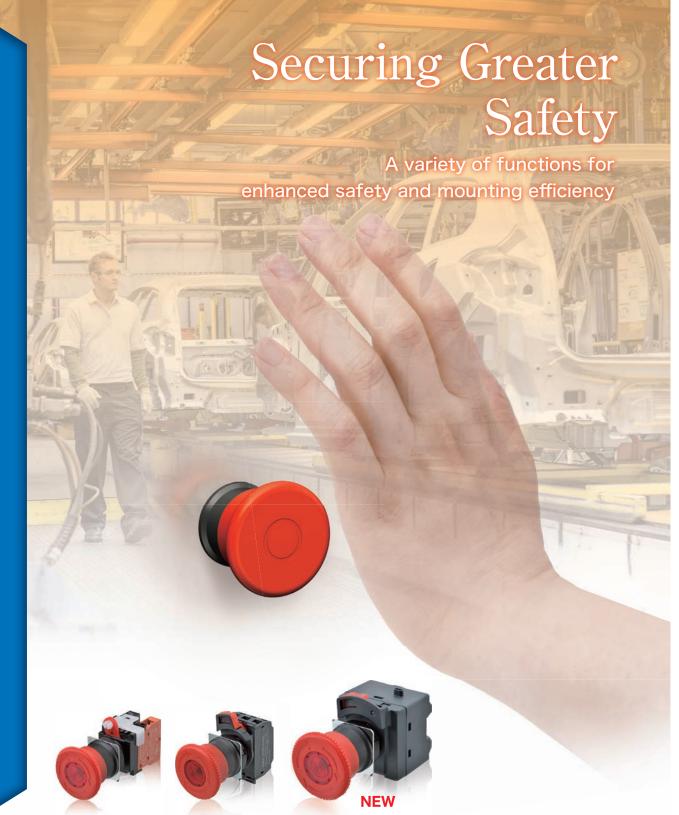
OMRON

Emergency Stop Pushbutton Switches A22NE-PD/A22NE-P/A22E Series



Basic: Screw Terminal Block Types A22E Series Vibration-resistant: Push-In Plus Terminal Block Types A22NE-P Series Push-In Plus Terminal Block + Lock-lever-linked Contact Types A22NE-PD Series 2 | Emergency Stop Pushbutton Switches A22NE-PD/A22NE-P/A22E Series

Machines Are Designed to Stop Without Fail.

An emergency stop pushbutton switch stops machine equipment in an emergency to protect the safety of workers. However, if the switch does not function properly due to human error, malfunction, defective wiring or other reasons, it will lead to a major accident. That is why Omron has focused on stopping machines without fail and produced a lineup of emergency stop switches with enhanced functionality.



>> Three Functions to Enhance Reliability

Stops machines when a Switch is improperly mounted.

•Cuts off the current when the lock lever is off. •Instantly detects work errors and lever damage.

Refer to page 4 for details.





Lock-lever-linked

Contacts

Reduces loose and detached wiring.

Wires are resistant to vibration and do not come off easily.Reduces work for wiring and maintenance.

Push-In Plus Terminal Block

Refer to page 5 for details.

Stable operation in harsh environments.

•Usable up to 80°C and pressures of 80 to 100 BAR. •Spray-resistant on the front and sides.



Refer to page 5 for details.

A Lineup That Allows You to Choose According to Your Needs



4 | Emergency Stop Pushbutton Switches A22NE-PD/A22NE-P/A22E Series

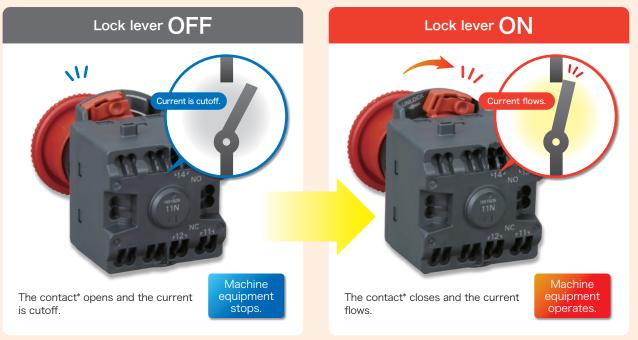
Accident Prevention/Stable Operation

Suppress Malfunctions Throughly with Functions for Various Applications.



Malfunction Problems During Emergencies

If the sliding operation of the lock lever is insufficient, the operation unit may not function properly when needed, even if pushed. With the lock-lever-linked contact function, if the sliding operation of the lock lever is insufficient, the original NC contact will turn to a NO state when the operation unit is not pushed, making it possible to detect errors from the state of the contact.



* The example shows an NC contact. However, all contacts are interlocked with the lock lever, and the statuses of NO contacts are also switched

For machine equipment that can cause major accidents

Ensures additional safety for machine equipment that cannot afford a slight delay.





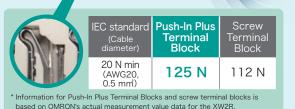
Push-In Plus Terminal Block A22NE-PD/A22NE-P Series

Prevents Loose and Detached Wiring Caused by Vibration During Operation

In addition to preventing unexpected stoppages caused by disconnection, it is also possible to reduce maintenance efforts.

Also help reduce the wiring work

Just insert wires like you would into an earphone jack. No tools are required. They help reduce the time and work involved in wiring.





Optional IP69K

A22NE-PD/A22NE-P Series

High-level Sealing that Is Resistant to Harsh Environments

Conventional OMRON emergency stop pushbutton switches were made to IP65 standards, but the unique technology used for our rubber-designed covers achieves IP69K specifications that can withstand hightemperature and high-pressure sprays from any direction.

High temperature:80°C High pressure:80 to 100 BAR

For sites that demand high-level sanitation control

Withstands high-temperature and high-pressure sprays without the need for an additional waterproof cover, allowing for worry-free installation in sites where cleaning with high-pressure washing machines is performed.

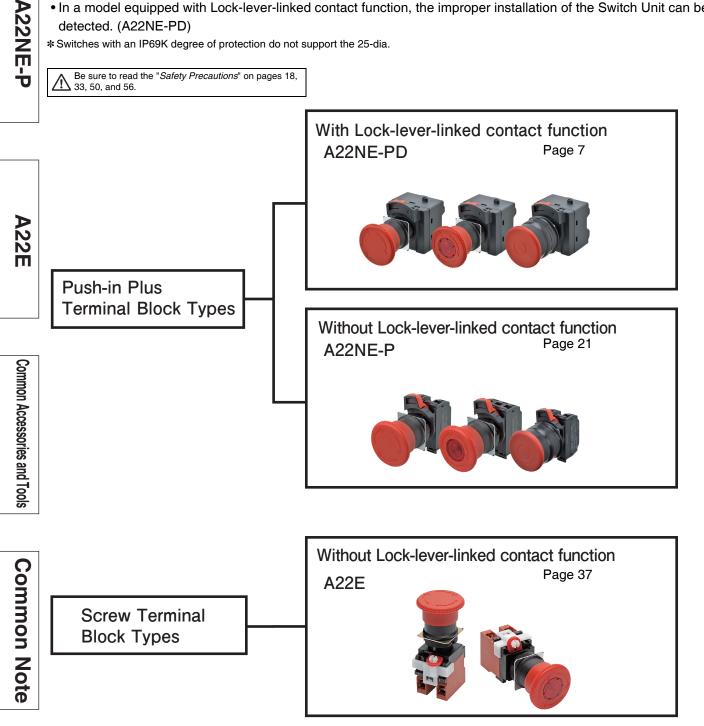
Emergency Stop Pushbutton Switches (22-dia. or 25-dia.) A22NE-PD/A22NE-P/A22E

Install in 22-dia. or 25-dia.

A22NE-PD

Panel Cutout (When Using a Ring)

- Direct opening mechanism to open the circuit when the contact welds.
- With a latching mechanism to prevent operating errors.
- · Lock lever for easily mounting and removing the Unit.
- Use 25-dia. ring to install in 25-dia. panel cutouts. *
- In a model equipped with Lock-lever-linked contact function, the improper installation of the Switch Unit can be detected. (A22NE-PD)
- * Switches with an IP69K degree of protection do not support the 25-dia.



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A22E

Emergency Stop Pushbutton Switches (22-dia. or 25-dia.) Push-in Plus Terminal Block Models With Lock-lever-linked Contact Function

Install in 22-dia. or 25-dia. Panel Cutout

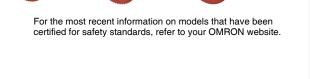
(When Using a Ring)

- . The small size of the control panel is realized by conserving space and changing the direction of the wiring.
- Since there is no looseness in the wiring, there is a reduction in the maintenance efforts.
- A maximum of up to four contact points can be combined together in the contact-point configuration.
- Oil-resistant to IP65 (non-lighted models) / IP65 (lighted models) / IP69K high-temperature, high-pressure cleaning (pull-reset models).
- Whether or not the Operation Unit and the Switch Unit have been properly mounted can be detected from the open/closed state of the contact (Lock-lever-linked contact function). * * All contacts are interlocked with the lock lever.
 - (The statuses of both NC contacts and NO contacts are switched.)

Be sure to read the "Safety Precautions" on pages 18 and 56.

Model Number Structure

.... Model Number I



CE c us listed 🗰

Model	Number Lege	end (C	omp	oletel	y Ass	embled)	Shipped as a so Lamp (lighted n		ides the Operation Ui and Switch Block.
	A22NE	•	2	3 - P	4 D	5	6 7		
1. Operat	ion Unit size (diamet	er)				5. Contacts			
Code	Description					5. Contacts		0	
S	30 dia.					Code	Number of Contacts		tacts
М	40 dia.							NO	NC
L	60 dia.					01	one contact two contacts	0	1
						02		0	2
						11		1	1
2. Reset	function					03	three contacts	0	3
Code	Description					21	_	2	1
None	Turn-reset					12		1	2
Р	Pull-reset *					22	four contacts	2	2
* The pull-	reset type is only availabl	e on the 40	dia.			13		1	3
	n Unit, non-lighted type.					04		0	4
Not avai	lable on lighted types.					Note. NO: 1a-co	ontact NC: 1b-conta	ct	
3. Termin	al specification								
Code	Description					6. LED lamp	voltage		
Р	Push-in plus terminal b	lock				Code	Description		
						N	Non-lighted		
						С	24 VAC/VDC		
4. Lock le	ever function					* Lighting color	is red.		

Code	Description					
D	Lock-lever-linked contact function					

69K IP69K *

7. Others (Degree of Protection)

IP65

Code

None

* IP69K is supported only by the Pull-reset models.

Description



Ordering Information

A22

List of Models (Completely Assembled) Non-lighted Models (Without EMO/EMS Indication)

Ē	Appearance	Operation		Degree of Protection	Contact configuration *	Set Model	Color of cap	
Ρ	Appoulation	opolation	•	Begree er reteetion	2NC	A22NE-MP-PD02-N		
					2NC, 1N0	A22NE-MP-PD12-N		
		40-dia. head		IDOE all mariatant	3NC	A22NE-MP-PD03-N		
		Medium Pull-reset A22NE-MP-PD		IP65 oil-resistant models	2NC, 2NO	A22NE-MP-PD22-N		
					3NC, 1N0	A22NE-MP-PD13-N	1	
					4NC	A22NE-MP-PD04-N		
					2NC	A22NE-MP-PD02-N-69K		
					2NC, 1N0	A22NE-MP-PD12-N-69K		
2		40-dia. head			3NC	A22NE-MP-PD03-N-69K		
3		Medium Pull-reset A22NE-MP-PD		IP69K	2NC, 2NO	A22NE-MP-PD22-N-69K		
Z					3NC, 1N0	A22NE-MP-PD13-N-69K		
Π					4NC	A22NE-MP-PD04-N-69K		
					2NC	A22NE-S-PD02-N		
					2NC, 1N0	A22NE-S-PD12-N		
		30-dia. head		IP65 oil-resistant	3NC	A22NE-S-PD03-N	- Red	
		Small Turn-reset A22NE-S-PD		models	2NC, 2N0	A22NE-S-PD22-N		
					3NC, 1NO	A22NE-S-PD13-N		
					4NC	A22NE-S-PD04-N		
		40-dia. head			2NC	A22NE-M-PD02-N	-	
					2NC, 1N0	A22NE-M-PD12-N		
				IP65 oil-resistant	3NC	A22NE-M-PD03-N		
>		Medium Turn-reset A22NE-M-PD		models	2NC, 2NO	A22NE-M-PD22-N	-	
ハッシン					3NC, 1N0	A22NE-M-PD13-N		
					4NC	A22NE-M-PD04-N	_	
••					2NC	A22NE-L-PD02-N		
					2NC, 1N0	A22NE-L-PD12-N	-	
		60-dia. head Large Turn-reset		IP65 oil-resistant	3NC	A22NE-L-PD03-N		
		A22NE-L-PD		models	2NC, 2NO	A22NE-L-PD22-N		
					3NC, 1NO	A22NE-L-PD13-N		
_					4NC	A22NE-L-PD04-N		
	representative f		Ū.	contact configuration	_	A22NE-L-PD04-N d [1NC, 2NO]. Ask your ON	IRON	
	Appearance	Operation	Degree of Protection	Contact configuration *	LED lamp voltage	Set Model	Color of ca	
5				2NC		A22NE-M-PD02-C		
2				2NC, 1NO		A22NE-M-PD12-C		
3		40-dia. head		3NC		A22NE-M-PD03-C		
2		Medium Turn-reset	IP65	2NC, 2NO	24 V AC/DC	A22NE-M-PD22-C	Red	

Lighted Model (Without EMO/EMS Indication)

Appearance	Operation	Degree of Protection	Contact configuration *	LED lamp voltage	Set Model	Color of cap	
	40-dia. head Medium Turn-reset A22NE-M-PD⊡⊡-C		2NC	24 V AC/DC	A22NE-M-PD02-C		
		IP65	2NC, 1NO		A22NE-M-PD12-C		
			3NC		A22NE-M-PD03-C		
			2NC, 2NO		A22NE-M-PD22-C	Red	
			3NC, 1NO		A22NE-M-PD13-C	_	
			4NC		A22NE-M-PD04-C		

* In addition to the above, we also provide the following contact configurations: [1NC], [1NC, 1NO], and [1NC, 2NO]. Ask your OMRON representative for details.

OMRON

Accessories (Order Separately) **Operation Unit**

Dperation Ur Ion-lighted	Size	Small (30 dia.)	Medium (40 dis)		_
Function	Degree of protection	Sman (30 dia.)	Medium (40 dia.) Single item order model	Large (60-dia.)	_
	Degree of protection		A22NE-MP-N		-
Pull-reset	IP65 oil-resistant models				ſ
unreset	ІР69К		A22NE-MP-N-69K		
Turn-reset	IP65 oil-resistant models	A22NE-S-N	A22NE-M-N A22NE-MRO-N A22NE-MRO-N-RD	A22NE-L-N	
			A22NE-MRS-N A22NE-MRS-N-RD		
ighted			_		—
	Size	Medium (40 dia.)	_		
Function	Sealing capability	Single item order model			

Lighted

	Size	Medium (40 dia.)
Function	Sealing capability	Single item order model
		A22NE-M-L
Turn-reset	IP65	

LED lamp

Appearance	LED light	Rated voltage	Model	Remarks
	Red	24 V AC/DC	A22NZ-L-RC	These are provided with the completely assembled set of lighted models. Order LED Lamps only when replacing them.

Control Box

Ň	Item		Appearance	Model	Remarks
2NE-P	Control Box	0	One hole, yellow box	A22NZ-A-B101Y	Material: Polycarbonate resin. For 22.3-mm panel hole diameter.

Note: For details on the accessories common to the screw terminal block models and push-in plus terminal block models, refer to "Common Accessories and Tools (Order Separately)" on page 51.

Specifications

Certified Standard Ratings

- UL508 (File No. E76675), CSA C22.2 No.14 5 A at 125 VAC, 3 A at 250 VAC B300
- TÜV (EN60947-5-1) Certified direct opening -(EN60947-5-5)
- AC-15 3 A at 125 VAC DC-13 1 A at 30 VDC
- CCC (GB/T14048.5)
- AC-15 3 A at 125 VAC
- DC-13 1 A at 30 VDC

Applicable Standards

UL1059, UL486E

Note: Use a 10 A fuse type gI or gG that conforms to IEC60269 as a short-circuit protection device. This fuse is not provided in the main unit.

Ratings

Contacts (Standard Load)

Rated		Rated	Rated current (A)				
insulation voltage (V)	Rated carry current (A)	voltage (V)	AC15 (Inductive load)	AC12 (Resistive load)	DC13 (Inductive load)	DC12 (Resistive load)	
	5	30 VAC					
		125 VAC	3 A	5 A			
250		250 VAC	1.5 A	3 A			
250	5	30 VDC			1 A	2 A	
		125 VDC			0.22 A	0.4 A	
		250 VDC			0.1 A	0.2 A	

Note: 1. The above ratings were obtained by conducting tests under the following conditions.

(1) Ambient temperature: 20°±2°C

- (2) Ambient humidity: 65±5%
- (3) Operating frequency: 20 operations/minute
- 2. Minimum applicable load: 1 mA at 5 VDC (Resistive load) The operating range may vary depending on the usage conditions and type of load.

Certified Standards

Certification body	Standards	File No.
UL *	UL508, C22.2 No.14	E76675
TÜV SÜD	EN60947-5-1 (Certified direct opening), EN60947-5-5	Consult your OMRON representative for details.
CQC (CCC)	GB/T14048.5	Consult your OMRON representative for details.

Note: Only models with NC contacts have a direct opening mechanism.

* UL-certification for CSA C22.2 No. 14 has been obtained.

LED Lamp (A22NZ-L-RC)

Rated voltage	Operating voltage	Current value	L
24 VAC/VDC	24 VAC/VDC ± 10%	Approx. 12 mA	

11

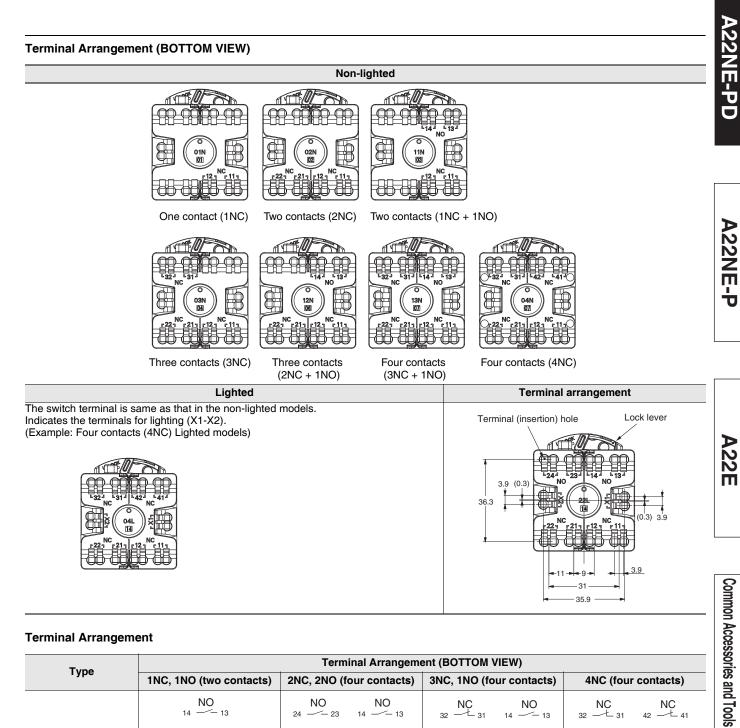
ž	Characteris								
П	Operation		l urn-	reset	Pull-reset				
A 22NE-PD			Non-lighted model	Lighted Model	Non-lighted model	Non-lighted model (Models with IP69K)			
Ĵ	Item		A22NEPD	A22NE-M-PD	A22NE-MP-PD	A22NE-MP-PD			
	Allowable operating	Mechanical	30 operations/minute or les	s (One operation consists o	of set and reset operations.)				
	frequency	Electrical	30 operations/minute or les	s (One operation consists o	of set and reset operations.)				
	Insulation resistan	nce *1	100 M Ω min. (at 500 VDC))					
	Contact resistand	ce	100 m Ω max. (initial value))					
		Between terminals of same polarity*1	2,000 VAC, 50/60 Hz 1 mi	,000 VAC, 50/60 Hz 1 minute (initial value)					
ASSNE-D	Dielectric strength	Between terminals of different polarity	2,000 VAC, 50/60 Hz 1 mi	000 VAC, 50/60 Hz 1 minute (initial value)					
		Between each terminal and ground	2,000 VAC, 50/60 Hz 1 mi	nute (initial value)					
	Vibration resistance	Malfunction	10 to 55 Hz, 1.5 mm double amplitude (contact separation within 1 ms)						
	Shock resistance	Malfunction	250 m/s ² max. (contact se	paration within 1 ms)					
		Mechanical	300,000 operations min. (One operation consists of set and reset operations.)100,000 operations min. (One operation consists of set and reset operations.)						
A 225	Durability	Electrical (100 mA at 24 VAC (Resistive load))	250,000 operations min. (0	100,000 operations min. (One operation consists of set and reset operations.)					
S T		Electrical (3 mA at 250 VAC (Resistive load))	100,000 operations min. (0						
	Ambient operating	temperature *2	-20 to +70°C	-20 to +55°C	-20 to +70°C	-20 to +70°C *3			
	Ambient operatin	g humidity	35 to 85% RH						
	Ambient storage te	emperature *2	-40 to +70°C						
	Degree of protect	tion *4	IP65 oil-resistant models	IP65	IP65 oil-resistant models	IP69K			
Comm	Electric shock prot		Class II						
30	PTI (tracking cha	racteristic)	175						
2	Degree of contan		3 (EN 60947-5-1)						
non Accessories and Tools	Minimum direct o		11 mm						
ŝ	Minimum direct or	pening force	45 N						
D.	Conditional short-		100 A (EN 60947-5-1)						
ne	Wight (for a 40-dia. head 2NC/2NO Operation Unit)		Approx. 95 g	Approx. 95 g	Approx. 125 g	Approx. 135 g			

*2. With no icing or condensation.
*3. Capable of operation at up to 80°C under IP□9K testing conditions per JIS D 5020.
*4. The degree of protection from the front of the panel.

Operating Characteristics

	Turn-reset	Pull-reset		
Item	Lighted / non-lighted models	Non-lighted model	Non-lighted model (Models with IP69K)	
Total travel force (TTF)	45 N max.	60 N max.	70 N max.	
Return force (RF)	0.25N·m max. *	60 N max.	70 N max.	
Total travel (TT)	10 ±1 mm	5.5 ±1 mm		
	10 ±1 mm	5.5 ±1 mm		

* Rotation torque value.



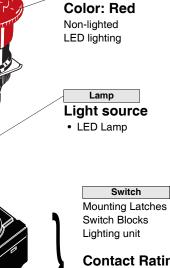
Terminal Arrangement

Туре	Terminal Arrangement (BOTTOM VIEW)							
туре	1NC, 1NO (two contacts)	2NC, 2NO (four contacts)	3NC, 1NO (four contacts)	4NC (four contacts)				
	NO 14	NO NO 24	NC NO 32	NC NC 32				
Non-lighted	NC 12	NC NC 22	NC NC 22 - 21 12 - 11	NC NC 22				
Lighted	NO 14 13 x2	$\begin{array}{ccc} NO & NO \\ 24 & -23 & 14 & -13 \\ \hline X2 & - & X1 \end{array}$	$\begin{array}{cccc} NC & NO \\ 32 & 31 & 14 & 13 \\ x2 & & X1 \end{array}$	$\begin{array}{c} NC \\ 32 \underbrace{-1}_{31} \\ x2 \underbrace{-1}_{31} \\ x2 \underbrace{-1}_{42} \\ x1 \end{array}$				
	NC 12	NC NC 22	NC NC 22	NC NC 22				

Note: The terminal arrangement shows the representative. It depends on the number of contacts in the series.

Structure and Nomenclature

A22NE-P



Operation Unit

Contact Ratings

3 A at 250 VAC 5 A at 125 VAC

Lighting Method Non-lighted Lighted (LED)

A22E

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(Unit: mm)

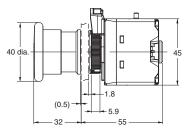
Dimensions

Non-lighted Models

A22NE-MP-PD

Pull-reset (40-dia.) Degree of Protection: IP65 oil-resistant models

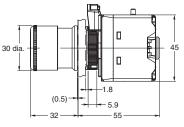




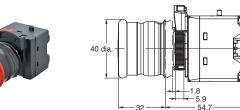
A22NE-S-PD

Small Turn-reset (30-dia.) Degree of Protection: IP65 oil-resistant models





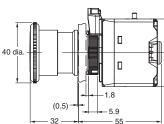
Pull-reset (40-dia.) Degree of Protection: IP69K



A22NE-M-PD

Medium Turn-reset (40-dia.) Degree of Protection: IP65 oil-resistant models



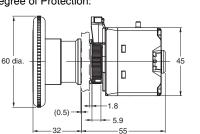


Note: The dimensions the same even if the Operation Unit is replaced with the A22NE-MR□-N or the A22NE-MR□-N-RD.

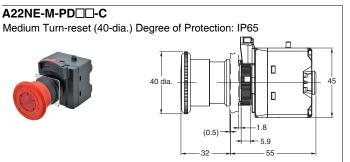
A22NE-L-PDDD-N

Large Turn-reset (60-dia.) Degree of Protection: IP65 oil-resistant models





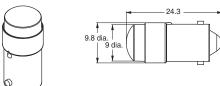
Lighted Model



Note: Unless otherwise specified, a tolerance of ±0.8mm applies to all dimensions.

Accessories (Order Separately)

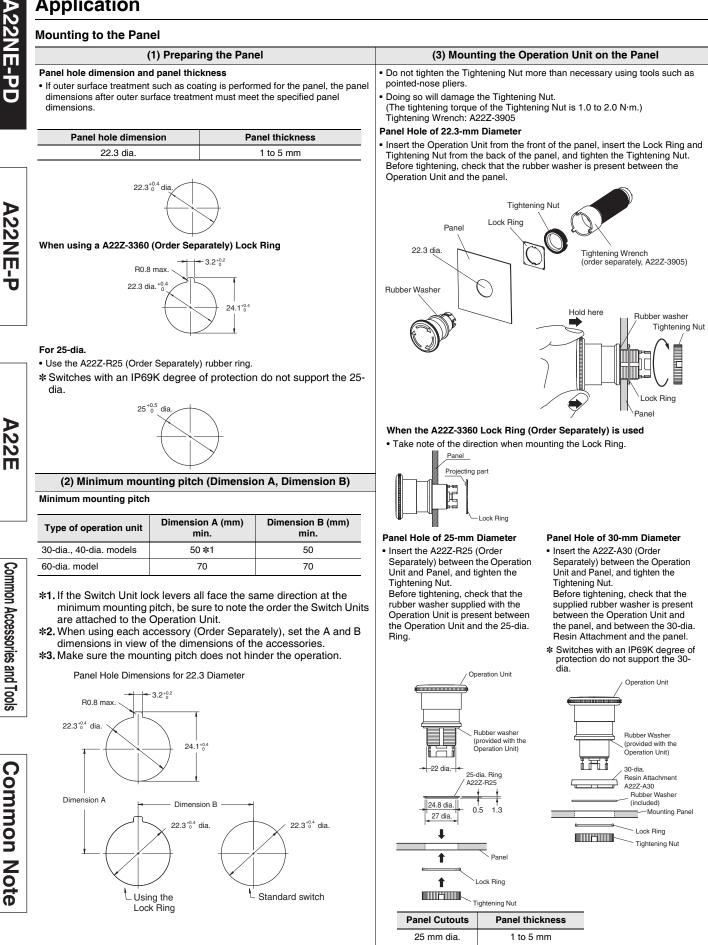
LED Lamp A22NZ-L-RC



Note: For details on the accessories common to the screw terminal block types and push-in plus terminal block types, refer to "Common Accessories and Tools (Order Separately)" on page 51.

Application

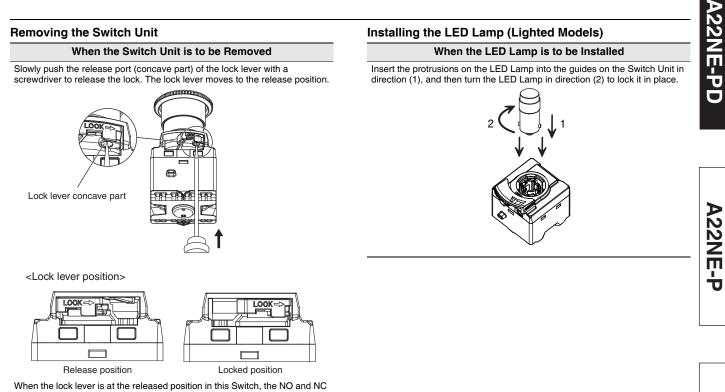
Mounting to the Panel



30 mm dia

1 to 3 mm

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contact operation is reversed.

Set the lock lever to the locked position when using the Switch.

Common Note

Common Accessories and Tools

A22E

Safety Precautions

Be sure to read the precautions for All PushButton Switches in the website at: http://www.ia.omron.com/.

Indication and Meaning for Safe Use

	-
Warning	Indicates a potentially hazardous situation that, if not avoided, could result in serious injury or death. Additionally there may be significant property damage.
Precautions for Safe Use	Comments on what to do or avoid doing, to use the product safely.
Precautions for Correct Use	Supplementary comments on what to do or avoid doing to use the product safely and prevent its malfunctioning or an adverse effect on its performance or functions.

Do not perform wiring with power supplied to the Switch/ Indicator. Do not touch the terminals or other charged parts while power is being supplied. Doing so may result in electric shock.

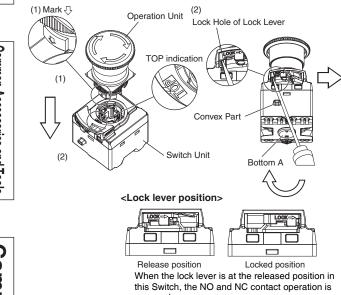
Precautions for Safe Use

 Make sure the Operation Unit and the Switch Unit are properly assembled.

<Assembling the Operation Unit and Switch Unit>

- (1) Assembling the Operation Unit and Switch Unit Align the TOP indication (the mark ↓) on the Operation Unit with the TOP indication on the Switch Unit, and insert the Operation Unit while keeping the bottom A pressed.
- (2) Locking the lock lever

With a screwdriver inserted in the lock hole of the lock lever, bring the screwdriver in contact with the convex part of the case, and turn the lock lever until a clicking sound is heard.



reversed. Set the lock lever to the locked position when using the Switch.

• When transition wiring is performed, make sure the switching current inside the Switch and the current based on the transition wiring is below the rated current of the Switch.

If a current value higher than the rated current flows, it could result in emission of heat, or damage and deformation of the Switch, which could cause fire and locking of the contact, and thus a loss of safety.

- Do not disassemble or modify the Switch/Indicator under any circumstances.
- Doing so may prevent the Switch/Indicator from functioning to its full capability. Do not drop the Switch/Indicator. Do not apply pressure that may deform or alter the Switch/Indicator.
- The durability of the Switch varies considerably depending on the switching conditions. Always test the Switch/Indicator under actual working conditions before application and use the Switch/Indicator only for the number of switching operations allowed.
- Do not allow the load voltage and current to exceed the rated value. This may damage or burn out the Switch/Indicator.
- Do not use the Switch/Indicator in locations where explosive or flammable gases or liquid may be present or scattered. The electric ark or the heat caused by switching contacts may cause a fire or explosion.
- Do not use the Switch/Indicator in locations where toxic gases, such as H₂S, SO₂, NH₃, HNO₃, and Cl₂, may be present, or in locations subject to high temperature or humidity. Doing so may damage the Switch/Indicator due to contact failure or corrosion.
- Do not use the Switch/Indicator submersed in oil or water, or in locations continuously subject to splashes of oil or water. Doing so may result in oil or water entering and damaging the Switch/ Indicator.
- Do not use or keep the Switch/Indicator under the following conditions:
 - Subject to severe temperature changes.
 - Subject to high humidity or condensation.
 - Subject to severe vibration or shock.
 - Where direct rays of the sun strike.
 - Where sea breeze may be present.
- Make sure that a rubber washer is present between the Operation Unit and the panel. In models with IP69K, make sure the rubber bush of the Operation Unit is properly attached.
 Otherwise, the specifications of the protective structure may not be

Otherwise, the specifications of the protective structure may not be satisfied.

- Do not apply excessive force to the Switch or wirings. Damage or deformation of the Switch Unit could result in an improper contact or a loss of safety.
- Use an appropriate wiring and crimp terminals (hereinafter, called ferrule terminals).
- Exercise caution to avoid wiring errors when connecting the terminals.
- To prevent wiring materials from smoking or ignition, confirm wire ratings and use the wiring materials given in the following table.

Wire Type	Wire	Recommended	Wire coating peeling
	material	Wire	amount
Solid wire/ Stranded Wire	Copper	0.25 to 1.5 mm ² AWG 24 to 16	Ferrules used: 10 to 12 mm (Varies depending on the recommended ferrule conductor length) Ferrules not used: 8 mm

Use wiring crimp terminals and ferrule terminals of the specified size.

Common Accessories and Tools

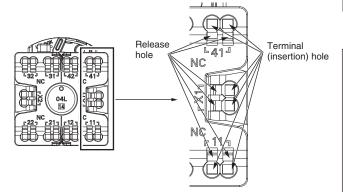
Common Note

- After storing the product for a long time exceeding 1 year, perform, at a minimum, inspections of the operating characteristics, contact resistance, insulation resistance, and dielectric strength as well as evaluate the product under the working conditions.
- This product is intended for indoor use only. Using the product outdoors will result in failure.
- Do not wire anything to the release holes.
- Do not tilt or twist a flat-blade screwdriver while it is inserted into a release hole on the terminal block. The terminal block may be damaged.
- Insert a flat-blade screwdriver into the release holes at an angle. The terminal block may be damaged if you insert the screwdriver straight in.
- Do not allow the flat-blade screwdriver to fall out while it is inserted into a release hole.
- Do not bend a wire past its natural bending radius or pull on it with excessive force.
- Doing so may cause the wire disconnection.
- Do not insert more than one wire into each terminal insertion hole.
 When mounting on a device with high airtightness, test operation in advance. There is a risk that the negative pressure will prevent the Operation Unit of from returning.
- Although the contacts of an A22NE-PD can be used with both the standard loads and microloads, once a contact has opened or closed under a load, you cannot again connect a small-capacity load. Doing so could roughen the contact surface, and result in loss of contact reliability.
- In the case of loads where an inrush current occurs when the contact is opened or closed, the durability may reduce due to extreme wear on the contacts.
 If necessary, insert a contact protection circuit.
- If a contact weld, the lock lever might not return to the release
- position, and contact inversion might not occur. In such a case, move the lock lever to the release position, and remove the Switch Unit from the Operation Unit.

Precautions for Correct Use

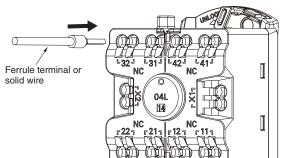
Wiring

1. Connecting Wires to the Push-In Plus Terminal Block Part Names of the Terminal Block



Connecting Wires with Ferrules and Solid Wires

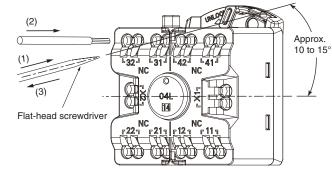
- Insert the solid wire or ferrule straight into the terminal block until the end strikes the terminal block.
- If a wire is difficult to connect because it is too thin, use a flat-blade screwdriver in the same way as when connecting stranded wires.



Connecting Stranded Wires

Use the following procedure to connect the wires to the terminal block.

- 1. Hold a flat-blade screwdriver at an angle and insert it into the release hole. The angle should be appropriately 10 to 15°. If the flat-blade screwdriver is inserted correctly, you will feel the spring in the release hole.
- With the flat-blade screwdriver still inserted into the release hole, insert the wire into the terminal hole until the end strikes the terminal block.
- **3.** Remove the flat-blade screwdriver from the release hole.



A22NE

A22NE-

Common Accessories and Tools

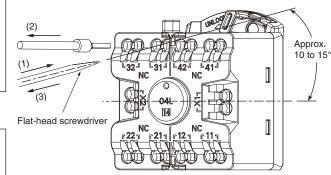
Checking Connections

- · After the insertion, pull gently on the wire to make sure that it will not come off and it is securely fastened to the terminal block.
- If you use a ferrule with a conductor length of 10 mm, part of the conductor may be visible after the ferrule is inserted into the terminal block, but the product insulation distance will still be satisfied.

2. Removing Wires from the Push-In Plus Terminal Block

Use the following procedure to remove wires from the terminal block. The same method is used to remove stranded wires, solid wires, and ferrules.

- 1. Hold a flat-blade screwdriver at an angle and insert it into the
- release hole. The angle should be appropriately 10 to 15°. 2. With the flat-blade screwdriver still inserted into the release hole,
- remove the wire from the terminal insertion hole.
- 3. Remove the flat-blade screwdriver from the release hole.



3. Recommended Ferrules and Crimp Tools Coating peeling amount

Recommend Wire Type	Stripping length (Ferrules not used)
0.25 to 1.5 mm ² /AWG 24 to AWG 16	8 mm

Recommended ferrules

Applicable wire		Ferrule	Stripping length (mm)	Recommended ferrules						
(mm²)	(AWG)	length (mm)	(Ferrules not used)	Phoenix Contact product	Weidmuller product	Wago product				
0.25	24	8	10	AI 0, 25-8	H0.25/12	216-301				
0.25	24	10	12	AI 0, 25-10						
0.34	22	8	10	AI 0, 34-8	H0.34/12	216-302				
0.34	22	10	12	AI 0, 34-10						
0.5	20	8	10	AI 0, 5-8	H0.5/14	216-201				
0.5	20	10	12	Al 0, 5-10	H0.5/16	216-241				
0.75	.75 18	8	10	AI 0, 75-8	H0.75/14	216-202				
0.75		10	10	10	10	10	10	12	Al 0, 75-10	H0.75/16
1/1.25	10/17	8	10	AI 1-8	H1.0/14	216-203				
1/1.20	5 18/17	10	12	Al 1-10	H1.0/16	216-243				
1.25/1.5	17/16	8	10	Al 1, 5-8	H1.5/14	216-204				
1.20/1.0 17/10	10	12	Al 1, 5-10	H1.5/16	216-244					
Recom	Recommended Crimp Tools			CRIMPFOX6 CRIMPFOX6T-F CRIMPFOX10S	PZ6 roto	Variocri mp4				

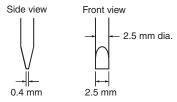
Note: 1. Make sure that the outer diameter of the wire coating is smaller than the inner diameter of the insulation sleeve of the recommended ferrule.

2. Make sure that the ferrule processing dimensions conform to the following figures.

8 to 10 mm Max. 1.9 mm Max. 2.6 mm

Recommended Flat-Blade Screwdrivers

Use a flat-blade screwdriver to connect and remove wires. Use one of the following flat-blade screwdrivers. The following table shows manufacturers and models as of 2015/Dec.



Model	Manufacture
ESD 0,40 × 2,5	Wera
SZS 0,4 × 2,5 SZF 0-0,4 × 2,5 *	Phoenix Contact
0.4 × 2.5 × 75 302	Wiha
AEF.2,5 × 75	Facom
210-719	Wago
SDI 0,4 × 2,5 × 75	Weidmuller

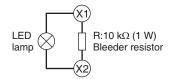
* The SZF 0-0,4 × 2,5 (manufactured by Phoenix Contact) can be procured through an OMRON exclusive purchase form (XW4Z-00B).

· After wiring the Switch/Indicator, provide a sufficient insulation distance.

LED Lamps

- · A current-limiting resistor is built in the LED lamp, so the installation of an external resistance is not required.
- · Lighting malfunction of the LED lamp A micro-current of approximately 0.1 mA or less is sufficient to turn on the LED lamps. Take a countermeasure like adding a resistor to prevent mis-lighting in parallel to the LED lamp. The micro-current varies with the machine (leak current or stray capacity between cables, etc.). Select resistance value and allowable power consumption that meet the actual current.

(Example of lighting malfunction prevention circuit) When using a 24 VAC/DC Lighted Model



Be sure to read the "Safety Precautions" on page 56.

OMRON

Emergency Stop Pushbutton Switches (22-dia. or 25-dia.) Push-in Plus Terminal Block Models

A22NE-P

Install in 22-dia. or 25-dia. Panel Cutout

(When Using a Ring)

- The small size of the control panel is realized by conserving space and changing the direction of the wiring.
- Since there is no looseness in the wiring, there is a reduction in the maintenance efforts.
- A lock lever mechanism that can be easily operated is adopted.
- A maximum of up to six contact points can be combined together in the contact-point configuration.
- Oil-resistant to IP65 (non-lighted models) / IP65 (lighted models) / Supports IP69K high-temperature, high-pressure cleaning (pullreset models).

/!\ Be sure to read the "Safety Precautions" on pages 33 and 56.

Model Number Structure



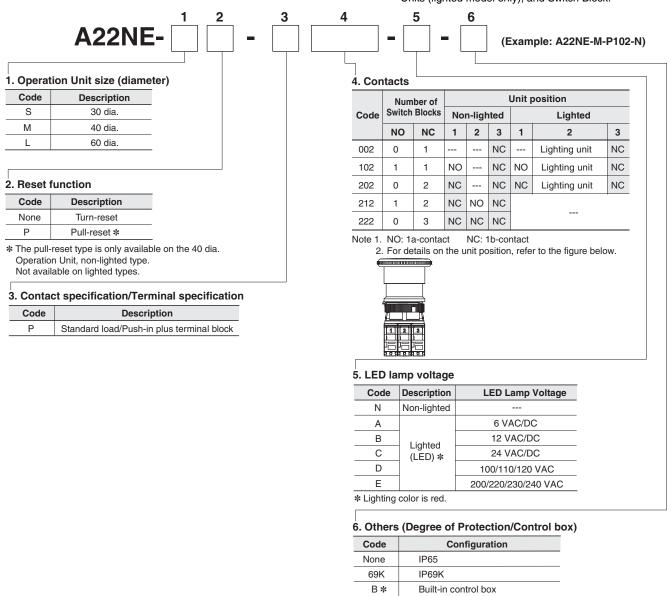




For the most recent information on models that have been certified for safety standards, refer to your OMRON website. A22NE-PD

Model Number Legend (Completely Assembled)....... Shipped as a set which includes the Operation Unit, LED

Lamp (lighted model only), Mounting Latches, Lighting Units (lighted model only), and Switch Block.



* One-contact unit type.

Common Note

A22E

Ordering Information

List of Models (Completely Assembled) Non-lighted Models

ppearance	Operation	Degree of Protection	Contact configuration *	Set Model	Color of ca
_			1NC (1)	A22NE-MP-P002-N	
			1NC, 1NO (2)	A22NE-MP-P102-N	-
	40-dia. head Medium Pull-reset	IP65 oil-resistant models	2NC (2)	A22NE-MP-P202-N	
	A22NE-MP-P 2-N	modelo	2NC, 1NO (3)	A22NE-MP-P212-N	
			3NC (3)	A22NE-MP-P222-N	
-			1NC (1)	A22NE-MP-P002-N-69K	
	40-dia. head		1NC, 1NO (2)	A22NE-MP-P102-N-69K	
	Medium Pull-reset	IP69K	2NC (2)	A22NE-MP-P202-N-69K	
	A22NE-MP-P 2-N-69K		2NC, 1NO (3)	A22NE-MP-P212-N-69K	
			3NC (3)	A22NE-MP-P222-N-69K	Red
	30-dia. head Small Turn-reset A22NE-S-P⊡⊡2-N		1NC (1)	A22NE-S-P002-N	
			1NC, 1NO (2)	A22NE-S-P102-N	
			2NC (2)	A22NE-S-P202-N	
			2NC, 1NO (3)	A22NE-S-P212-N	
			3NC (3)	A22NE-S-P222-N	
-			1NC (1)	A22NE-M-P002-N	
	40-dia, head		1NC, 1NO (2)	A22NE-M-P102-N	
	Medium Turn-reset		2NC (2)	A22NE-M-P202-N	
A22NE-M-P	A22NE-M-P		2NC, 1NO (3)	A22NE-M-P212-N	
			3NC (3)	A22NE-M-P222-N	
			1NC (1)	A22NE-L-P002-N	-
	60-dia. head Large Turn-reset		1NC, 1NO (2)	A22NE-L-P102-N	
			2NC (2)	A22NE-L-P202-N	
	A22NE-L-P02-N		2NC, 1NO (3)	A22NE-L-P212-N	
			3NC (3)	A22NE-L-P222-N	
e numb	er in		er in parentheses () indicates the number of switch units.	2NC, 1NO (3) 3NC (3)	2NC, 1NO (3) A22NE-L-P212-N 3NC (3) A22NE-L-P222-N

Lighted Model

	Appearance	Operation	Degree of Protection		itact ration *	LED lamp voltage	Set Model	Color of cap
Com				1NC	C (1)		A22NE-M-P002-A	
		40-dia. head Medium Turn-reset A22NE-M-P		1NC, 1	NO (2)	6 VAC/VDC	A22NE-M-P102-A	
				2NC	2 (2)		A22NE-M-P202-A	
non			-	1NC	C (1)		A22NE-M-P002-B	
Acce		40-dia. head Medium Turn-reset A22NE-M-P□□2-B		1NC, 1	NO (2)	12 VAC/VDC	A22NE-M-P102-B	
SSO	(O) - S			2NC	2 (2)		A22NE-M-P202-B	
Common Accessories and Tools	40-dia. head Medium Turn-res A22NE-M-P_2:			1NC	1NC (1)		A22NE-M-P002-C	Red
		Medium Turn-reset	IP65	1NC, 1	NO (2)	24 VAC/VDC	A22NE-M-P102-C	
sloo				2NC	2 (2)		A22NE-M-P202-C	
	40-dia. head Medium Turn-reset A22NE-M-P_22-D			1NC	C (1)	100, 110, 120 VAC 220, 230, 240 VAC	A22NE-M-P002-D	
		Medium Turn-reset		1NC, 1	NO (2)		A22NE-M-P102-D	
C				2NC	2 (2)		A22NE-M-P202-D	
Õ				1NC	C (1)		A22NE-M-P002-E	
Common		40-dia. head Medium Turn-reset A22NE-M-P		1NC, 1	NO (2)		A22NE-M-P102-E	
	AZZINE-IM-F		2NC		2 (2)		A22NE-M-P202-E	
ň	* The number in parentheses () indicates the number of switch units.							
Ζ	Switch with Int	egrated Control Bo	X					
Note	Appearance	Contact configuration	(Number of swite	ch blocks)		Model	-	
Ö	9	1	NC (1)		A22NE	-M-P002-N-B	-	

Switch with Integrated Control Box

Appearance	Contact configuration (Number of switch blocks)	Model
	1NC (1)	A22NE-M-P002-N-B
5700 E	1NC, 1NO (2)	A22NE-M-P102-N-B
0.	2NC (2)	A22NE-M-P202-N-B

A22NE-PD

22 OMRON Downloaded from Arrow.com.

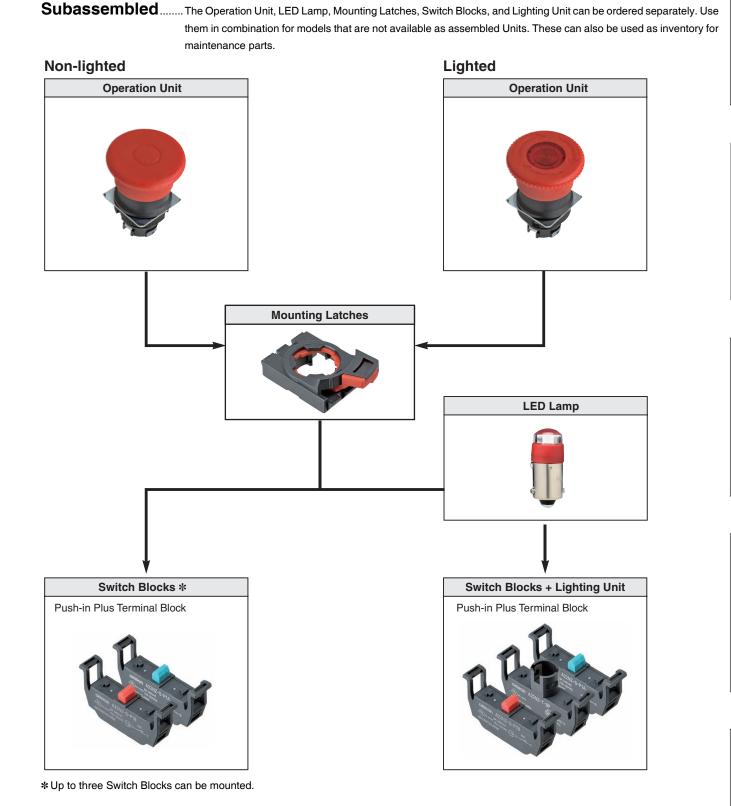
A22NE-PD

A22NE-P

A22E

Common Accessories and Tools

23



A22NE-PD	Operation Uni	it			
		Size	Small (30 dia.)	Medium (40 dia.)	Large (60-dia.)
4	Function	Sealing capability		Single item order model	
		IP65 oil-resistant models		A22NE-MP-N	
A22NE-P	Pull-reset	ІР69К		A22NE-MP-N-69K	
				A22NE-M-N	
A22E	Turn-reset	IP65 oil-resistant models	A22NE-S-N	A22NE-MRO-N A22NE-MRO-N-RD	A22NE-L-N
Common Acce				A22NE-MRS-N-RD	

cessories and Tools

Lighted		
	Size	Medium (40 dia.)
Function	Sealing capability	Single item order model
		A22NE-M-L
Turn-reset	IP65	

Common Note

LED lamp					
Appearance	LED light	Rated voltage	Model	Remarks	
	Red	6 VAC/VDC	A22NZ-L-RA		
			12 VAC/VDC	A22NZ-L-RB	 These LED lamps are for exclusive use with the A22N and the A22N
0		24 VAC/VDC	A22NZ-L-RC	 and the A22NE-P. These are provided with the completely 	
AU C		100, 110, 120 VAC	A22NZ-L-RD	 assembled set of lighted models. Order LED lamps only 	
	200, 220, 230, 240 VAC		A22NZ-L-RE	 when replacing them. 	

24 OMRON

Item	Appearance	Appearance Contact specifications		Model	Remarks
Switch Blocks	P. P.	1NO (Blue)	Standard load	A22NZ-S-P1A	Provided as standard. Order Switch Blocks only when
one contact)		1NC (Red)	Standard load	A22NZ-S-P1B	adding or replacing them.
	1	2NO (Blue)	Standard load	A22NZ-S-P2A	
Switch Blocks two contacts)		2NC (Red)	Standard load	A22NZ-S-P2B	Order Switch Blocks only when adding or replacing them.
		1NO/1NC (White)	Standard load	A22NZ-S-P2C	_
		6 VAC/VDC		A22NZ-T-AP	
	The	12 VAC/VDC		A22NZ-T-BP	These are provided with the completely assembled set of lighted models. Order Lighting Units only when replacing them.
ighting unit	annon king	24 VAC/VDC		A22NZ-T-CP	
	A CALL AND A	100, 110, 120	VAC	A22NZ-T-DP	
	2.0	200, 220, 230,	, 240 VAC	A22NZ-T-EP	
Mounting Latches				A22NZ-H-02	This Mounting Latch is for exclusive use with the A22NE-P. It is provided with the completely assembled set. Order Mounting Latches only
	9				when mounting Switch Blocks or Lighting Units that are purchased individually.
Control Boxes (Enclosures)		Oraha		A22NZ-A-B101Y	Can be combined with 2-contact Switch Blocks.
		Une ho	One hole, yellow box		Cannot be combined with 2-contact Switch Blocks. *

Accessories (Order Separately)

Note: For details on the accessories common to the screw terminal block types and push-in plus terminal block types, refer to "Common Accessories and Tools (Order Separately)" on page 51. * The A22NZ-A-B01Y Control Box cannot be used in combination with the A22Z-3476-1 90-dia. Legend Plates for Emergency Stop or the A22Z-

EG E-stop Shrouds.

A22NE-P

A22NE

Specifications

Certified Standard Ratings

- UL508 (File No. E76675), CSA C22.2 No.14 6 A at 240 VAC, 10 A at 120 VAC
- TÜV (EN60947-5-1) Certified direct opening -(EN60947-5-5)
 C 15 - 2.4 et 240 VAC

AC-15 3 A at 240 VAC DC-13 4 A at 24 VDC • CCC (GB/T14048.5)

AC-15 3 A at 240 VAC DC-13 4 A at 24 VDC

Applicable Standards

UL1059, UL486E (Push-in Plus Terminal Block Types)

Note: Use a 10 A fuse type gI or gG that conforms to IEC60269 as a short-circuit protection device. This fuse is not provided in the main unit.

Ratings Contacts (Standard Load)

	Rated	Rated carry	Rated	Rated current (A)			
	insulation voltage (V)	Isulation current (A)	voltage (V)	AC15 (Inductive load)	AC12 (Resistive load)	DC13 (Inductive load)	DC12 (Resistive load)
		600 10	24 VAC	10	10		
			120 VAC	6	10		
A22			240 VAC	3	6		
	600		380 VAC	1.9	2		
m	000		440 VAC	1.6	2		
			24 VDC			4	8
			120 VDC			1.1	2.2
			240 VDC			0.55	1.1

Note: 1. The above ratings were obtained by conducting tests under the following conditions.

(1) Ambient temperature: 20°±2°C

(2) Ambient humidity: 65±5%

(3) Operating frequency: 20 operations/minute

 Minimum applicable load: 10 mA at 5 VDC (Resistive load) The operating range may vary depending on the usage conditions and type of load.

Certified Standards

Certification Standards		File No.
UL *	UL508, C22.2 No.14	E76675
TÜV SÜD	EN60947-5-1 (Certified direct opening), EN60947-5-5	Consult your OMRON representative for details.
CQC (CCC)	GB/T14048.5	Consult your OMRON representative for details.

Note: Only models with NC contacts have a direct opening mechanism.

 $\star\,\text{UL-certification}$ for CSA C22.2 No. 14 has been obtained.

LED Lamp

Rated voltage	Operating voltage	Current value		
6 VAC/VDC	6 VAC/VDC ± 10%	Approx. 11 mA		
12 VAC/VDC	12 VAC/VDC ± 10%	Approx. 12 mA		
24 VAC/VDC	24 VAC/VDC ± 10%	Approx. 12 mA		
100 VAC	100 VAC ± 10%			
110 VAC	110 VAC ± 10%	Approx. 12 mA		
120 VAC	100 VAC to 130 VAC			
200 VAC	200 VAC ± 10%			
220 VAC	220 VAC ± 10%	Approx 10 mA		
230 VAC	230 VAC ± 10%	Approx. 12 mA		
240 VAC	220 VAC to 250 VAC	1		
	1	1		

Pull-reset

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31.9	Note

Characteristics

Operation

operation							
				•	ted model		
Item		A22NEPN	A22NE-M-P	A22NE-MP-P	A22NE-MP-P		
Allowable operating	Mechanical	30 operations/minute or less (One operation consists of set and reset operations.)					
frequency	Electrical	30 operations/minute or less (One operation consists of set and reset operations.)					
Insulation resistar	nce *1	100 MΩ min. (at 500 VDC)					
Contact resistant	ce	100 m Ω max. (initial value)					
Dielectric Between terminals of same polarity*1		2,500 VAC, 50/60 Hz 1 m	inute (initial value)				
strength	Between each terminal and ground	2,500 VAC, 50/60 Hz 1 minute (initial value)					
Vibration resistance	Malfunction	10 to 55 Hz, 1.5 mm doub	le amplitude (contact	separation within 1 ms)			
Shock resistance	Malfunction	250 m/s ² max. (contact separation within 1 ms)					
	Mechanical	300,000 operations min. (operations.)	100,000 operations min. (One operation consists of set and reset operations.)				
Durability	Electrical	300,000 operations min. (operations.)	100,000 operations min. (One operation consists of set and reset operations.)				
Ambient operating	temperature *2	-20 to +70°C	-20 to +55°C	-20 to +70°C	-20 to +70°C *3		
Ambient operatin	ig humidity	35 to 85% RH					
Ambient storage te	emperature *2	-40 to +70°C					
Degree of protect	tion *4	IP65 oil-resistant models *5	IP65	IP65 oil-resistant models *5	IP69K		
Electric shock pro	tection class	Class II					
PTI (tracking characteristic)		175					
Degree of contan	nination	3 (EN 60947-5-1)					
Minimum direct o	pening stroke	11 mm					
Minimum direct opening force		45 N					
Conditional short-circuit current		100 A (EN 60947-5-1)					
Wight (for a 40-di 1NC/1NO Operati		Approx. 55g	Approx. 60g	Approx. 85 g	Approx. 115 g		

Turn-reset

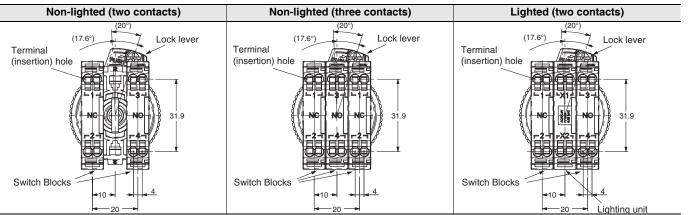
*1. State when an LED is not added between terminals of the same polarity on a lighting unit. Does not apply to lighted-type 100 to 200 V lighting units.
*2. With no icing or condensation.
*3. Capable of operation at up to 80°C under IP 9K testing conditions per JIS D 5020.
*4. The degree of protection from the front of the panel.
*5. The degree of protection is IP65 even with an integrated control box, but the system is not oil resistant.

Operating Characteristics

Item	Turn-reset	Pull-reset		
nem	Lighted / non-lighted models	Non-lighted model	Non-lighted model (Models with IP69K)	
Total travel force (TTF)	45 N max.	60 N max.	70 N max.	
Return force (RF)	0.25N·m * max.	60 N max.	70 N max.	
Total travel (TT)	10 ±1 mm	5.5 ±1 mm	5.5 ±1 mm	

* Rotation torque value.

Terminal Arrangement (BOTTOM VIEW)



т. onnoction

A22NE-PD

A22NE-P

Turne	Terminal Connection (BOTTOM VIEW)					
Туре	1NC, 1NO (two contacts)	2NC (two contacts)	2NC, 1NO (three contacts)	3NC (three contacts)		
Non-lighted	NC NO (1) (3) (2) (4)	NC NC 1 1 2 2 2	NC NC NO (1) (1) (3) (2) (2) (4)	NC NC NC (1) (1) (1) (2) (2) (2)		
Lighted						

Note: The above terminal connection diagrams are examples for 1NO, 1NC (two contacts), or 2NC (two contacts).

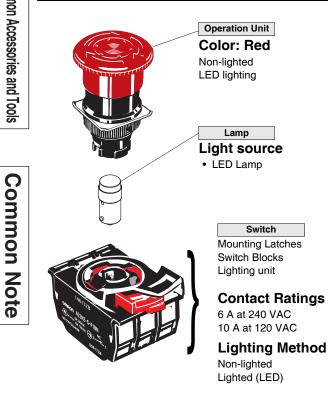
Terminal wiring drawings of two-contact Switch Units



Common Accessories and Tools

	Turne	Terminal Connection (BOTTOM VIEW)		
	Туре	2NC (two contacts)	1NC, 1NO (two contacts)	
A B	A	(21)	(21) (22)	
	В	(11)		

Structure and Nomenclature



(Unit: mm)

42.5

42.5

5.9

39

1.8

<u>5.9</u> 39.5

(0.5)

Note: The dimensions the same even if the Operation Unit is replaced with the A22NE-MR -N or the A22NE-MR -N-RD.

•1.8

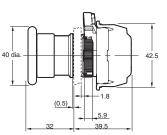
Dimensions

Non-lighted Models

A22NE-MP-PD2-N

Pull-reset (40-dia.) Degree of Protection: IP65 oil-resistant models





A22NE-MP-PD2-N-69K

A22NE-M-PD2-N

IP65 oil-resistant models

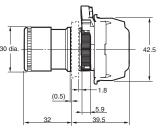
Pull-reset (40-dia.) Degree of Protection: IP69K

Medium Turn-reset (40-dia.) Degree of Protection:

A22NE-S-PD2-N

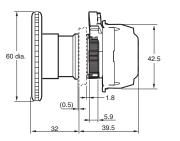
Small Turn-reset (30-dia.) Degree of Protection: IP65 oil-resistant models





A22NE-L-P 2-N Large Turn-reset (60-dia.) Degree of Protection: IP65 oil-resistant models



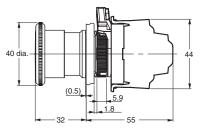


Lighted Model

A22NE-M-PDD2-D Medium Turn-reset (40-dia.) Degree of Protection: IP65

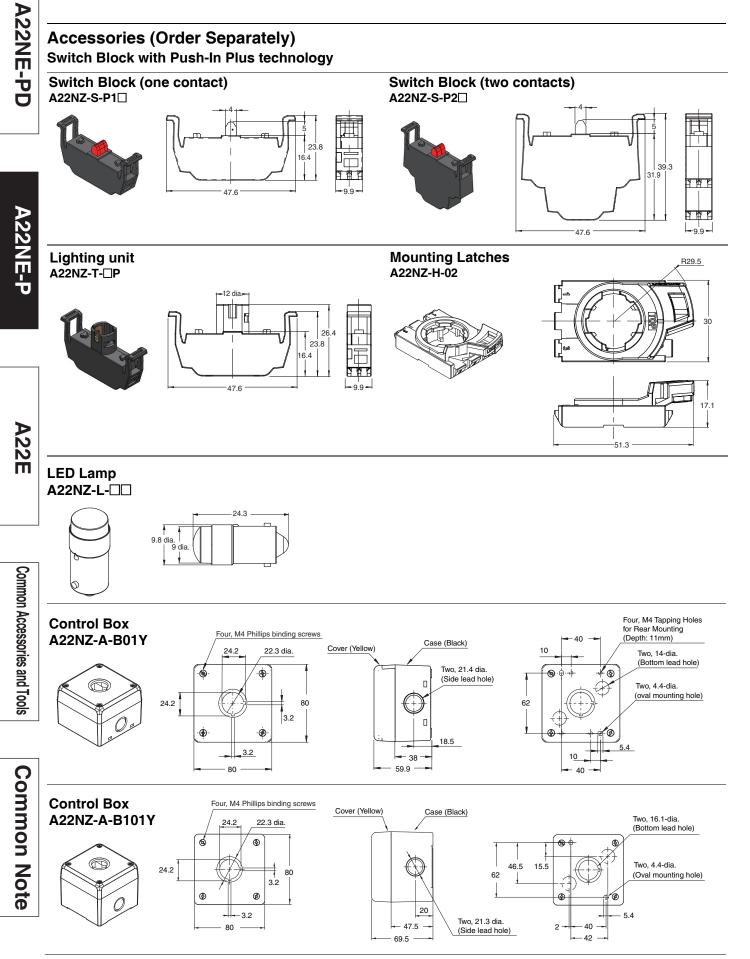
Note: Unless otherwise specified, a tolerance of ±0.8 mm applies to all dimensions.

Dimensions when a two-contact Switch Block is attached



A22NE-PD





Note: For details on the accessories common to the screw terminal block types and push-in plus terminal block types, refer to "Common Accessories and Tools (Order Separately)" on page 51.

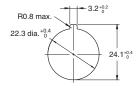
30 OMRON

Mounting to the Panel

(1) Prepar	ing the Panel	
 Panel hole dimension and panel thi If outer surface treatment such as co dimensions after outer surface treatment dimensions. 	ating is performed for the panel, the panel	 Do not pointed Doing (The ti Tighted
Panel hole dimension	Panel thickness	 Panel H Insert
22 3 dia	1 to 5 mm	• Insen



When using a A22Z-3360 (Order Separately) Lock Ring



For 25-dia.

- Use the A22Z-R25 (Order Separately) rubber ring.
- * Switches with an IP69K degree of protection do not support the 25dia.



(2) Minimum mounting pitch (Dimension A, Dimension B) Minimum mounting pitch

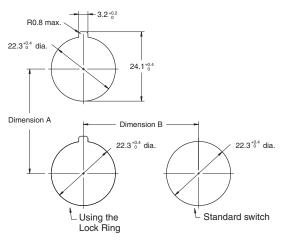
Type of operation unit	Dimension A (mm) min.	Dimension B (mm) min.
30-dia., 40-dia. models	50 *1	50
60-dia. model	70	70

*1. If the Mounting Collar lock levers all face the same direction at the minimum mounting pitch, be sure to note the order the mounting collars are attached to the Operation Unit.

*2. When using each accessory (Order Separately), set the A and B dimensions in view of the dimensions of the accessories.

*3. Make sure the mounting pitch does not hinder the operation.

Panel Hole Dimensions for 22.3 Diameter



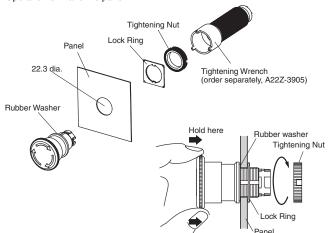
(3) Mounting the Operation Unit on the Panel

- ot tighten the Tightening Nut more than necessary using tools such as ed-nose pliers.

- g so will damage the Tightening Nut. tightening torque of the Tightening Nut is 1.0 to 2.0 N·m.) ening Wrench: A22Z-3905

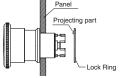
Hole of 22.3-mm Diameter

the Operation Unit from the front of the panel, insert the Lock Ring and Tightening Nut from the back of the panel, and tighten the Tightening Nut. Before tightening, check that the rubber washer is present between the Operation Unit and the panel.



When the A22Z-3360 Lock Ring (Order Separately) is used

• Take note of the direction when mounting the Lock Ring.



Panel Hole of 25-mm Diameter

 Insert the A22Z-R25 (Order Separately) between the Operation Unit and Panel, and tighten the Tightening Nut. Before tightening, check that the rubber washer supplied with the Operation Unit is present between the Operation Unit and the 25-dia. Ring. Operation Unit

-22 dia

24.8 dia.

27 dia.

ł

t

t

Panel Cutouts

25 mm dia.

30 mm dia.

Rubber washer

Panel

Lock Ring

Tightening Nut

Panel thickness

1 to 5 mm

1 to 3 mm

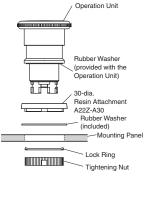
ovided with the Operation Unit)

Panel Hole of 30-mm Diameter

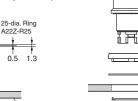
 Insert the A22Z-A30 (Order Separately) between the Operation Unit and Panel, and tighten the Tightening Nut.

Before tightening, check that the supplied rubber washer is present between the Operation Unit and the panel, and between the 30-dia. Resin Attachment and the panel.

* Switches with an IP69K degree of protection do not support the 30-dia.



Common Accessories and Tools



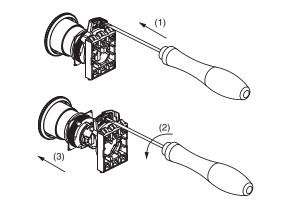
ASSNE-P

A22E

Removing the Mounting Latch

When the Mounting Latch is to be Removed

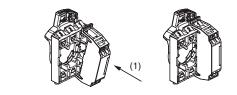
• Press the lock lever in from the back side to release the lock, and then hook the Mounting Collar with a screwdriver, move it in the direction indicated at (2), and remove it. Turn the lever all of the way until it clicks into place.



Switch Blocks and Lighting Unit

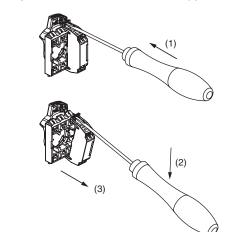
(1) Installing the Switch Blocks and Lighting Unit

• Catch the projection on the opposite side of the Mounting Collar from the lever side and press the Switch Block in the direction indicated at (1).



(2) Removing the Switch Blocks and Lighting Units

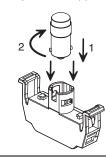
• Insert a screwdriver into the gap between the Mounting Collar and Switch Block and press it inward in the direction shown at (2).



Attaching the LED Lamp to the Lighting Unit

When the LED Lamp is to be Installed

• Insert the protrusions on the LED Lamp into the guides on the Lighting Unit and then turn the LED Lamp in direction (2) to lock it in place.



Control Box

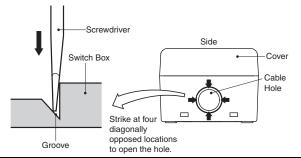
(1) Mounting the Switch

Mount the Switch in the same way as for a standard panel. The tightening torque of the Box screws is 1.4 to 2.0 N·m.



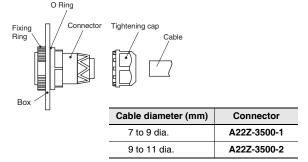
(2) Creating a Cable Hole

To open a cable hole, leave the cover attached, place the tip of a screwdriver in the grooves at four locations around the cable hole, and strike the screwdriver with a hammer to open the hole.



(3) Securing the Connector Cable

- 1. Insert the connector into the cable port hole in the Box and secure with the fixing ring inside the box.
- 2. Pass the tightening cap through the cable, insert the cable into the connector, and tighten the tightening cap to secure the cable.



A22E

Common Accessories and Tools

Common Note

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Safety Precautions

Be sure to read the precautions for All PushButton Switches in the website at: http://www.ia.omron.com/.

Indication and Meaning for Safe Use

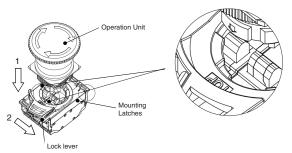
Warning	Indicates a potentially hazardous situation that, if not avoided, could result in serious injury or death. Additionally there may be significant property damage.
Precautions for Safe Use	Comments on what to do or avoid doing, to use the product safely.
Precautions for Correct Use	Supplementary comments on what to do or avoid doing to use the product safely and prevent its malfunctioning or an adverse effect on its performance or functions.

Do not perform wiring with power supplied to the Switch/ Indicator. Do not touch the terminals or other charged parts while power is being supplied. Doing so may result in electric shock.

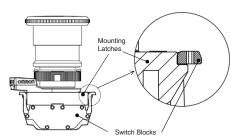
Precautions for Safe Use

• If the Operation Unit is separated from the Switch Units, the equipment will not stop, resulting in a hazardous situation. Make sure the Operation Unit, Mounting Latches, and the Switch Units are properly assembled.

<Assembling the Operation Unit and the Mounting Latches> Align the TOP indication (the $\sqrt{3}$ mark) on the Operation Unit with the TOP indication on the Mounting Latches to fit it properly, and turn the lock lever on the Mounting Latch in the direction shown in the figure below until a clicking sound is heard.



<Assembling the Mounting Latches and Switch Blocks> Make sure the hooking part (convex part) on the Mounting Latches is perfectly latched into the hooking part (concave part) on the Switch Block.



• When transition wiring is performed, make sure the switching current inside the Switch and the current based on the transition wiring is below the rated current of the Switch.

If a current value higher than the rated current flows, it could result in emission of heat, or damage and deformation of the Switch, which could cause fire and locking of the contact, and thus a loss of safety.

• Do not disassemble or modify the Switch/Indicator under any circumstances.

- Doing so may prevent the Switch/Indicator from functioning to its full capability. Do not drop the Switch/Indicator. Do not apply pressure that may deform or alter the Switch/Indicator.
- The durability of the Switch varies considerably depending on the switching conditions. Always test the Switch/Indicator under actual working conditions before application and use the Switch/Indicator only for the number of switching operations allowed.
- Do not allow the load voltage and current to exceed the rated value. This may damage or burn out the Switch/Indicator.
- Do not use the Switch/Indicator in locations where explosive or flammable gases or liquid may be present or scattered. The electric ark or the heat caused by switching contacts may cause a fire or explosion.
- Do not use the Switch/Indicator in locations where toxic gases, such as H₂S, SO₂, NH₃, HNO₃, and Cl₂, may be present, or in locations subject to high temperature or humidity. Doing so may damage the Switch/Indicator due to contact failure or corrosion.
- Do not use the Switch/Indicator submersed in oil or water, or in locations continuously subject to splashes of oil or water. Doing so may result in oil or water entering and damaging the Switch/ Indicator.
- Do not use or keep the Switch/Indicator under the following conditions:
 - Subject to severe temperature changes.
 - Subject to high humidity or condensation.
 - Subject to severe vibration or shock.
 - Where direct rays of the sun strike.
 - Where sea breeze may be present.
- Make sure that a rubber washer is present between the Operation Unit and the panel. In models with IP69K, make sure the rubber bush of the Operation Unit is properly attached.

Otherwise, the specifications of the protective structure may not be satisfied.

- Do not apply excessive force to the Switch or wirings. Damage or deformation of the Switch Block could cause an improper contact or a loss of safety.
- Use an appropriate wiring and crimp terminals (hereinafter, called ferrule terminals).
- Exercise caution to avoid wiring errors when connecting the terminals.
- To prevent wiring materials from smoking or ignition, confirm wire ratings and use the wiring materials given in the following table.

Wire Type	Wire Recommended material Wire		Wire coating peeling amount	
Solid wire/ Stranded Wire	Copper	0.25 to 1.5 mm ² AWG 24 to 16	Ferrules used: 10 to 12 mm (Varies depending on the recommended ferrule conductor length) Ferrules not used: 8 mm	

Use wiring crimp terminals and ferrule terminals of the specified size.

- After storing the product for a long time exceeding 1 year, perform, at a minimum, inspections of the operating characteristics, contact resistance, insulation resistance, and dielectric strength as well as evaluate the product under the working conditions.
- This Switch/Indicator is intended for indoor use only. Using the Switch/Indicator outdoors may result in failure.
- Do not wire anything to the release holes.
- Do not tilt or twist a flat-blade screwdriver while it is inserted into a release hole on the terminal block. The terminal block may be damaged.
- Insert a flat-blade screwdriver into the release holes at an angle. The terminal block may be damaged if you insert the screwdriver straight in.
- Do not allow the flat-blade screwdriver to fall out while it is inserted into a release hole.
- Do not bend a wire past its natural bending radius or pull on it with excessive force.

Doing so may cause the wire disconnection.

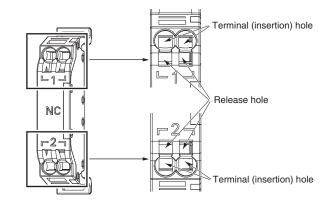
A22NE-PD

- A22NE-PD
- Do not insert more than one wire into each terminal insertion hole.
 Do not mount A22N-P or A22NE-P Push-In Plus terminal switch
- blocks on A22N screw terminal blocks. Doing so may result in unsatisfactory performance.
- When mounting on a device with high airtightness, test operation in advance. There is a risk that the negative pressure will prevent the Operation Unit of from returning.
- In the case of loads where an inrush current occurs when the contact is opened or closed, the durability may reduce due to extreme wear on the contacts.
- If necessary, insert a contact protection circuit.

Precautions for Correct Use

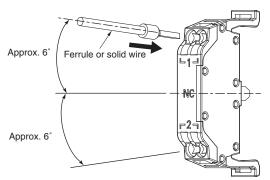
Wiring

1. Connecting Wires to the Push-In Plus Terminal Block Part Names of the Terminal Block



Connecting Wires with Ferrules and Solid Wires

- Insert the solid wire or ferrule straight into the terminal block until the end strikes the terminal block. The angle should be approximately 6°.
- If a wire is difficult to connect because it is too thin, use a flat-blade screwdriver in the same way as when connecting stranded wires.

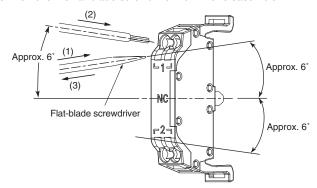


The wiring for the Lighting Unit and Switch Block (2 contacts) are the same as for the Switch Block (1 contact) shown in the above illustration.

Connecting Stranded Wires

Use the following procedure to connect the wires to the terminal block.

- Hold a flat-blade screwdriver at an angle and insert it into the release hole. The angle should be approximately 6°. If the flat-blade screwdriver
- is inserted correctly, you will feel the spring in the release hole.With the flat-blade screwdriver still inserted into the release hole, insert the wire into the terminal hole until the end strikes the terminal block.
- 3. Remove the flat-blade screwdriver from the release hole.



The wiring and screwdriver angles for the Lighting Unit and Switch Block (2 contacts) are the same as for the Switch Block (1 contact) shown in the above illustration.

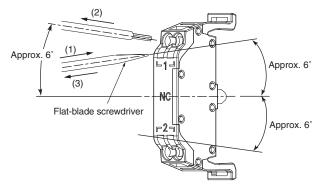
Checking Connections

- After the insertion, pull gently on the wire to make sure that it will not come off and it is securely fastened to the terminal block.
- If you use a ferrule with a conductor length of 10 mm, part of the conductor may be visible after the ferrule is inserted into the terminal block, but the product insulation distance will still be satisfied.

2. Removing Wires from the Push-In Plus Terminal Block

Use the following procedure to remove wires from the terminal block. The same method is used to remove stranded wires, solid wires, and ferrules.

- 1. Hold a flat-blade screwdriver at an angle and insert it into the release hole. The angle should be approximately 6°.
- 2. With the flat-blade screwdriver still inserted into the release hole, remove the wire from the terminal insertion hole.
- 3. Remove the flat-blade screwdriver from the release hole.



The wiring and screwdriver angles for the Lighting Unit and Switch Block (2 contacts) are the same as for the Switch Block (1 contact) shown in the above illustration.

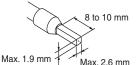
3. Recommended Ferrules and Crimp Tools Coating peeling amount

Recommend Wire Type	Stripping length (Ferrules not used)	
0.25 to 1.5 mm ² /AWG 24 to AWG 16	8 mm	

Recommended ferrules

Applicable wire		Ferrule Stripping	Recommended ferrules			
(mm²)	(AWG)	conductor length (mm)	length (mm) (Ferrules not used)	Phoenix Contact product	Weidmuller product	Wago product
0.25	24	8	10	AI 0, 25-8	H0.25/12	216-301
0.25	24	10	12	AI 0, 25-10		
0.34	22	8	10	AI 0, 34-8	H0.34/12	216-302
0.34		10	12	AI 0, 34-10		
0.5	.5 20	8	10	AI 0, 5-8	H0.5/14	216-201
0.5		0.5 20	10	12	AI 0, 5-10	H0.5/16
0.75	18	8	10	AI 0, 75-8	H0.75/14	216-202
0.75		10	12	AI 0, 75-10	H0.75/16	216-242
1/1.25	18/17	8	10	AI 1-8	H1.0/14	216-203
1/1.20		10	12	AI 1-10	H1.0/16	216-243
1.05/1.5	1.25/1.5 17/16	8	10	Al 1, 5-8	H1.5/14	216-204
1.20/1.0		10	12	Al 1, 5-10	H1.5/16	216-244
Recom	Recommended Crimp Tools		CRIMPFOX6 CRIMPFOX6T-F CRIMPFOX10S	PZ6 roto	Variocri mp4	

- **Note: 1.** Make sure that the outer diameter of the wire coating is smaller than the inner diameter of the insulation sleeve of the recommended ferrule.
 - **2.** Make sure that the ferrule processing dimensions conform to the following figures.

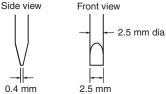


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Recommended Flat-Blade Screwdrivers

Use a flat-blade screwdriver to connect and remove wires. Use one of the following flat-blade screwdrivers. The following table shows manufacturers and models as of 2015/Dec.

ne following table shows manufacturers and models as of 2015/Dec



Model	Manufacture
ESD 0,40 × 2,5	Wera
SZS 0,4 × 2,5 SZF 0-0,4 × 2,5 *	Phoenix Contact
0.4 × 2.5 × 75 302	Wiha
AEF.2,5 × 75	Facom
210-719	Wago
SDI 0,4 × 2,5 × 75	Weidmuller

* The SZF 0-0,4 × 2,5 (manufactured by Phoenix Contact) can be procured through an OMRON exclusive purchase form (XW4Z-00B).

• After wiring the Switch/Indicator, provide a sufficient insulation distance.

LED Lamps

- A current-limiting resistor is built in the LED lamp, so the installation of an external resistance is not required.
- Lighting malfunction of the LED lamp
 A micro-current of approximately 0.1 mA or less is sufficient to turn
 on the LED lamps. Take a countermeasure like adding a resistor
 to prevent mis-lighting in parallel to the LED lamp.
 The micro-current varies with the machine (leak current or stray
 capacity between cables, etc.). Select resistance value and
 allowable power consumption that meet the actual current.

(Example of lighting malfunction prevention circuit) When using a 24-VAC/VDC lighted unit



LED (X1) R:10 k Ω (1 W) Bleeder resistor

Be sure to read the "Safety Precautions" on page 56.

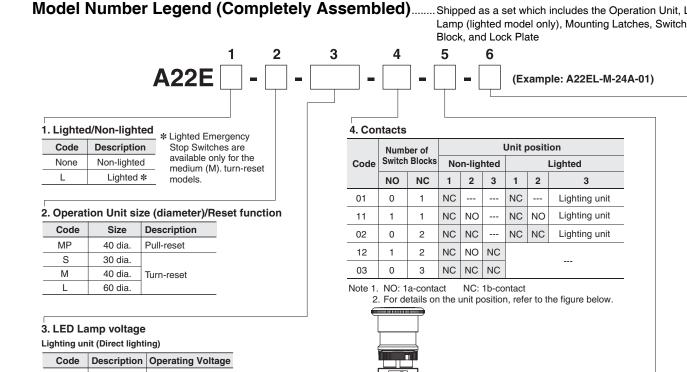


Emergency Stop Pushbutton Switches (22-dia. or 25-dia.) Screw Terminal Block types

A22NE-PD



For the most recent information on models that have been certified for safety standards, refer to your OMRON website.



Install in 22-dia. or 25-dia. Panel Cutout

• Increase wiring efficiency with three-row mounting of Switch Units. (with non-lighted Switch Blocks, three Units can be mounted

• Mounted using either open-type (fork-type) or closed-type

control box and switch are not easily separated.

Be sure to read the "Safety Precautions" on pages 50 and 56.

• Oil-resistant to IP65 (non-lighted models) / IP65 (lighted models).

• A lock plate is provided as a standard feature to ensure that the

(When Using a Ring)

for multiple contacts).

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(round-type) crimp terminals.

Model Number Structure



Lighting unit (Voltage-reduction lighting)						

Code	Description	Operating Voltage			
T1	Lighted	100 VAC			
T2	(LED) *	200 VAC			
* Equipped with 24-VAC/DC LED					

* Equipped with 24-VAC/DC LED.

Shipped as a set which includes the Operation Unit, LED

Lighted

3

Lighting unit

Lighting unit

Lighting unit

5 Configuration

5. Configuration				
Configuration				
Switch only				
Switch with Integrated Control Box				

6. Configuration

	g			
Code	Configuration			
None	Neither "EMO" nor "EMS" printed, arrows engraved in red.			
EMO	"EMO" and arrows printed in white.			
EMO-RD	"EMO" printed in white, arrows engraved in red.			
EMS	"EMS" and arrows printed in white.			
EMS-RD	"EMS" printed in white, arrows engraved in red.			

CE c us listed 🗰

Ordering Information

List of Models (Completely Assembled)

Non-lighted Models (Without EMO/EMS Indication)

Appearance	Operation	Degree of Protection	Contact configuration * 1	Set Mo	del	Color of cap
	40-dia. head		1NC (1)	A22E-MP-01		
	Medium Pull-reset		1NC, 1NO (2)	A22E-MP-11		
	A22E-MP		2NC (2)	A22E-MP-02		
30-dia. head		-	1NC (1)	A22E-S-01	* 2	
		1NC, 1NO (2)	A22E-S-11	* 2		
	Small Turn-reset		2NC (2)	A22E-S-02	*2	
A22E-S		2NC, 1NO (3)	A22E-S-12	*2		
		IP65 oil-resistant	3NC (3)	A22E-S-03	*2	Red
		models	1NC (1)	A22E-M-01	*2	neu
	40-dia. head		1NC, 1NO (2)	A22E-M-11	*2	
	Medium Turn-reset		2NC (2)	A22E-M-02	* 2	
	A22E-M		2NC, 1NO (3)	A22E-M-12	*2	
			3NC (3)	A22E-M-03	* 2	
	60-dia. head		1NC (1)	A22E-L-01	*2	
	Large Turn-reset		1NC, 1NO (2)	A22E-L-11	* 2	
	A22E-L		2NC (2)	A22E-L-02	*2	

*1. The number in parentheses () indicates the number of switch units.

*2. Models with Korean S-mark certification Note: Yellow cap models are also available (not for emergency stop use). Contact your OMRON representative.

Non-lighted Models (With EMO/EMS Indication)

22E	Appearance	Operation	Degree of Protection	Contact configuration * 1	Set Model	Color of cap
				1NC (1)	A22E-M-01-EMO *2	
					A22E-M-01-EMO-RD	
				1NC, 1NO (2)	A22E-M-11-EMO *2	
				1100, 1100 (2)	A22E-M-11-EMO-RD	
		40-dia. head Medium Turn-reset		2NC (2)	A22E-M-02-EMO *2	
3	GLAD L	With EMO Indication		2100 (2)	A22E-M-02-EMO-RD	
Common According and Toolo	EMOT -			2NC, 1NO (3)	A22E-M-12-EMO *2	
				2100, 1100 (0)	A22E-M-12-EMO-RD	
		IP6:		3NC (3)	A22E-M-03-EMO *2	
			IP65 oil-resistant models	SNC (3)	A22E-M-03-EMO-RD	Red
-		40-dia. head Medium Turn-reset With EMS Indication		1NC (1)	A22E-M-01-EMS *2	neu
					A22E-M-01-EMS-RD	
				1NC, 1NO (2)	A22E-M-11-EMS *2	
-	<u>a</u>				A22E-M-11-EMS-RD	
				2NC (2) 2NC, 1NO (3)	A22E-M-02-EMS *2	
	EMS DU				A22E-M-02-EMS-RD	
					A22E-M-12-EMS *2	
)					A22E-M-12-EMS-RD	
1				3NC (3)	A22E-M-03-EMS *2	
Common					A22E-M-03-EMS-RD	

AZZNE-P

A22NE-P

ighted Mod	Operation	Degree of Protection	Contact configuration * 1	LED Lamp voltage	Set Model	Color of cap
				6 VAC/VDC	A22EL-M-6A-01 *2	
			1NC (1)	12 VAC/VDC	A22EL-M-12A-01 *2	_
~	10 d'a la sal			24 VAC/VDC	A22EL-M-24A-01 *2	Red
	40-dia. head Push-lock Turn-reset		1NC, 1NO (2)	6 VAC/VDC	A22EL-M-6A-11 *2	
	Lighting unit (Direct lighting) A22E	IP65		12 VAC/VDC	A22EL-M-12A-11 *2	
				24 VAC/VDC	A22EL-M-24A-11 *2	
			P65 2NC (2)	6 VAC/VDC	A22EL-M-6A-02 *2	
				12 VAC/VDC	A22EL-M-12A-02 *2	
				24 VAC/VDC	A22EL-M-24A-02 *2	_
				100 VAC	A22EL-M-T1-01	_
	40-dia. head		1NC (1)	200 VAC	A22EL-M-T2-01	_
	Push-lock Turn-reset		1NC, 1NO (2)	100 VAC	A22EL-M-T1-11	_
	Lighting unit (Voltage-reduction lighting)			200 VAC	A22EL-M-T2-11	_
	A22E		2NIC (2)	100 VAC	A22EL-M-T1-02	
			2NC (2)	200 VAC	A22EL-M-T2-02	-

***1.** The number in parentheses () indicates the number of switch units.

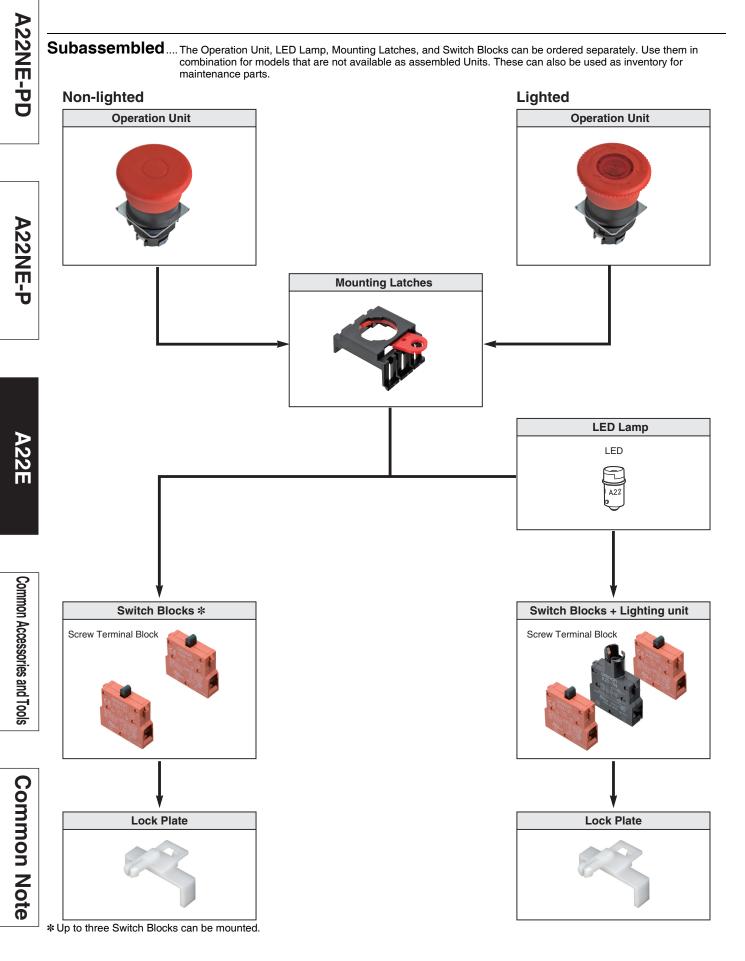
*2. Models with Korean S-mark certification

Switch with Integrated Control Box

Appearance	Contact configuration (Number of switch blocks)	Model
	1NC (1)	A22E-M-01B *
	1NC, 1NO (2)	A22E-M-11B *
	2NC (2)	A22E-M-02B *

Note: The A22Z-B101Y Control Box is used. * Models with Korean S-mark certification





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Operation U Non-lighted	nit				A22NE-PD
	Size	Small (30 dia.)	Medium (40 dia.)	Large (60 dia.)	- <u> </u>
Function	Sealing capability		Single item order model		ם ד
Pull-reset			A22E-MP		
	IP65 oil-resistant models	A22E-S	A22E-M A22E-M A22E-M-EMO A22E-M-EMO-RD	A22E-L	A22NE-P
Turn-reset			EMOL		
			A22E-M-EMS A22E-M-EMS-RD		A22E

Lighted

	Size	Medium (40 dia.)
Function	Sealing capability	Single item order model
		A22EL-M
Turn-reset	IP65	

LED lamp

Appearance	LED light		Rated voltage	Model
A22 a			6 VAC/VDC	A22-6AR
	Red	Standard	12 VAC/VDC	A22-12AR
			24 VAC/VDC	A22-24AR

Note: For a model with a Lighting unit (Voltage-reduction lighting), use the A22-24AR.

Common Accessories and Tools

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5				
22NE-PD	Switch Non-lighted / Dir	ect lighting		
<u> </u>		Classification	Non-lighted	Direct lighting
Ö		Appearance		
A22NE	Contact specificat Configuration (Nu	tions/ Imber of switch blocks)	Model	Model
N		1NC (1)	A22-01M	A22L-01M
Z	For Standard loads	1NC, 1NO (2)	A22-11M	A22L-11M
Å		2NC (2)	A22-02M	A22L-02M
υ	Voltage-reductio	on lighting (100 VAC,	200 VAC)	
		Classification	100 VAC, Lighted	200 VAC, Lighted
A22E		Appearance		
2E	Contact specificat Configuration (Nu	mber of switch blocks)	Model	Model
	For Standard	1NC (1)	A22L-01M-T1	A22L-01M-T2
	loads	1NC, 1NO (2)	A22L-11M-T1	A22L-11M-T2

A22L-02M-T2

	2	NC (2)	A2:	2L-02M-T1			

Note: For a model with a Lighting unit (Voltage-reduction lighting), use the A22-24AR.

Common Accessories and Tools

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A22NE-PD

A22NE-P

Item	Appearance	Contact spec	cifications	Model	Remarks	
		1NO (Black)	Standard load	A22-10		
Switch Blocks		TNO (Black)	Microload	A22-10S	Provided as standard.	
(one contact)			Standard load	A22-01	 Order Switch Blocks only when adding or replacing them. 	
		1NC (Red)	Microload	A22-01S		
			Standard load	A22-20		
		2NO (Black)	Microload	A22-20S		
Switch Blocks			Standard load	A22-02	Order Switch Blocks only when	
(two contacts)		2NC (Red)	Microload	A22-02S	adding or replacing them.	
		1NC + 1NO Contact (Black/ Red)	Standard load	A22-11	_	
			Microload	A22-11S		
		Direct lighting		A22-TN		
Lighting unit		Voltage-reduction lighting	100 VAC	A22-T1	Used when changing the lighting method.	
			200 VAC	A22-T2		
Mounting Latches				A22-3200	Provided as standard. Order Mounting Latches only when mounting Switch Blocks or Lighting Units that are purchased individually.	
Lock Plate				A22Z-3380	Use to fix the lever on the Switch.	
Control Boxes			ellow box		Material: Polycarbonate resin. When using a Control Box, 2NO,	
(Enclosures)		One hole, yellow box		A22Z-B201Y	2NC, or 1NC + 1NO two-contact Switch Blocks are not supported	

Note: For details on the accessories common to the screw terminal block types and push-in plus terminal block types, refer to "Common

Accessories and Tools (Order Separately)" on page 51. * The A22NZ-B101Y and A22NZ-B201Y Control Box cannot be used in combination with the A22Z-3476-1 90-dia. Legend Plates for Emergency Stop or the A22Z-EG E-stop Shrouds.

A22E

Specifications

Certified Standard Ratings

- UL, cUL (File No. E41515)
- 6 A at 220 VAC, 10 A at 110 VAC • TÜV (EN60947-5-1) (Low Voltage Directive)
- 3 A at 220 VAC
- CCC (GB14048.5)

A22NE-I

U

Ratings

Contacts (Standard Load)

Rated carry	Rated		Rated cu	irrent (A)	
current (A)	voltage (V)			DC13 (Inductive load)	DC12 (Resistive load)
	24 VAC	10	10		
	110 VAC	5	10		
	220 VAC	3	6		
	380 VAC	2	3		
10	440 VAC	1	2		
	24 VDC			1.5	10
	110 VDC			0.5	2
	220 VDC			0.2	0.6
	380 VDC			0.1	0.2
Note: 1. Rat	ed current v	alues are o	determined	according	to the

testing conditions. The above ratings were obtained by conducting tests under the following conditions.
 (1) Ambient temperature: 20°±2°C

(2) Ambient humidity: 65±5%

(3) Operating frequency: 20 operations/minute

2. Minimum applicable load: 10 mA at 5 VDC

Characteristics

Certified Standards

Certification body	Standards	File No.
UL *1	UL508, C22.2 No.14	E41515
TÜV SÜD	EN60947-5-1 (Certified direct opening), EN60947-5-5	Consult your OMRON representative for details.
CQC (CCC)	GB/T14048.5	2003010303070635
KOSHA *2	EN60947-5-1	Consult your OMRON representative for details.

Note: 1. Only models with NC contacts have a direct opening mechanism.

2. A fuse is not provided.

*1. UL-certification for CSA C22.2 No. 14 has been obtained. Certification has been obtained for individual Switch Blocks and Lighting Units.

*2. Some models have been certified.

Contacts (Microload)

Rated applicable load	100 mA at 30 VDC (Resistive load)
Minimum applicable load	1 mA at 5 VDC

LED Lamp

Rated voltage	Operating voltage	Current value
6 VAC/VDC	6 VAC/VDC ± 5%	
12 VAC/VDC	12 VAC/VDC ± 5%	Approx. 8 mA
24 VAC/VDC	24 VAC/VDC ± 5%	

Voltage-reduction lighting

Rated voltage	Operating voltage	Rated current	Applicable lamp (BA9S/Base: 13)
110 VAC	100 VAC (95 to 115 V)	Approx. 8 mA	LED lamp
220 VAC	200 VAC (190 to 230 V)	Applox. 8 IIIA	A22-24A

	Туре	Turn	-reset	Pull-reset		
Item		Non-lighted model	Lighted model	Non-lighted model		
Allowable operating	Mechanical	30 operations/minute (One operation consists of set and reset operations.)				
frequency	Electrical	30 operations/minute (One of	operation consists of set and	d reset operations.)		
Insulation resistance		100 MΩ min. (at 500 VDC)				
Contact resistance		100 m Ω max. (initial value)				
Dielectric strength		2,500 VAC, 50/60 Hz for 1 min	•			
		2,500 VAC, 50/60 Hz for 1 min	•			
Vibration resistance		10 to 55 Hz, 1.5-mm double an	nplitude (contact separation	n within 1 ms)		
Shock resistance	Destruction	1000 m/s ²				
Shock resistance	Malfunction	250 m/s ² max. (contact separation within 1 ms)				
Durability Mechanical		300,000 operations min. (One operation consists of set and reset operations.)				
Durability	Electrical	300,000 operations min. (One operation consists of set and reset operations.)				
Ambient operating tem	perature *1	-20 to +70°C	-20 to +55°C	-20 to +70°C		
Ambient operating hun	nidity	35 to 85% RH				
Ambient storage tempe	erature	-40 to +70°C				
Degree of protection		IP65 oil-resistant models *2 *3	IP65 *2	IP65 oil-resistant models *2 *		
Electric shock protection	on class	Class II				
PTI (tracking character	istic)	175				
Degree of contamination	on	3 (EN60947-5-1)				
Minimum direct openin	g stroke	11 mm				
Minimum direct openin	g force	45 N				
Conditional short-circu	it current	100 A (EN 60947-5-1)				
Weight (for a 40-dia. he	ad 1NC/1NO Operation Unit)	Approx. 65 g	Approx. 80 g	Approx. 100 g		

***1.** With no icing or condensation.

***2.** The degree of protection from the front of the panel.

*3. The degree of protection is IP65 even with an integrated control box, but the system is not oil resistant.

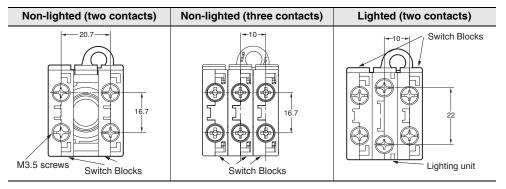


Operating Characteristics

Item	Turn-reset	Pull-reset	
Total travel force (TTF)	44.1 N max.	58.8 N max.	
Return force (RF)	0.25 N·m max. *	58.8 N max.	
Total travel (TT)	10 ±1 mm	5.5 ±1 mm	

* Rotation torque value.

Terminal Arrangement (BOTTOM VIEW)

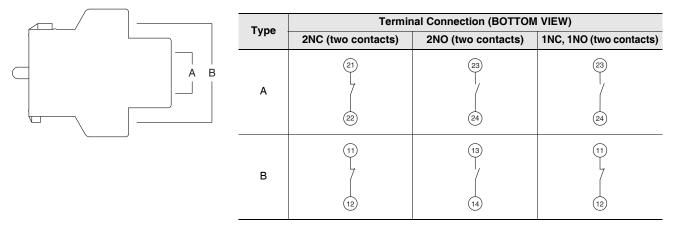


Terminal connection

Туро	Terminal Connection (BOTTOM VIEW)							
Туре	1NC, 1NO (two contacts)	2NC (two contacts)	2NC, 1NO (three contacts)	3NC (three contacts)				
Non-lighted	NC NO (1) (3) (2) (4)	NC NC (1) (1) (2) (2)	NC NC NO (1) (1) (3) (1) (2) (2) (4) (2) (2) (4)	NC NC NC (1) (1) (1) (2) (2) (2)				
Lighted with Direct lighting								
Lighted with Voltage-reduction lighting			-					

Note: The above terminal connection diagrams are examples of the number of contacts.

Terminal wiring drawings of two-contact Switch Units

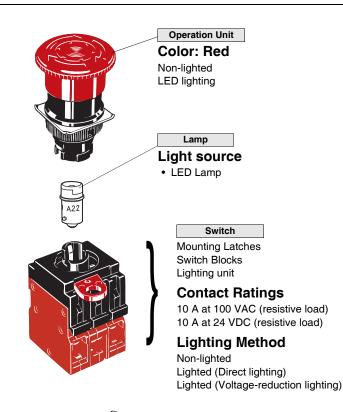


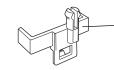
Structure and Nomenclature

A22E

Common Accessories and Tools

Common Note



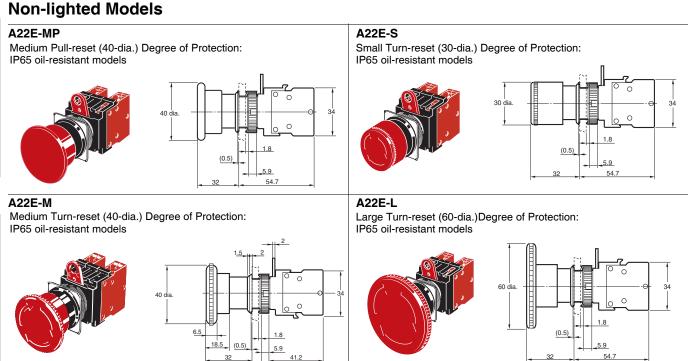


Lock Plate (Attached with the Operation Unit)

(Refer to the "Mounting the Lock Plate" on page 50 for use.)

(Unit: mm)

Dimensions



Note: Unless otherwise specified, a tolerance of ±0.8 mm applies to all dimensions.

Note: The dimensions are the same as for EMO/EMS

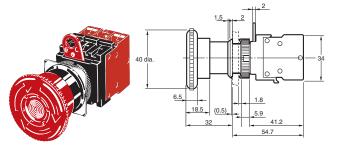
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indication models.

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A22EL-M

Medium Turn-reset (40-dia.) Degree of Protection: IP65 oil-resistant models

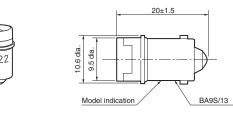


Note: Unless otherwise specified, a tolerance of ±0.8 mm applies to all dimensions.

Accessories (Order Separately)

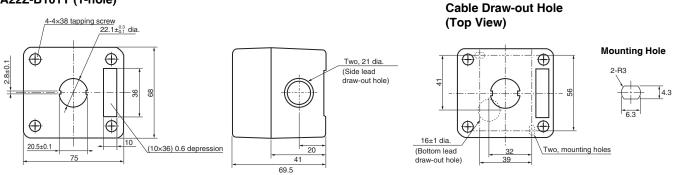
LED Lamp

A22-6, 12, 24



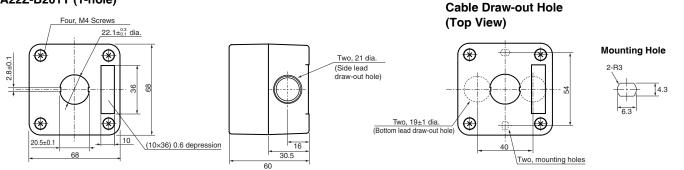
Control Box

A22Z-B101Y (1-hole)



Control Box

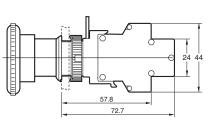
A22Z-B201Y (1-hole)



Note: For details on the accessories common to the screw terminal block types and push-in plus terminal block types, refer to "Common Accessories and Tools (Order Separately)" on page 51.

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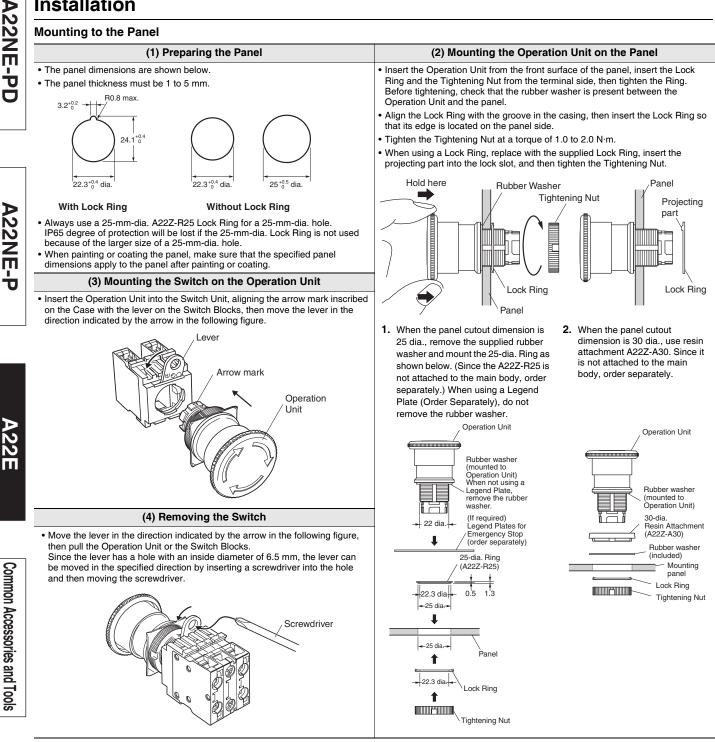
Switch dimensions when mounted to a 2NO (2NC) one-piece switch block



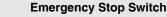
Note: The operation unit is an example for the A22E-M.

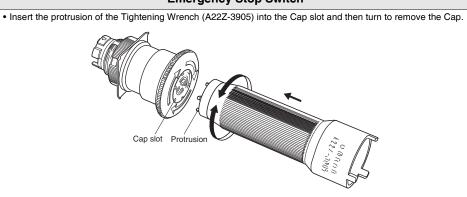
Installation

Mounting to the Panel



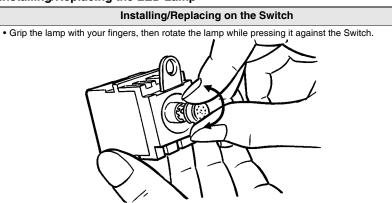
Assembling the Cap





Common Note





Control Box (Enclosure)

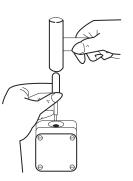
(1) Mounting the Switch (2) Creating a Cable Port Hole (3) Securi

The Standard-size Legend Plate Frame can be mounted.

Mount the Frame as shown in the following diagram. Mount the Switch in the same way as for an ordinary panel.

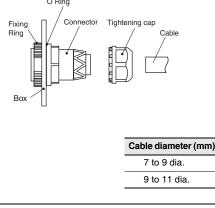


Place the tip of a screwdriver on the surface where the cable port hole is to be created with the cover attached and strike the screwdriver to punch a hole. Attempts to punch a hole on the other side of the case will damage the Box.



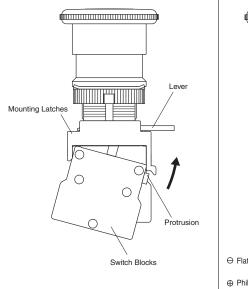
(3) Securing the Connector Cable

- 1. Insert the connector into the cable port hole in the Box and secure with the Mounting Ring inside the box.
- Pass the tightening cap through the cable, insert the cable into the connector, and tighten the tightening cap to secure the cable.
 O Ring



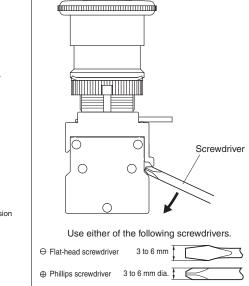
Installing/Removing the Switch Blocks

 (1) Installing the Switch Blocks
 Hook the small protrusion on the Mounting Latch into the groove on the other side of the lever, then push up the Switch Block in the direction indicated by the arrow in the figure below.



(2) Removing the Switch Blocks

 Insert a screwdriver between the Mounting Latch and the Switch Block, then push down the screwdriver in the direction indicated by the arrow in the following figure.

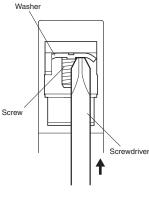


Wiring

Wiring Round Crimp Terminals

 Loosen the terminal screw from the Switch Unit until it completely comes off the groove, insert a screwdriver as shown in the following figure, then push up the washer in the direction indicated by the arrow to temporarily secure it.

Now, a round crimp terminal can be connected. After inserting the terminal, tighten the screws to complete wiring.



A22NE-PD

A22NE-P

A22E

Connector

A22Z-3500-1

A22Z-3500-2

A22NE-

A22NE-

Safety Precautions

Be sure to read the precautions for All PushButton Switches in the website at:http://www.ia.omron.com/.

Indication and Meaning for Safe Use

Warning	Indicates a potentially hazardous situation that, if not avoided, could result in serious injury or death. Additionally there may be significant property damage.
	Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury or in property damage.
Precautions for Safe Use	Supplementary comments on what to do or avoid doing, to use the product safely.

Do not perform wiring with power supplied to the Switch/ Indicator. Do not touch the terminals or other charged parts while power is being supplied. Doing so may result in electric shock.

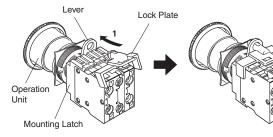
A Caution

If the Operation Unit is separated from the Socket Unit, the equipment will not stop, creating a hazardous condition. Secure the lever on the Socket Unit by using the A22Z-3380 Lock Plate so that the Operation Unit cannot be easily separated from the Socket Unit. (Refer to "*Mounting the Lock Plate*" at the below.)

Precautions for Correct Use

Mounting the Lock Plate

- Confirm that the lever on the Mounting Latch is on the side where the Operation Unit is secured and then insert the protrusion on the Lock Plate into the hole in the lever on the Mounting Latch.
 Press the hole on the Lock Plate onto the protrusion on the
- Mounting Latch until it clicks into place.

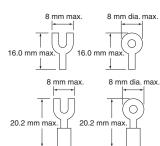


Wiring

- Terminal screws must be Phillips or slotted M3.5 screws with a square washer.
- The tightening torque is 1.08 to 1.27 N⋅m.
- Single wires, stranded wires, and crimp terminals can be connected to the Switch.
- Applicable Wiring Materials: Twisted strands: 2 mm² max. Solid wire: 1.6 mm dia. max.

Naked Crimp Terminals

Crimp Terminals with Insulating Sheaths



• After wiring the Switch, maintain an appropriate clearance and creepage distance.

LED Lamps

- The LED current-limiting resistor is built-in, so internal resistance is not required.
- If commercially available LEDs are used, select the ones that meet the following conditions:

Base: BA9S/13

Overall length: 26 mm max.

Power consumption: 2.6 W max.

When DC-specific LEDs are used, wire the Switch so that the X1 terminal is positive.

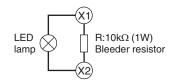
Mis-lighting of the LED

The LED lights with approx. 0.1 mA or less of micro-current. Take a countermeasure like adding a resistor to prevent mis-lighting in parallel to the LED.

The micro-current varies with the machine (leak current or stray capacity between cables, etc.). Select resistance value and allowable power consumption that meet the actual current.

(Circuit example)

In case of using 24 VAC/VDC, Direct lighting



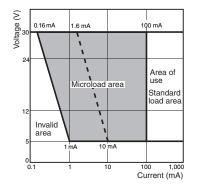
• Do not use a lamp that does not satisfy the rating.

Using the Microload

Contact failure may occur if a Switch designed for a standard load is used to switch a microload. Use Switches within the application ranges shown in the following graph. Even within the application range, insert a contact protection circuit, if necessary, to prevent the reduction of life expectancy due to extreme wear on the contacts caused by loads where inrush current occurs when the contact is opened and closed.

The minimum applicable load is the N-level reference value. This value indicates the malfunction reference level for the reliability level of 60% (λ ₆₀) (conforming to JIS C5003).

The equation, λ $_{60}$ = 0.5 x 10 $^{-6}$ /time indicates that the estimated malfunction rate is less than 1/2,000,000 with a reliability level of 60%.



Be sure to read the "Safety Precautions" on page 56.

Common Accessories and Tools



A22

A22NE-PD/A22NE-P/A22E

Common Accessories and Tools (Order Separately)

Ordering Information

Item	Appearance	Classific	ation	Model	Remarks
	SHERGENCE	60-dia. black lette back-ground	ers on yellow	A22Z-3466-1	Used in combination with the rubber packing when the level of protection is to be met between panels. *1
egend Plates for Emergency Stop	STOP	90-dia. black lette back-ground	90-dia. black letters on yellow back-ground		Used in combination with the rubber packing when the level of protection is to be met between panels. *1 *3
	JERGE ACT	60-dia. black letters on yellow background		A22Z-3466-2	Used in combination with the rubber packing when the level of protection is to be met between panels. * 1
lole Plug		Round	Round		Used for covering the panel cutouts for future panel expansion Black color.
Connectors		Applicable cable diameter	7 to 9 dia. 9 to 11 dia.	A22Z-3500-1 A22Z-3500-2	Plastic connector used to extend a cable from the Switch Box. (Refer to page 16, 32, and 49).
5-dia. Ring	0			A22Z-R25	Use when mounting to a panel with a 25-dia. hole. (Refer to page 16, 31, and 48). Material: Rubber, Level of protection: IP65
0-dia. Iesin Attachment				A22Z-A30	Use when mounting to a panel with a 30-dia. hole. (Refer to page 16, 31, and 48). A rubber packing is provided with the product.
ock Ring	\bigcirc			A22Z-3360	The body is equipped with a Lock Ring. This Lock Ring is used when a more secure lock feature is required. (Refer to page 16 and 31).
ightening Tool	C			A22Z-3905	Used for tightening the tightening nut from the back side of the panel, and for removing the cap in lighted models.
-stop Shroud for MO, Yellow	E MERGE CO				Provides SEMI-S2/SEMATECH APPLICATION GUIDE FOR SEMI-S2 compatibility. The SEMI-S2-compatible Shroud and legend plate for EMERGENCY OFF come as a set. Use with a A22E Emergency Stop Switch (for emergency shutoff) *2 *3
-stop Shroud for MO, Yellow			Legend plate for EMERGENCY OFF is not included.		Provides SEMI-S2/SEMATECH APPLICATION GUIDE FOR SEMI S2 compatibility. Use with an A22E with EMO indication (for emergency off) *3
-stop Shroud for MS, White	E MERECENT			A22Z-EG1-W	Provides SEMI-S2/SEMATECH APPLICATION GUIDE FOR SEMI-S2 compatibility. The SEMI-S2-compatible Shroud and legend plate for EMERGENCY STOP come as a set. Use with an A22E Emergency Stop Switch. (for emergency stop) *2 *3
-stop Shroud for MS, White		Legend plate for E STOP is not inclu		A22Z-EG10-W	Provides SEMI-S2/SEMATECH APPLICATION GUIDE FOR SEMI S2 compatibility. Use with an A22E with EMS indication. (for emergency stop) *3
		Spacer Unit is no	t included.	A22Z-EG2	SEMI-S2/SEMATECH APPLICATION GUIDE FOR SEMI
-stop Shroud, ellow		One Spacer Unit is included. Two Spacer Units are included.		A22Z-EG21 A22Z-EG22	S2-compatible Shroud. (for emergency shutoff) *2 *3 Use together with an A22E Emergency Stop Switch.
-stop Shroud for MO, Yellow	E MERGERE F				Provides SEMI-S2/SEMATECH APPLICATION GUIDE FOR SEMI-S2 compatibility. The SEMI-S2-compatible Shroud and legend plate for EMERGENCY OFF come as a set. Use with au A22E Emergency Stop Switch.(for emergency shutoff) *2 *3
Rubber Packing		-		A22Z-R	Used together with accessories. Contains 10 packings.

***1.** If you use Legend Plates for Emergency Stop, set the thickness of the panels between 1 to 4 mm.

***2.** These Shrouds are for use with the equipment only that conforms to SEMI standards. Do not use them for any other applications (e.g. emergency stop switches for machines or devices such as Machine tools, Printing presses, Industrial machinery, etc).

***3.** The Control Boxes cannot be used in combination with the A22Z-3476-1 Legend Plates for Emergency Stop or the A22Z-EG E-stop Shrouds.

Note: 1. Accessories for A22Z-EG1: one "EMERGENCY OFF" label, two rubber packings, and one lock ring

2. Accessories for A22Z-EG10: one rubber packing and one lock ring (without label)

A22NE-P

A22E

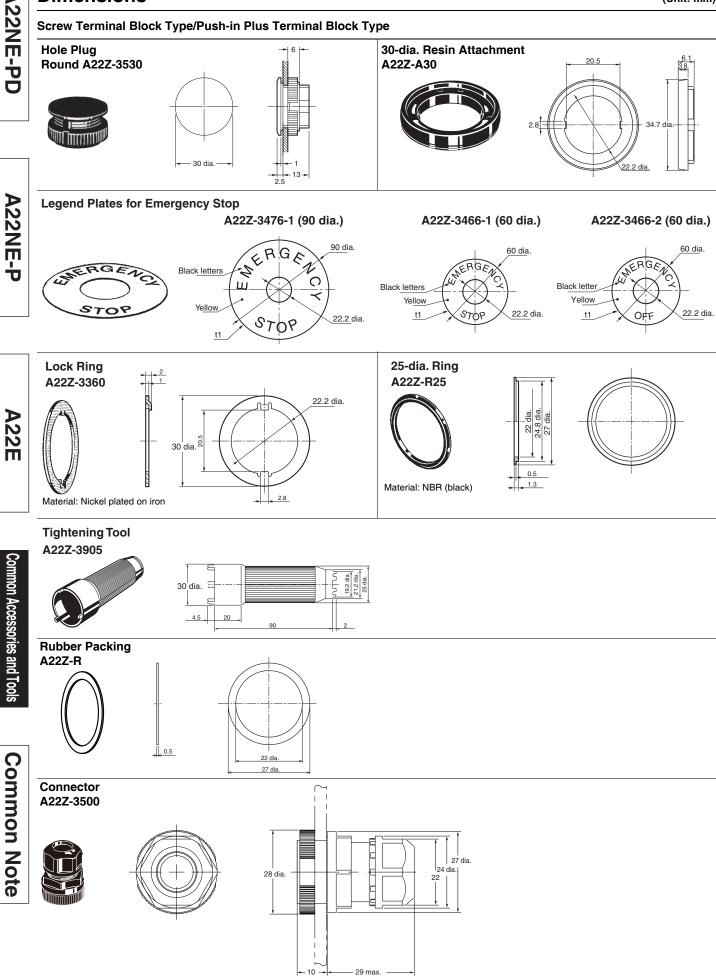
Common Accessories and Tools

Common Note

A22NE-PD/A22NE-P/A22E

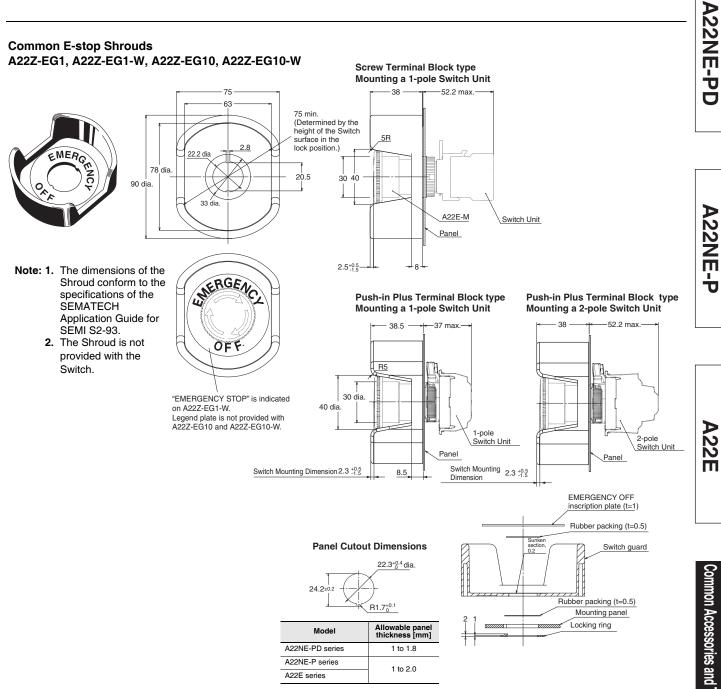
Dimensions





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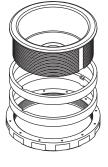
Common Accessories and Tools

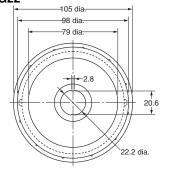
OMRON

A22NE-PD/A22NE-P/A22E



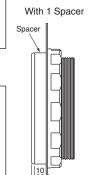
E-stop Shrouds A22Z-EG2, A22Z-EG21, A22Z-EG22





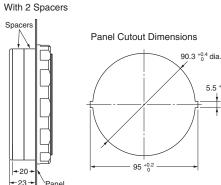
5.5 +0.2

During spacer attachment



13

2.



specifications of the SEMATECH Application Guide

Note: 1. The dimensions of the Shroud conform to the

3. Tighten to a torque of 1.96 to 2.94 N·m. 4. The allowable panel thicknesses are as follows: Without Spacers: t=1.3 to 22.5 mm

With 1 Spacer: t=1.3 to 12.5 mm

With 2 Spacers: t=1.3 to 2.5 mm

The Shroud is not provided with the Switch.

for SEMI S2-93.

Screw Terminal Block Type Mounting a 1-pole Switch Unit *

A22Z-EG21 : 1 Spacer A22Z-EG22 : 2 Spacers

35

Detents inside (One on each side)

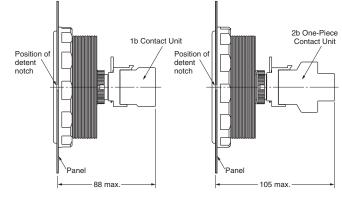
2Ŕ

-12

M90

The number of spacers depends on the model A22Z-EG2 : No Spacer

Screw Terminal Block Type Mounting a 2-pole Switch Unit *

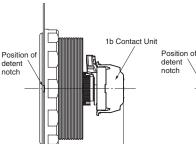


Push-in Plus Terminal Block Type Mounting a 1-pole Switch Unit *

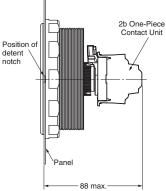
`Panel

72 max

detent notch

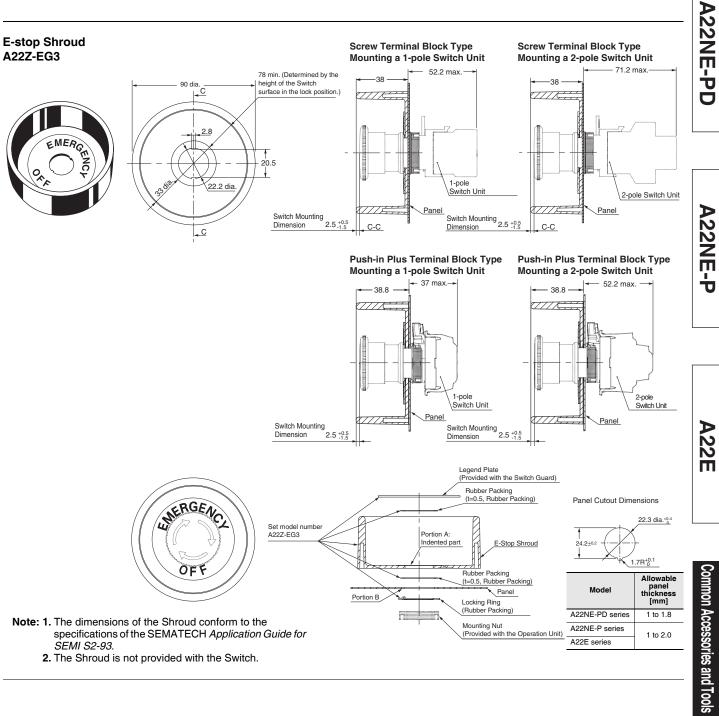


Push-in Plus Terminal Block Type Mounting a 2-pole Switch Unit *



* These are the dimension from the front of the panel when the Switch Unit is attached.

A22NE-PD/A22NE-P/A22E



A22E/A22NE-P

Safety Precautions

Be sure to read the precautions for All PushButton Switches in the website at:http://www.ia.omron.com/.

Indication and Meaning for Safe Use

PrecautionsSupfor Safe Useor a

iONSSupplementary comments on what to doUseor avoid doing, to use the product safely.

Precautions for Correct Use

Mounting

- Always make sure that the power is turned OFF before wiring the Switch. Also, do not touch the terminals or other current-carrying ports while power is being supplied. Electric shock may occur.
- Do not tighten the tightening nut more than necessary by using tools such as pointed-nose pliers. Doing so could damage the tightening nut. (The tightening torque is 1.0 to 2.0 N-m.)
- Recommended panel thickness: 1 to 5 mm.
- When mounting the caps after changing the LED or the caps, tighten the caps at a tightening torque of 0.49 to 0.78 N·m.

Operating Environment

- This model is designed with a protective structure so that it will not sustain damage if it is subjected to water from any direction to the front of the panel.
- The Switch is intended for indoor use only. Using the Switch outdoor may cause it to fail.

Others

- If the panel is to be coated, make sure that the panel meets the specified dimensions after coating.
- Due to the structure of the Switch, severe shock or vibration may cause malfunctions or damage to the Switch.

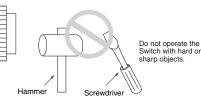
Also, most Switches are made from resin and will be damaged if they come into contact with sharp objects. Particularly scratches on the Operation Unit may create visual and operational obtrusions.

Handle the Switches with care, and do not throw or drop them.

Do not allow the Switch to drop and hit the floor.

Do not place or drop heavy objects on the Switch.







A22NE-PD

Common Note

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