: +(421 7) 58247403/400
FAX: +(421 7) 58247 415

South Africa (Republic of)

Honeywell Southern Africa
Honeywell S.A. Pty. Ltd
Phone: +(27) 11 695 8000
FAX: +(27) 11 805 1504

Spain

Honeywell S.A.
Phone: +(34) 91 313 6100
FAX: +(34) 91 313 6129

Sweden

Honeywell AB
Phone: +(46) 8 775 55 00
FAX: +(46) 8 775 56 00

Switzerland

Honeywell AG
Phone: +(41) 1 855 24 40
FAX: +(41) 1 855 24 45

Turkey

Honeywell Turkey A.S.
Phone: +(90) 216 575 6620
FAX: +(90) 216 575 6637

United Kingdom

Honeywell Control Systems Ltd
Phone: +(44) 1698 481 481
FAX: +(44) 1698 481 276

Mediterranean & African Distributors

Honeywell SpA
Phone: +(39) 2 921 46 232
FAX: +(39) 2 921 46 233

Middle East Headquarters

Honeywell Middle East Ltd.
Phone: +(9712) 443 2119
FAX: +(9712) 443 2536

LATIN AMERICA

Argentina

Honeywell S.A.I.C.
Phone: +(54-11) 4383-3637
FAX: +(54-11) 4325-6470

Brazil

Honeywell do Brasil & Cia
Phone: +(55-11) 7266 1900
FAX: +(55-11) 7266 1905

Chile

Honeywell Chile, S.A.
Phone: +(56-2) 233-0688
FAX: +(56-2) 231-6679

Columbia

Honeywell Columbia, S.A.
Phone: +(57-1) 623-3239/3051
FAX: +(57-1) 623-3395

Ecuador

Honeywell S.A.
Phone: +(593-2) 981-560/1
FAX: +(593-2) 981-562

Mexico

Honeywell S.A. de C.V.
Phone: +(52) 55 5259-1966
FAX: +(52) 55 5570-2985

Peru

Honeywell Peru
Phone: +(511) 445-2136-1891
FAX: +(511) 348-3552

Puerto Rico

Honeywell Inc.
Phone: +(809) 792-7075
FAX: +(809) 792-0053

Trinidad

Honeywell Inc.
Phone: +(868) 624-3964
FAX: +(868) 624-3969

Venezuela

Honeywell CA
Phone: +(58-2) 238-0211
FAX: +(58-2) 238-3391

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Honeywell

Honeywell

21 Chemin du Vieux Chêne
38240 Meylan Cedex
France

Honeywell

Newhouse Industrial Estate
Motherwell ML1 5SB
Lanarkshire, Scotland, U.K.

Honeywell

11 West Spring Street
Freeport, Illinois 61032
USA



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Электрон
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Телефон: +7 812 627 14 35

Электронная почта: sales@st-electron.ru

Адрес: 198099, Санкт-Петербург,
Промышленная ул, дом № 19, литера Н,
помещение 100-Н Офис 331