# SSA-EB Series Emergency Stop Push Buttons 

## Datasheet

## Illuminated Flush Mount Electro-Mechanical Push Buttons

- Rugged design; easy installation with no assembly or individual wiring required

- Push-to-stop, twist-to-release (all models), or pull-to-release (standard and large) operation per IEC60947-5-5
- Latching design complies with ISO 13850; direct (positive) opening operation per IEC 60947-5-1
- Compliant with ANSI B11.19, ANSI NFPA79, and IEC/EN 60204-1 Emergency Stop requirements
- "Safe Break Action" ensures N.C. contacts will open if the contact block is separated from the actuator
- 8-pin M12/Euro-style Quick Disconnect; 1/2-in NPT port on terminal strip models (cable-gland included)
- Models with highly visible indication of actuation (armed or depressed/latched button)
- "Emergency Stop" legend included

Models SSA-EB... series are "mushroom-style" electro-mechanical emergency stop push buttons. When the button is armed, the switch's safety contacts (N.C.) are closed and its monitoring contacts (N.O.), if present, are open. When the button is pushed, the switch's safety contacts open and the monitoring contacts close. The contacts remain in this condition until the push button is manually rearmed by twisting clockwise the red push button actuator, or by pulling on the models with the standard actuator. The SSA-EB1(2)..-..ED1.. series has a flat mounting base for ease of mounting without requiring an additional enclosure.

The EZ-LIGHT® illumination logic allows for easy identification of a pushed/actuated button. An armed button will light a steady yellow or green illumination or OFF (depending on model), a pushed/actuated button is indicated by a red illumination (flashing or solid depending on model). An optional input allows an armed button to illuminate a steady red to indicate a machine stop or emergency stop condition. In a series string of E-Stop buttons, this logic gives the user the choice to either have the armed buttons stay YELLOW (GREEN) or turn steady RED when a STOP condition exists.

SSA-EB1M... series padlock-style lockable emergency stop push buttons are intended to prevent unauthorized or accidental resetting of a pushed/latched button. The SSA-EB1M... series are not to be used as an energy isolating device or as the sole means of complying with Lockout/Tagout or with the requirements of the isolation of hazardous energy (see OSHA 29CFR1910.147, ANSI Z244.1, CSA Z460, ISO 14118). The locking feature can be used to provide supervisory/personal control and provide an additional safety measure(s) to reduce the likelihood of inadvertent arming and energization of the emergency stop circuit.

## Models

| Model | Pushbutton | EZ-Light ${ }^{\circledR}$ I Ilumination Logic and <br> Description | Connection |
| :--- | :--- | :--- | :--- |
| SSA-EB1PL-12ED1Q8 | Standard 40 mm | OFF (armed), RED (solid, PUSH) |  |
| SSA-EB1PLXR-12ED1Q8 | Standard 40 mm | OFF (armed), RED (flash, PUSH) |  |
| SSA-EB1PLYR-12ED1Q8 | Standard 40 mm | YELLOW (armed), RED (flash, PUSH) |  |
| SSA-EB1PLGR-12ED1Q8 | Standard 40 mm | GREEN (armed), RED (flash, PUSH) |  |
| SSA-EB2PLXR-12ED1Q8 | Large 60 mm | OFF (armed), RED (flash, PUSH) | 8-pin M12 QD |
| SSA-EB1MLP-12ED1Q8 | Lockable 44 mm | OFF (armed), RED (solid, PUSH) |  |
| SSA-EB1MLXRP-12ED1Q8 | Lockable 44 mm | OFF (armed), RED (flash, PUSH) |  |
| SSA-EB1MLYRP-12ED1Q8 | Lockable 44 mm | YELLOW (armed), RED (flash, PUSH) |  |
| SSA-EB1MLGRP-12ED1Q8 | Lockable 44 mm | GREEN (armed), RED (flash, PUSH) |  |


| Model | Pushbutton | EZ-Light® Illumination Logic and <br> Description | Connection |
| :--- | :--- | :--- | :--- |
| SSA-EB1PLXR-12ED1 | Standard 40 mm | OFF (armed), RED (flash, PUSH) |  |
| SSA-EB1PLYR-12ED1 | Standard 40 mm | YELLOW (armed), RED (flash, PUSH) |  |
| SSA-EB1PLGR-12ED1 | Standard 40 mm | GREEN (armed), RED (flash, PUSH) | Terminal Strip, 1/2- |
| SSA-EB1MLXRP-12ED1 NPT port | Lockable 44 mm | OFF (armed), RED (flash, PUSH) |  |
| SSA-EB1MLYRP-12ED1 | Lockable 44 mm | YELLOW (armed), RED (flash, PUSH) |  |
| SSA-EB1MLGRP-12ED1 | Lockable 44 mm | GREEN (armed), RED (flash, PUSH) |  |

## I mportant... Read this before proceeding!

The user is responsible for satisfying all local, state, and national laws, rules, codes, and regulations relating to the use of this product and its application. Banner Engineering Corp. has made every effort to provide complete application, installation, operation, and maintenance instructions. Please contact a Banner Applications Engineer with any questions regarding this product.

The user is responsible for making sure that all machine operators, maintenance personnel, electricians, and supervisors are thoroughly familiar with and understand all instructions regarding the installation, maintenance, and use of this product, and with the machinery it controls. The user and any personnel involved with the installation and use of this product must be thoroughly familiar with all applicable standards, some of which are listed within the specifications. Banner Engineering Corp. makes no claim regarding a specific recommendation of any organization, the accuracy or effectiveness of any information provided, or the appropriateness of the provided information for a specific application.

## WARNI NG: Not a Safeguarding Device

An Emergency Stop Device is not considered a safeguarding device because it requires an overt action by an individual to stop machine motion or hazards.

A safeguarding device limits or eliminates an individual's exposure to a hazard without action by the individual or others. Because an individual must actuate the device for it to function, these devices do not fit the definition of a safeguarding device and cannot be substituted for required safeguarding. Refer to the relevant standards to determine those requirements.

## Emergency Stop Considerations

ANSI NFPA 79, ANSI B11.19, IEC/EN 60204-1, and ISO 13850 specify emergency stop requirements, including the following:

- Emergency-stop push buttons shall be located at each operator control station and at other operating stations where emergency shutdown is required.
- Stop and emergency-stop push buttons shall be continuously operable and readily accessible from all control and operating stations where located. Do not mute or bypass E-stop buttons.
- Actuators of emergency-stop devices shall be colored red. The background immediately around the device actuator shall be colored yellow (where possible). The actuator of a push-button-operated device shall be of the palm or mushroom-head type.
- The emergency-stop actuator shall be a self-latching type.


## WARNI NG: Emergency Stop Functions

Do not mute or bypass any Emergency Stop device. ANSI B11.19, ANSI NFPA79 and IEC/EN 60204-1 require that the Emergency Stop function remain active at all times.

## WARNI NG: Multiple Switching Devices

Whenever two or more devices are connected to the same safety module (controller):

- Contacts of the corresponding pole of each switch must be connected together in series. Never connect the contacts of multiple switches in parallel. Such a parallel connection defeats the switch contact monitoring ability of the Module and creates an unsafe condition which may result in serious injury or death.
- Each device must be individually actuated (engaged), then released (or re-armed) and the safety module reset. This allows the module to check each switch and its wiring to detect faults.

This check must be performed during the prescribed checkouts. Failure to test each device individually in this manner may result in undetected faults and create an unsafe condition which may result in serious injury or death.

## Installation and Maintenance

The device must not be affected by environmental conditions. I nstall the device so that operation is not impeded, but should be protected against inadvertent operation (for example, accidental actuation by being bumped or leaned against). Do not operate the switch using a tool. Do not expose the switch to excessive shocks and vibrations, otherwise the switch may be deformed or damaged, causing malfunction or operation failure. M5 mounting hardware is included.

Electrical installation must be made by qualified personnel ${ }^{1}$ and must comply with NEC (National Electrical Code), ANSI/ NFPA 79 or IEC/EN 60204-1, and all applicable local standards. It is not possible to give exact wiring instructions for a device that interfaces to a multitude of machine control configurations. The following is general in nature; it is recommended to perform a risk assessment to ensure appropriate application, interfacing/hookup, and risk reduction (see ISO 12100 or ANSI B11.0).

For SSA-EB1M... series padlock-style lockable emergency stop push buttons, make sure that an applicable padlock and hasp is used. The total weight of the padlock and hasp must not exceed 1500 g ( 3.3 lbs ) or the switch may malfunction or fail.

## WARNI NG: Shock Hazard and Hazardous Energy

Always disconnect power from the safety system (for example, device, module, interfacing, etc.) and the machine being controlled before making any connections or replacing any component.

Electrical installation and wiring must be made by Qualified Personnel and must comply with the relevant electrical standards and wiring codes, such as the NEC (National Electrical Code), ANSI NFPA79, or IEC 60204-1, and all applicable local standards and codes.

Lockout/ tagout procedures may be required. Refer to OSHA 29CFR1910.147, ANSI Z244-1, ISO 14118, or the appropriate standard for controlling hazardous energy.

[^0]Table 1: Hookup


Table 2: SSA-EB1xxLYR-xx or SSA-EB1xxLGR-xx
See Figure 1 on page 5.

| Situation | Indication | I llumination Logic |
| :--- | :--- | :--- |
| Button Armed | YELLOW / SOLID <br> or GREEN / <br> SOLID | - Indicates button is armed <br> - If used, ES-FA-11AA Module status is in a RESET/RUN condition <br> (31/32 open) |
| Pin 3 open | RED / FLASH | - Indicates the button is pushed (actuated) <br> - <br> Sutton Pushal on Pin 3 has no effect on a button that has been pushed <br> (actuated) |
| Pin 3 open or +Vdc | RED / SOLID | - Indicates the machine is in an Emergency Stop or other stop condition, <br> but that specific button has not been pushed (actuated) <br> This optional signal (12 to 30Vdc) allows the user to indicate a stop <br> condition by turning the armed indication to RED (steady) indication |
| Button Armed <br> Pin $3=+$ Vdc |  |  |

Table 3: SSA-EB1(2) xxLXR-xx
See Figure 1 on page 5.

| Situation | Indication | Illumination Logic |
| :--- | :--- | :--- |
| Button Armed | OFF | • Indicates button is armed <br> • If used, ES-FA-11AA Module status is in a RESET/RUN condition <br> $(31 / 32$ open $)$ |
| Pin 3 open |  |  |


| Situation | Indication | I llumination Logic |
| :--- | :--- | :--- |
| Button Pushed | RED / FLASH | - Indicates the button is pushed (actuated) <br> - <br> Signal on Pin 3 has no effect on a button that has been pushed <br> (actuated) |
| Pin 3 open or +Vdc | RED / SOLID | - Indicates the machine is in an Emergency Stop or other stop condition, <br> but that specific button has not been pushed (actuated) <br> This optional signal (12 to 30Vdc) allows the user to indicate a stop <br> condition by turning the armed indication to RED (steady) indication |
| Pin $3=+$ Vdc |  |  |

Table 4: SSA-EB1xxL-xx
See Figure 1 on page 5 .

| Situation | Indication | Illumination Logic |
| :--- | :--- | :--- |
| Button Armed | OFF | -Indicates button is armed <br> If used, ES-FA-11AA Module status is in a RESET/RUN condition <br> (31/32 open) <br> Pin 3 open |
| Button Pushed <br> Pin 3 open or +Vdc | RED / SOLID | - Indicates the button is pushed (actuated) <br> - Signal on Pin 3 has no effect on a button that has been pushed <br> (actuated) |
| Button Armed <br> Pin $3=+$ Vdc | RED / SOLID | - Indicates the machine is in an Emergency Stop or other stop condition, <br> but that specific button has not been pushed (actuated) <br> This optional signal (12 to 30Vdc) allows the user to indicate a stop <br> condition by turning the armed indication to RED (steady) indication |



Figure 1. Illuminated Models—Example Hookup

NOTE: Refer to the ES-FA-11AA E-Stop Safety Module datasheet ( $\mathrm{p} / \mathrm{n} 60606$ ) for complete safety module installation information.

## Checkout

At machine set up, a Designated Person ${ }^{2}$ should test each emergency stop push button for proper machine shutdown response. A Designated Person should check the emergency stop buttons for proper operation, physical damage, button looseness, and excessive environmental contamination. This should take place on a periodic schedule determined by the user, based on the severity of the operating environment and the frequency of switch actuations. Adjust, repair, or replace components as needed. If inspection reveals contamination on the switch, thoroughly clean the switch and eliminate the cause of the contamination. Replace the switch and/or appropriate components when any parts or assemblies are damaged, broken, deformed, or badly worn; or if the electrical/mechanical specifications (for the environment and operating conditions) have been exceeded. Always test the control system for proper functioning under machine control conditions after performing maintenance, replacing the emergency stop device, or replacing any component of the device.

## Specifications

Housing / Button
Polycarbonate / Polyamide / Aluminum
\#10 or M5 (M5 hardware included); Max. Tightening Torque: $0.56 \mathrm{~N} \cdot \mathrm{~m}$ ( $5 \mathrm{in} \cdot \mathrm{lbf}$ )
Operating Conditions
Temperature: $-25^{\circ} \mathrm{C}$ to $+55^{\circ} \mathrm{C}\left(-13^{\circ} \mathrm{F}\right.$ to $\left.+131^{\circ} \mathrm{F}\right)$
Humidity: $45 \%$ to $85 \%$ RH (no condensation)
Environmental Rating
IP65 (IEC60529)
Insulation Resistance
$100 \mathrm{M} \Omega$ minimum ( 500 V dc megger)
I mpulse Withstand Voltage 2.5 kV

Pollution Degree 3
Output Configuration
See Installation and Maintenance on page 3
Overvoltage Category II
Contact Material/ Bounce ${ }^{3}$ Gold plated silver / 20 ms
Electrical Life
100,000 operations minimum, 250,000 operations minimum at 24 V AC/DC, 100 mA
Mechanical Life 250,000 operations

## Shock Resistance

 Operating extremes: $150 \mathrm{~m} / \mathrm{s}^{2}$ (15G)
## Vibration Resistance

 Operating extremes: 10 to 500 Hz , amplitude 0.35 mm acceleration $50 \mathrm{~m} / \mathrm{s}^{2}$
## LED Color

Yellow-590 nm, Red-618nm, Green-525nm

## LED Flash Rate

1.6 Hz at 50\% duty cycle

LED Voltage/ Current
SSA-EB1..LYR-.., SSA-EB1(2)..LXR-.., and SSA-EB1..L-..: 12 to 30 V dc; 120 mA at $12 \mathrm{~V} \mathrm{dc}, 65 \mathrm{~mA}$ at $24 \mathrm{~V} \mathrm{dc}, 60 \mathrm{~mA}$ at 30 V dc SSA-EB1..LGR-..: 12 - 30 V dc; $135 \mathrm{~mA} @ 12 \mathrm{~V}$ dc, $75 \mathrm{~mA} @ 24 \mathrm{Vdc}$, 70 mA @ 30 Vdc

Total Weight of Padlock and Hasp (SSA-EB1M..-..only) $1500 \mathrm{~g}(3.3 \mathrm{lb})$ max.
Electrical Rating
Minimum load: 1 mA at $5 \mathrm{Vac} / \mathrm{dc}$
SSA-EB1xx-xxED1Q8: 2 A at $60 \mathrm{Vac} / 75 \mathrm{~V}$ dc maximum UL Applications: 1.5 A at 250 V ac, 1 A at 30 V dc (pilot duty) CE Applications: AC-15: 1.5 A at $250 \mathrm{~V} \mathrm{ac}, \mathrm{DC}-13$ : 1 A at 30 V dc
Rated Insulation Voltage (Ui)
$60 \mathrm{~V} \mathrm{ac} / 75 \mathrm{~V}$ dc
Rated Current (Ith) 2A
B10d 100,000 (based on ISO13849-1(2006))
Design Standards Compliant with EN/IEC 60497-1 / -5-1, ISO 13850, ANSI B11.19, ANSI NFPA79, IEC 60204-1
Date code format (U.S. Standard Format) YYWWX: 2-digit year, 2-digit week, "X" internal code
Certifications
C $\mathrm{Ec} \mathrm{UL}_{\mathrm{us} \text { uisted }}$

[^1]Rated Operating Current

| Safety Contact (N.C.) |  |  | $\mathbf{3 0} \mathbf{~ V}$ |
| :--- | :--- | :--- | :--- |
| AC $50 / 60 \mathrm{~Hz}$ | Resistive Load (AC-12) | $\mathbf{6 0} \mathbf{~ V ~ a c / ~} \mathbf{7 5} \mathbf{~ V ~ d c ~}$ |  |
|  | Inductive Load (AC-15) | 2 A |  |
| DC | Resistive Load (DC-12) | - | 2 A |
|  | Inductive Load (DC-13) | 2 A | 0.4 A |


| Auxiliary Output (N.O.) |  | 30 V | $60 \mathrm{Vac} / 75 \mathrm{~V}$ dc |
| :---: | :---: | :---: | :---: |
| 12 to 30 V dc (from supply pin 2) | Resistive Load (DC-12) | 0.25 A | n.a. |
|  | Inductive Load (DC-13) | 0.25 A | n.a. |

The operating current is classified according to JIS C 8201-5-1-1999 making and breaking capacities and are measured at resistive/inductive load types specified in IEC 60947-5-1. See "Electrical Rating" above for specific model and UL/CE maximum ratings.

## Dimensions

All measurements are listed in millimeters (inches), unless noted otherwise.


60 mm Push Button


Lockable Push Button

## Standard Push Button

| a | b | C | d |
| :---: | :---: | :---: | :---: |
| 7 mm max | 19 mm max | 39 mm min | $15 \mathrm{~mm} \mathrm{~min}^{4}$ |
|  |  |  |  |

[^2]
## Accessories

## Cordsets

| 8-Pin Threaded M12/ Euro-Style Cordsets with Open-Shield |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Model | Length | Style | Dimensions | Pinout | male) |
| MQDC2S-806 | 1.83 m (6 ft) | Straight |  |  |  |
| MQDC2S-815 | 4.57 m (15 ft) |  |  |  |  |
| MQDC2S-830 | 9.14 m (30 ft) |  |  |  |  |
| MQDC2S-850 | 15.2 m ( 50 ft ) |  |  | $\begin{aligned} & 2=\text { Brown } \\ & 3=\text { Green } \\ & 4=\text { Yellow } \end{aligned}$ | $\begin{aligned} & 6=\text { Pink } \\ & 7=\text { Blue } \\ & 8=\text { Red } \end{aligned}$ |


| 8-Pin Threaded M12/ Euro-Style Cordsets-Double Ended |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Model (8-pin/ 8-pin ${ }^{5}$ | Length | Style | Dimensions |  | out |
| DEE2R-81D | 0.31 m (1 ft) | Female Straight/ Male Straight |  | Female |  |
| DEE2R-83D | 0.91 m ( 3 ft ) |  |  |  |  |
| DEE2R-88D | 2.44 m (8ft) |  |  |  |  |
| DEE2R-815D | $4.57 \mathrm{~m}(15 \mathrm{ft})$ |  |  |  |  |
| DEE2R-825D | $7.62 \mathrm{~m}(25 \mathrm{ft})$ |  |  |  |  |
| DEE2R-850D | 15.2 m (50 ft) |  |  |  |  |
| DEE2R-875D | 22.9 m (75 ft) |  |  | $\begin{aligned} & 1 \\ & 2 \\ & 3 \\ & 4 \end{aligned}$ | $5$ |
| DEE2R-8100D | 30.5 m (100 ft) |  |  | $\begin{aligned} & 1=\text { White } \\ & 2=\text { Brown } \\ & 3=\text { Green } \\ & 4=\text { Yellow } \end{aligned}$ | $\begin{aligned} & 5=\text { Gray } \\ & 6=\text { Pink } \\ & 7=\text { Blue } \\ & 8=\text { Red } \end{aligned}$ |

See Banner Engineering catalog or www.bannerengineering.com for additional models and complete information.

## Series Hookup Cordset Solution

This interconnection solution allows for quick hookup of a series of string emergency stop buttons. For the models listed below, Branch \#1 and Branch \#2 are 300 mm (12 in) in length and the length of the trunk is listed below.

## WARNI NG: Intentional Defeat

The CSS Series Hookup Cordsets must be installed so that they cannot be easily defeated.
Ensure that mounting and routing of the cordsets that are connected to the Trunk, Branch \#1, Branch \#2, and the E-Stop QD connector does not allow access to the QD connectors or allow improper connection bypassing the function of the Emergency Stop.

[^3]

| Model | Length | Description |
| :---: | :---: | :---: |
| CSS-M12F81M12M81M12F81 | 0.30 m (1 ft) | 8-pin M12 QD splitter cordset for use with SSA-EB1xxLxx-12ED1Q8 |
| CSS-M12F83M12M81M12F81 | 0.91 m ( 3 ft ) |  |
| CSS-M12F88M12M81M12F81 | 2.44 m (8ft) |  |



## U.S. Application Standards

ANSI B11.0 Safety of Machinery; General Requirements and Risk Assessment
ANSI B11.19 Performance Criteria for Safeguarding
ANSI NFPA 79 Electrical Standard for Industrial Machinery

## I nternational/ European Standards

ISO 12100 Safety of Machinery - General Principles for Design - Risk Assessment and Risk Reduction
ISO 13850 (EN 418) Emergency Stop Devices, Functional Aspects - Principles for Design
IEC 62061 Functional Safety of Safety-Related Electrical, Electronic and Programmable Control Systems
ISO 13849-1 (EN 954-1) Safety-Related Parts of Control Systems
IEC 60204-1 Electrical Equipment of Machines Part 1: General Requirements
IEC 60947-1 Low Voltage Switchgear - General Rules
IEC 60947-5-1 Low Voltage Switchgear - Electromechanical Control Circuit Devices
IEC 60947-5-5 Low Voltage Switchgear - Electrical Emergency Stop Device with Mechanical Latching Function

## EC Declaration of Conformity (DoC)

Banner Engineering Corp. herewith declares that the SSA-EB1(2).. Emergency Stop Push Buttons are in conformity with the provisions of the Machinery Directive (Directive 2006/42/EC) and all essential health and safety requirements have been met.

Representative in EU: Peter Mertens, Managing Director Banner Engineering Europe. Address: Park Lane, Culliganlaan 2F, 1831 Diegem, Belgium.

## Banner Engineering Corp Limited Warranty

Banner Engineering Corp. warrants its products to be free from defects in material and workmanship for one year following the date of shipment. Banner Engineering Corp. will repair or replace, free of charge, any product of its manufacture which, at the time it is returned to the factory, is found to have been defective during the warranty period. This warranty does not cover damage or liability for misuse, abuse, or the improper application or installation of the Banner product.

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Banner Engineering Corp. reserves the right to change, modify or improve the design of the product without assuming any obligations or liabilities relating to any product previously manufactured by Banner Engineering Corp.

## X-ON Electronics

Largest Supplier of Electrical and Electronic Components
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KMR633NG LFG 5GTH92001 5GTH9202242 6426-201-11343 MJ1226 MJTP1109B MJTP1138EAUTR MJTP1230BL MJTPSHW GS6.90F300QP 1-1977223-0 $\underline{1-1977120-4}$ ADTSA62NV ADTSA62RV ADTSA63KV ADTSA644NV ADTSM24NVTR ADTSMW66NV ADTSMW67RV ATM533VTR 1571300-3 B3F-3123 B3F-6055A B3F-B32-01-KIT 1977177-8 1977266-1 2-1977223-4 2-1977223-7 ADTS644KV ADTSA61RV ADTSA62KV ADTSA63NV ADTSA63RV ADTSA65NV ADTSM21NSVTR ADTSM25RVTR ADTSM31RVTR ADTSM32NVTR ADTSM61YVTR ADTSM63SVTR ADTSM644KVTR ADTSMW64RV ADTSMW69NV FSMRA4JHA04 GS4.70F300QP D38999/20JJ37SA TL1105B TL1105J ATH447K2Q ATM534VTR


[^0]:    1 A Qualified Person possesses a recognized degree or certificate or has extensive knowledge, training, and experience to solve problems relating to the emergency stop installation.

[^1]:    2 A Designated Person is identified in writing by the employer as being appropriately trained to perform a specified checkout procedure. A Qualified Person possesses a recognized degree or certificate or has extensive knowledge, training, and experience to solve problems relating to the emergency stop installation.
    3 When the button is reset, the normally closed contacts will chatter. When pressing the button, the normally open contacts will chatter. When designing a control circuit, take the contact chatter time into consideration. Do not expose the switch to external shocks, otherwise the contacts will bounce.

[^2]:    4 Dimension d is 6 mm or more when attaching a padlock from the side of a switch

[^3]:    5 Standard cordsets are yellow PVC with black overmold. For black PVC and overmold, add suffix "B" to model number (example, DEE2R-81DB)

