

Ø16 XA Series Emergency Stop Switches (w/Removable Contact Block)

Compact size - only 27.9 mm deep behind the panel. Reliable “Safe break action.”

- The depth behind the panel is only 27.9 mm for 1 to 4 contacts, both on illuminated and non-illuminated.
- IDEC's original “Safe break action” ensures that the contacts open when the contact block is detached from the operator.
- 1 to 4NC main contacts and 1NO monitor contact
- Push-to-lock, Pull or Turn-to-reset operator
- Direct opening action mechanism (IEC 60947-5-5, 5.2, IEC60947-5-1, Annex K)
- Safety lock mechanism (IEC 60947-5-5, 6.2)
- Degree of protection IP65 (IEC 60529)
- Gold plated silver contacts.
- Two operator sizes: Ø29 and Ø40 mm
- Dark red (Munsell 5R4/12) or bright red (Munsell 7.5R4.5/14) colors are available for the operator of non-illuminated emergency stop switches.



Standards and Specifications

Contact Ratings

NC main contacts (black) /NO monitor contact (blue)

Rated Insulation Voltage (Ui)		300V (illuminated part: 60V)				
Rated Thermal Current (Ith)		5A				
Rated Operating Voltage (Ue)		30V	125V	250V		
Rated Operating Current	Main Contacts	AC 50/60 Hz	Resistive Load (AC-12)	–	3A	3A
			Inductive Load (AC-15)	–	1.5A	1.5A
	DC	Resistive Load (DC-12)	2A	0.4A	0.2A	
		Inductive Load (DC-13)	1A	0.22A	0.1A	
Monitor Contacts	AC 50/60 Hz	Resistive Load (AC-12)	–	1.2A	0.6A	
		Inductive Load (AC-14)	–	0.6A	0.3A	
	DC	Resistive Load (DC-12)	2A	0.4A	0.2A	
		Inductive Load (DC-13)	1A	0.22A	0.1A	
Contact Material		Gold plated silver				

- Minimum applicable load: 5V AC/DC, 1 mA (reference value) (Operating area may vary according to the operating conditions and load types.)
- The rated operating currents are measured at resistive/inductive load types specified in IEC 60947-5-1.

Illumination Ratings

Rated Voltage	Operating Voltage	Rated Current
24V AC/DC	24V AC/DC ±10%	11 mA

Specifications

Applicable Standards	IEC60947-5-1, EN60947-5-1 IEC60947-5-5, EN60947-5-5, JIS C8201-5-1, UL991, NFPA79, UL508, CSA C22.2 No.14, GB14048.5
Operating Temperature	–25 to +60°C (no freezing) Illuminated: –25 to +55°C (no freezing)
Storage Temperature	–45 to +80°C
Operating Humidity	45 to 85% RH (no condensation)
Operating Force	Push to lock: 10.5N Pull to reset: 10N Turn to reset: 0.16 N·m
Minimum Force Required for Direct Opening Action	60N
Minimum Operator Stroke Required for Direct Opening Action	4.0 mm
Maximum Operator Stroke	4.5 mm
Contact Resistance	50 mΩ maximum (initial value)
Insulation Resistance	100 MΩ minimum (500V DC megger)
Overvoltage Category	II
Impulse Withstand Voltage	2.5 kV
Pollution Degree	3 (inside LED unit: 2)
Operation Frequency	900 operations/hour
Shock Resistance	Operating extremes: 150 m/s ² Damage limits: 1000 m/s ²
Vibration Resistance	Operating extremes: 10 to 500 Hz, amplitude 0.35 mm acceleration 50 m/s ² Damage limits: 10 to 500 Hz, amplitude 0.35 mm acceleration 50 m/s ²
Mechanical Life	250,000 operations minimum
Electrical Life	100,000 operations min 250,000 operations min (24V AC/DC, 100 mA)
Degree of Protection	IP65 (IEC60529)
Short-circuit Protection	250V/10A fuse (Type aM, IEC60269-1/IEC60269-2)
Conditional Short-circuit Current	1000A
Terminal Style	Solder terminal, PC board terminal
Recommended Tightening Torque for Locking Ring	0.88 N·m
Connectable Wire	1.25 mm ² maximum (AWG16 maximum)
Soldering Conditions	310 to 350°C, 3 seconds maximum
Weight	Ø29 mm: 23g, Ø40 mm: 28g

Pushlock Pull/Turn Reset (Solder Terminal/PC Board Terminal)

Non-illuminated

Shape	NC Main Contact	NO Monitor Contact	Part No.		Operator Color Code
			Solder Terminal	PC Board Terminal	
 ø29mm Mushroom	1NC	—	XA1E-BV301①	XA1E-BV301V①	R: Dark red RH: Bright red
	2NC	—	XA1E-BV302①	XA1E-BV302V①	
	3NC	—	XA1E-BV303①	XA1E-BV303V①	
	4NC	—	XA1E-BV304①	XA1E-BV304V①	
 ø40mm Mushroom	1NC	1NO	XA1E-BV311①	XA1E-BV311V①	
	2NC	1NO	XA1E-BV312①	XA1E-BV312V①	
	3NC	1NO	XA1E-BV313①	XA1E-BV313V①	
	1NC	—	XA1E-BV401①	XA1E-BV401V①	
	2NC	—	XA1E-BV402①	XA1E-BV402V①	
	3NC	—	XA1E-BV403①	XA1E-BV403V①	
	4NC	—	XA1E-BV404①	XA1E-BV404V①	
	1NC	1NO	XA1E-BV411①	XA1E-BV411V①	
	2NC	1NO	XA1E-BV412①	XA1E-BV412V①	
3NC	1NO	XA1E-BV413①	XA1E-BV413V①		

- Specify a color code in place of ① in the Part No.
- Pushlock pull/turn reset switches are locked when pressed, and reset when pulled or turned clockwise.
- Terminal cover (XA9Z-VL2) is ordered separately.
- For EMO Switches, see [D-052](#).

Illuminated

Shape	NC Main Contact	NO Monitor Contact	Part No.		Operator Color	
			Solder Terminal	PC Board Terminal		
 ø29mm Mushroom	1NC	—	XA1E-LV301Q4R	XA1E-LV301Q4VR	Dark red only	
	2NC	—	XA1E-LV302Q4R	XA1E-LV302Q4VR		
	3NC	—	XA1E-LV303Q4R	XA1E-LV303Q4VR		
	4NC	—	XA1E-LV304Q4R	XA1E-LV304Q4VR		
	 ø40mm Mushroom	1NC	1NO	XA1E-LV311Q4R		XA1E-LV311Q4VR
		2NC	1NO	XA1E-LV312Q4R		XA1E-LV312Q4VR
3NC		1NO	XA1E-LV313Q4R	XA1E-LV313Q4VR		
1NC		—	XA1E-LV401Q4R	XA1E-LV401Q4VR		
2NC		—	XA1E-LV402Q4R	XA1E-LV402Q4VR		
3NC		—	XA1E-LV403Q4R	XA1E-LV403Q4VR		
4NC		—	XA1E-LV404Q4R	XA1E-LV404Q4VR		
1NC		1NO	XA1E-LV411Q4R	XA1E-LV411Q4VR		
2NC		1NO	XA1E-LV412Q4R	XA1E-LV412Q4VR		
3NC	1NO	XA1E-LV413Q4R	XA1E-LV413Q4VR			

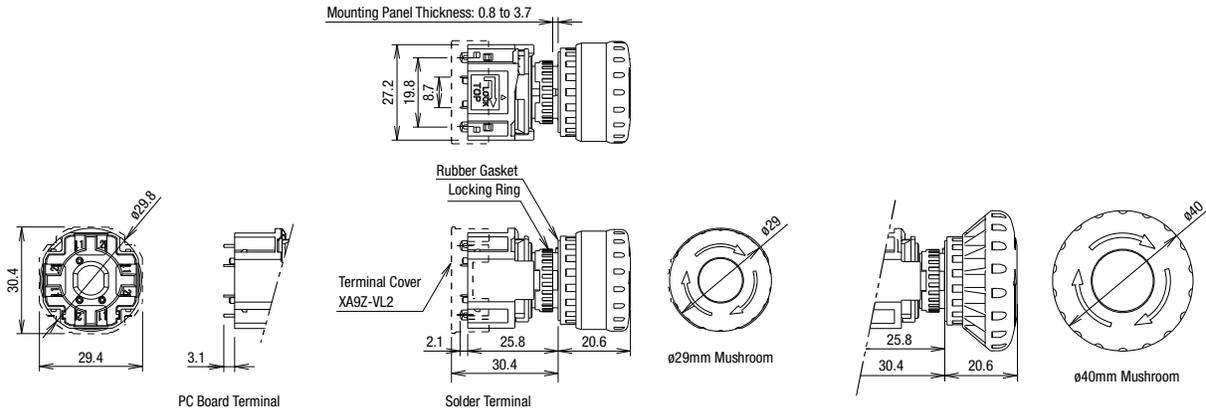
- Pushlock pull/turn reset switches are locked when pressed, and reset when pulled or turned clockwise.
- Terminal cover (XA9Z-VL2) is ordered separately.

- APEM
- Switches & Pilot Lights
- Control Boxes
- Emergency Stop Switches
- Enabling Switches
- Safety Products
- Explosion Proof
- Terminal Blocks
- Relays & Sockets
- Circuit Protectors
- Power Supplies
- LED Illumination
- Controllers
- Operator Interfaces
- Sensors
- AUTO-ID
- X6
- XA
- XW
- XN
- SEMI

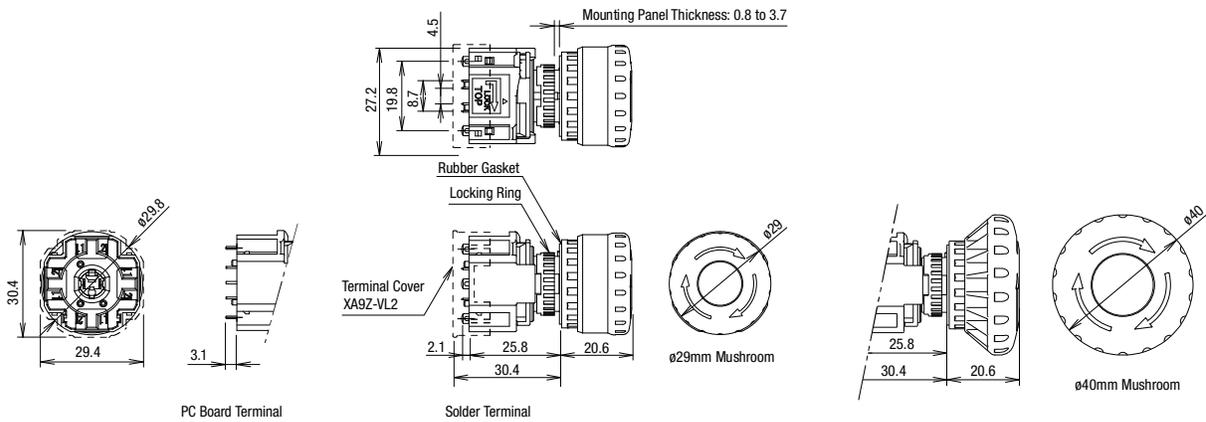
ø16 XA Series Emergency Stop Switches (w/Removable Contact Block)

Dimensions

Non-illuminated

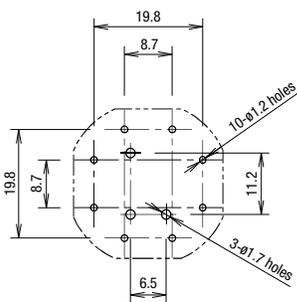


Illuminated

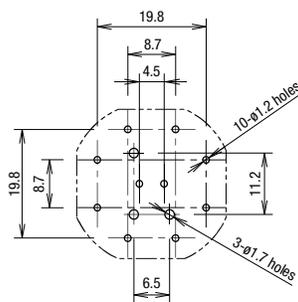


PC Board Layout (Bottom View)

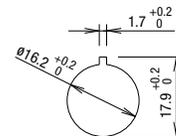
Non-Illuminated



Illuminated

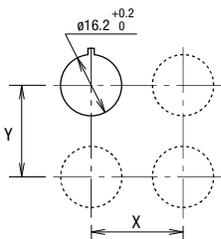


Panel Cut-out



All dimensions in mm.

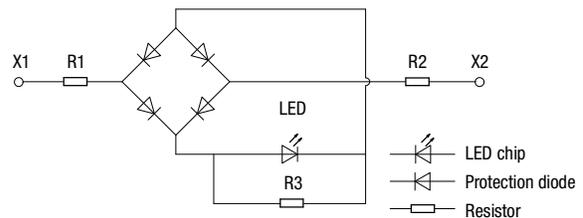
Mounting Hole Layout



	X	Y
ø29mm Mushroom	40 mm minimum	
ø40mm Mushroom	50 mm minimum	

The values shown above are the minimum dimensions for mounting with other ø16 mm pushbuttons. For other control units of different sizes and styles, determine the values according to the dimensions, operation, and wiring convenience.

LED Unit Internal Circuit

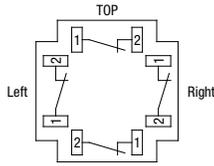


- APEM
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- Enabling Switches
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Terminal Arrangement (Bottom View)

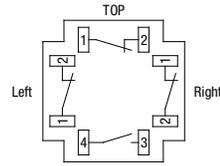
Non-illuminated

NC main contacts (black) only
 NC main contacts (black): Terminals 1-2



1NC: Terminals on right
 2NC: Terminals on right and left
 3NC: Terminals on right, left, and top

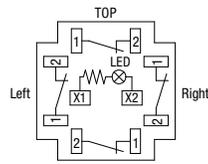
With NO monitor contacts (blue)
 NC main contacts (black): Terminals 1-2
 NO monitor contacts (blue): Terminals 3-4



1NC: Terminals on top
 2NC: Terminals on right and left

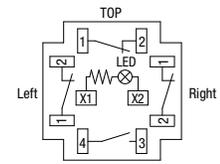
Illuminated

NC main contacts only (black)
 NC main contacts (black): Terminals 1-2



1NC: Terminals on right
 2NC: Terminals on right and left
 3NC: Terminals on right, left, and top

With NO monitor contacts (blue)
 NC main contacts (black): Terminals 1-2
 NO monitor contacts (blue): Terminals 3-4



1NC: Terminals on top
 2NC: Terminals on right and left

APEM

Switches & Pilot Lights

Control Boxes

Emergency Stop Switches

Enabling Switches

Safety Products

Explosion Proof

Terminal Blocks

Relays & Sockets

Circuit Protectors

Power Supplies

LED Illumination

Controllers

Operator Interfaces

Sensors

AUTO-ID

X6

XA

XW

XN

SEMI

Accessories and Replacement Parts (ø16 X6/XA Series Emergency Stop Switches)

Package quantity: 1

Description & Shape	Material	Part No.	Ordering No.	Package Quantity	Remarks
	Metal (nickel-plated brass)	MT-001	MT-001	1	<ul style="list-style-type: none"> Used to tighten the locking ring when installing the XA emergency stop switch onto a panel.
	Polyamide	XA9Z-LN	XA9Z-LNPN10	10	<ul style="list-style-type: none"> Black
	PBT	XA9Z-VL2	XA9Z-VL2PN02	2	<ul style="list-style-type: none"> White Used for solder terminals. Also applicable to the XW series.
	For Solder Terminal	XA9Z-LED2R	XA9Z-LED2R	1	<ul style="list-style-type: none"> Replacement LED unit for illuminated (for XA series only).
	For PC Board Terminal	XA9Z-LED2VR	XA9Z-LED2VR		
	Stainless Steel	MT-101	MT-101		<ul style="list-style-type: none"> Used for removing the LED unit.

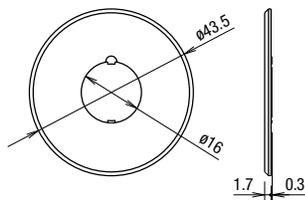
Nameplates (for ø16 X6/XA Emergency Stop Switches)

Package quantity: 1

Description	Legend	Part No.	Material	Plate Color	Legend Color
For ø30mm Operator	(blank)	HA AV-0	Polyamide	Yellow	Black
	EMERGENCY STOP	HA AV-27			
For ø40mm Operator	(blank)	HA AV4-0			
	EMERGENCY STOP	HA AV4-27			

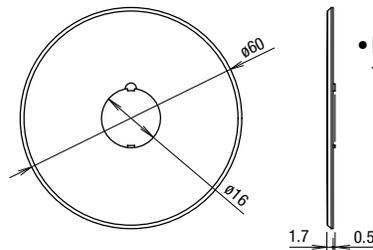
- Cannot be used with a switchguard.

For ø30mm Operator



- Panel thickness when using the nameplate: 0.5 to 2 mm

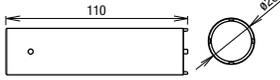
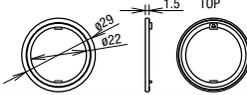
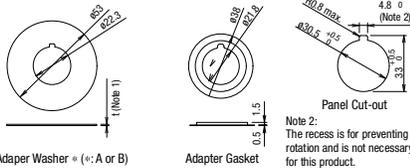
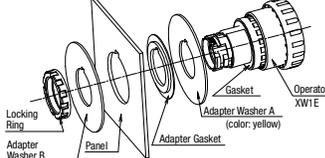
For ø40mm Operator



- Panel thickness when using the nameplate: 0.5 to 2 mm

All dimensions in mm.

Accessories (ø22 XW Series Emergency Stop Switches)

Description & Shape	Material	Part No.	Ordering No.	Package Quantity	Remarks
	Metal (brass) (weight: approx. 150g)	MW9Z-T1	MW9Z-T1	1	<ul style="list-style-type: none"> Used to tighten the locking ring when installing the XW emergency stop switch onto a panel. 
	Ring: Polyamide Gasket: Nitril rubber	HW9Z-RL	HW9Z-RLPN10	10	<ul style="list-style-type: none"> The anti-rotation ring is used for preventing the operator from turning. 
	PBT	XA9Z-VL2	XA9Z-VL2PN02	2	<ul style="list-style-type: none"> White Used for solder terminals.
	PPE	XW9Z-VL2M	XW9Z-VL2MPN02	2	<ul style="list-style-type: none"> Black Used for screw terminals. Attached to IP20 protection cover units.
	Polyamide	XW9Z-VL2MF	XW9Z-VL2MFPN02	2	<ul style="list-style-type: none"> Black Used on terminals for IP20 finger protection. Only solid wires can be used. The IP20 protection cover cannot be removed once installed.
	Rubber on metal base	XW9Z-A30E	XW9Z-A30EPN02	2	<ul style="list-style-type: none"> Yellow panel surface Used for installing XW1E emergency stop switches in ø30mm mounting hole. Can be used for XW1E emergency stop switches only. IP65 protection. Cannot be used with nameplates. Panel thickness when mounted: 0.8 to 3.0 mm  <p>Adapter Washer (A or B) Note 1: Adapter washer thickness (t) A = 1.2 mm B = 0.8 mm</p> <p>Adapter Gasket Note 2: The recess is for preventing rotation and is not necessary for this product.</p> <p>Panel Out-cut</p>  <ul style="list-style-type: none"> Panel Mounting

Notes:

- XW emergency stop switches of screw terminal are provided with a terminal cover.
- All dimensions in mm.

- APEM
- Switches & Pilot Lights
- Control Boxes
- Emergency Stop Switches
- Enabling Switches
- Safety Products
- Explosion Proof
- Terminal Blocks
- Relays & Sockets
- Circuit Protectors
- Power Supplies
- LED Illumination
- Controllers
- Operator Interfaces
- Sensors
- AUTO-ID

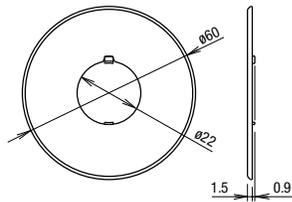
- X6
- XA
- XW
- XN
- SEMI

Nameplate (for ø22 Emergency Stop Switches)

Description	Legend	Part No.	Ordering No.	Package Quantity	Material	Plate Color	Legend Color
For ø40mm Operator	(blank)	HWAV-0-Y	HWAV-0-Y	1	Polyamide	Yellow	Black
	EMERGENCY STOP	HWAV-27-Y	HWAV-27-Y				
For ø60mm Operator	(blank)	HWAV5-0	HWAV5-0	1	PBT	Yellow	Black
	EMERGENCY STOP	HWAV5-27	HWAV5-27				
	EMERGENCY STOP	HWAV5F-27	HWAV5F-27PN10	10	PET film sticker		

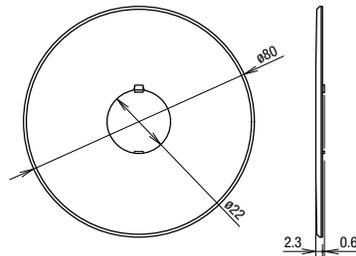
Dimensions

For ø40mm Operator



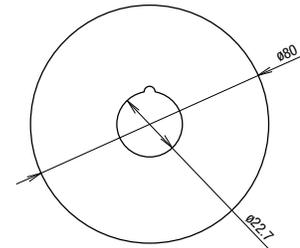
- Panel thickness when using the nameplate: 0.8 to 4.5 mm

For ø60mm Operator



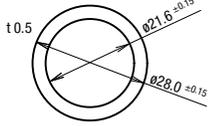
- Panel thickness when using the nameplate: 0.8 to 4 mm

Sticker Nameplate for ø60mm Operator

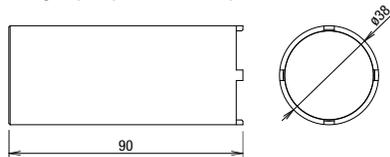
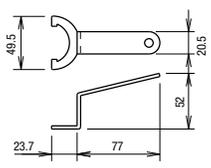


All dimensions in mm.

Maintenance Parts (for ø22 Emergency Stop Switches)

Description & Shape	Material	Part No.	Ordering No.	Package Quantity	Dimensions (mm)
 ø28.4 H5 M22 P1	Polyamide (black)	HW9Z-LN	HW9Z-LNPN05	5	<ul style="list-style-type: none"> • Cannot be used on XW Series (mechanical indicator)
	Nityl rubber	HW9Z-WM	HW9Z-WMPN10	10	
 ø27.8 t=5.0	Polyamide	CW9Z-LN	CW9Z-LNPN05	5	<ul style="list-style-type: none"> • For use on XW Series (mechanical indicator) only.

Accessories and Replacement Parts (for ø30 XN Series Emergency Stop Switches)

Name & Shape	Material	Part No.	Ordering No.	Package Quantity	Remarks
Terminal Cover 	PPE	XW9Z-VL2M	XW9Z-VL2MPN02	2	<ul style="list-style-type: none"> Black Used for screw terminals. Attached to IP20 protection cover units.
IP20 Fingersafe Terminal Cover 	Polyamide	XW9Z-VL2MF	XW9Z-VL2MFPN02	2	<ul style="list-style-type: none"> Black Used to change terminal cover to IP20 fingersafe terminal. Only solid wires can be used. Once installed, IP20 terminal cover cannot be removed.
Ring Wrench 	Brass	XN9Z-T1	XN9Z-T1	1	<ul style="list-style-type: none"> Used to tighten the locking ring when installing the XN emergency stop switch onto a panel. 
Ring Wrench 	Steel Trivalent chromate plating	TWST-T1	TWST-T1	1	<ul style="list-style-type: none"> Used to tighten the locking ring when installing the XN emergency stop switch onto a panel. 

- The XN series emergency stop switches are supplied with either terminal cover or IP20 fingersafe terminal cover.
- Padlocks and hasps are not supplied and must be ordered separately.

Nameplates (for ø30 Emergency Stop Switches)

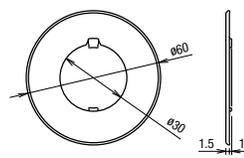
Description & Shape	Legend	Part No.	Package Quantity	Dimensions (mm)
	(blank)	HNAV-0	1	Polyamide Mounting panel thickness XN4E-□L4: 1.0 to 4.5 mm XN□E-□V4: 1.0 to 3.5 mm 
	EMERGENCY STOP	HNAV-27		

Plate color: Yellow (Munsell 2.5Y 8/10 or equivalent), Legend: Black

Padlock and Hasp

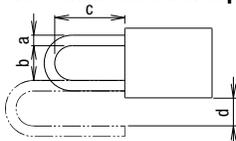
Padlocks and hasps of the following specifications can be used with padlockable emergency stop switches.

Padlock Size

a	b	c	d
7 mm maximum	19 mm minimum	39 mm minimum	15 mm minimum (Note)

Note: When the padlock is installed from the side of the bezel, dimension d requires a minimum of 6 mm. When the padlock is installed from the front of the button, dimension d requires a minimum of 15 mm.

Recommended Hasp



Maker	Part No.
PANDUIT CORP.	PSL-HD3 PSL-1A
Master Lock® Company LLC	420, 421

Use only padlocks or hasps that satisfy the specifications shown on the left. The maximum total weight for padlocks and hasps is 1500g. Make sure that the total weight does not exceed 1500g, otherwise the XN emergency stop switch may be damaged.

Make sure that locking and unlocking of the padlock and hasp do not interfere with other devices.

Padlocks and hasps are available from the following manufacturers.

Manufacturer	URL
PANDUIT CORP.	http://www.panduit.com/
Master Lock® Company LLC	http://www.masterlock.com/

- APEM
- Switches & Pilot Lights
- Control Boxes
- Emergency Stop Switches
- Enabling Switches
- Safety Products
- Explosion Proof
- Terminal Blocks
- Relays & Sockets
- Circuit Protectors
- Power Supplies
- LED Illumination
- Controllers
- Operator Interfaces
- Sensors
- AUTO-ID

- X6
- XA
- XW
- XN
- SEMI

Emergency Stop Guard for Machinery (Protective Shroud)

If the safety requirements of ISO13850:2015 4.3.2 or 4.5 is satisfied, the switchguard can be used safely by combining IDEC's switchguard and emergency stop switch, which is approved by TÜV Rheinland in ISO13850:2015 to be used as protective shroud with emergency stop switch.

In the past, emergency stop switches with switch guards (same definition as the term "protective shroud" used in standards) could not be used on machine tools or food processing machines in compliance with ISO/IEC standards.

However, in the latest revision, the use of a protective shroud is permitted with conditions. This is because the "Prevention of unintended actuation of an emergency stop device" was added as a safety requirement and the definition of a protective shroud is as below.

ISO13850:2015 3.7 protective shroud (protective shroud)

mechanical measure provided to reduce the possibility of unintended actuation of an emergency stop device.

Protective shroud can be used under the following conditions:

ISO13850:2015 4.5 Prevention of unintended acuation of an emergency stop device

The emergency stop device shall be designed to avoid unintended actuation.

The actuation of the emergency stop device shall not be impaired.

To prevent unintended actuation of the emergency stop device some precautions can be taken, e.g.:

- locate the emergency stop device away from foreseeable heavily trafficked areas,
- select the type of emergency stop device,
- select appropriate size or shape of the emergency stop device, or
- mount the emergency stop device within a recessed surface of the surrounding control panel.

The use of a protective shroud around the emergency stop device should be avoided, except when necessary to prevent unintended actuation and other measures are not practicable.

For emergency stop devices intended to be acutated by the hand the measures against unintended actuation shall not impede or hinder actuation with the palm of the hand, from any foreseeable position of the machine operator and others who could need to actuate them.

For details on protective shroud, see **D-055**.

APEM

Switches &
Pilot Lights

Control Boxes

Emergency
Stop SwitchesEnabling
Switches

Safety Products

Explosion Proof

Terminal Blocks

Relays & Sockets

Circuit
Protectors

Power Supplies

LED Illumination

Controllers

Operator
Interfaces

Sensors

AUTO-ID

X6

XA

XW

XN

SEMI