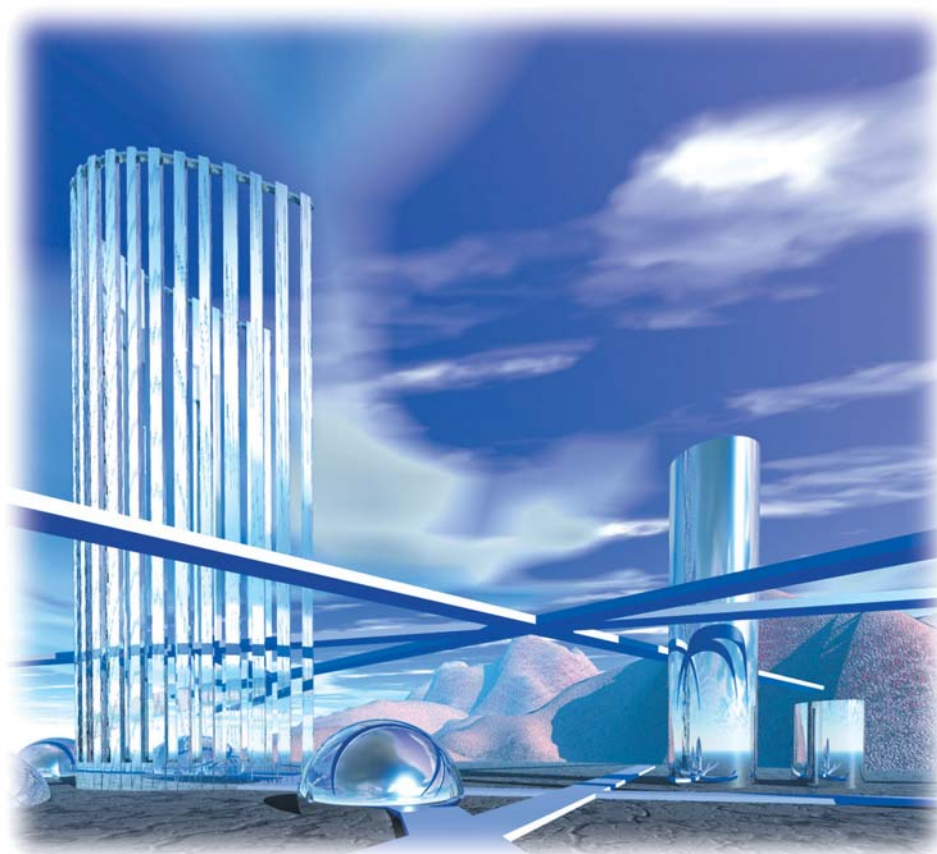


EXPLOSION-PROOF TYPE CONTROL EQUIPMENTS



FOR INSTALLATION OF EXPLOSION-PROOF ELECTRICAL EQUIPMENT

Prior to installation of explosion-proof electrical equipments, careful study should be made on the following recommendations.

1. To prevent explosions or fires caused by the electrical equipments, every effort should be made, as a prerequisite, to minimize possible danger of explosion at a location where they are to be installed.
2. The electrical equipments should be installed at a location with a minimum possibility of explosion. In case, however, they are unavoidably installed at a hazardous location where explosion is expected, it should be limited to a minimum extent.
3. The explosion-proof electrical equipments to be installed should be the products that have been proved to fully meet the requirements.

CLASSIFICATION OF DANGER CLASS

Study the sorts of inflammable gas or steam present at a location where the electrical equipments are to be installed in order to determine the explosion class and the firing degree. Then, determine the hazardous locations according to the degree of danger of the locations where the electrical equipments are to be installed. The explosion-proof electrical equipments may be selected on the basis of the determination of explosion class, firing degree and hazardous locations.

The danger class of explosive gas is determined by the firing degree and explosion class.

Firing Degree	Firing Point			
G1	over	450°C		
G2	//	300°C	up to	450°C
G3	//	200°C	//	300°C
G4	//	135°C	//	200°C
G5	//	100°C	//	135°C

Explosion Class	Minimum Clearance which permits flame running at 25 mm.		
1	over	0.6 mm	
2	over	0.4 mm	up to 0.6 mm
3			up to 0.4 mm

Classification Example of Explosive Gases

Explosion Class \ Firing Point	G 1	G 2	G 3	G 4	G 5
1	Ammonia Carbon Monoxide Acetic Acid Propane Methane	Ethanol Amyl Acetate-iso 1-Butanol Butane Acetic Anhydride	Gasoline Hexane	Acetaldehyde Ethylether	
2	Coal Gas	Ethylene Ethylene Oxide			
3	Water Gas Hydrogen	Acetylene			

Togami products can be used in such gas atmospheres as colored Deep Green.

CLASSIFICATION OF HAZARDOUS LOCATIONS

The areas of possible danger or to be dangerous atmosphere are classified into Class 0, Class 1 and Class 2 depending upon the dangerous time and frequency of occurrence of danger.

Class 0 ... where dangerous density of explosive gas continues or is held for a long time above the lower limit of an explosion.

Class 1 ... where a dangerous atmosphere is expected to be present under normal state.

Class 2 ... where a dangerous atmosphere is expected to be present under abnormal state.

TYPES OF EXPLOSION-PROOF CONSTRUCTION

The explosion-proof construction is designed to protect the equipment in use at a hazardous location and can be divided into many different types including Pressure-Resisting Explosion-Proof (d), Oil-Immersed Explosion-Proof (o), Internal Pressure-Resisting Explosion-Proof (f), Increased Safety Explosion-Proof (e), Substantial Safety Explosion-Proof (i), Special Explosion-Proof (s) and other varying types. Out of them, the following construction types are employed in the explosion-proof electrical equipment introduced in this paper.

*Pressure-Resisting Explosion-Proof Type (d)

This is of a totally enclosed construction, and should an explosion take place inside the enclosure, the enclosure resists the resultant pressure eliminating a danger of igniting an explosive gas outside.

*Increased Safety Explosion-Proof Type (e)

This is of the construction which is particularly provided with increased safety on its construction or temperature rise, in order to prevent sparking, arcing and overheating on those parts which should not essentially generate them.

PRODUCTION TYPE

■ EXPLOSION-PROOF CIRCUIT BREAKERS (P3~P5, P11)

Model	Type of boxes	Hazardous Location	Explosion-proof construction
NZB	Upper and lower terminal boxes type	Applicable in hazardous locations Class 1 and 2	d2G4
NZR	Lower terminal box type	Applicable in hazardous locations Class 1 and 2	d2G4
NZL	Multi-unit type	Applicable in hazardous location Class 2	de2G4

■ EXPLOSION-PROOF COMBINATION STARTERS (P6~P11)

Model	Type of boxes	Hazardous Location	Explosion-proof construction
GZB	Upper and lower terminal boxes type	Applicable in hazardous locations Class 1 and 2	d2G4
GZR	Lower terminal box type	Applicable in hazardous locations Class 1 and 2	d2G4
GZL	Multi-unit type	Applicable in hazardous location Class 2	de2G4

■ EXPLOSION-PROOF MAGNETIC MOTOR STARTERS (P12~P14)

Model	Type of boxes	Hazardous Location	Explosion-proof construction
MZB	Upper and lower terminal boxes type	Applicable in hazardous locations Class 1 and 2	d2G4
MZR	Lower terminal box type	Applicable in hazardous locations Class 1 and 2	d2G4

■ EXPLOSION-PROOF CONTROL SWITCHES (P15~P42)

Model	Material	Max equipped apparatus	Hazardous Location	Explosion-proof construction
CZ	Castrion Type	Explosion-proof Control Switches with Ammeter	Applicable in hazardous locations Class 1 and 2	d2G4
PZ		Explosion-proof Control Switches without Ammeter	Applicable in hazardous locations Class 1 and 2	d2G4
PBZ		Explosion-proof Push Button Switches	Applicable in hazardous locations Class 1 and 2	d2G4
EPS·EPW·EDW	Aluminum alloy type	Refer to P32~42	Applicable in hazardous locations Class 1 and 2	d2G5
HPS·HPW			Applicable in hazardous locations Class 1 and 2	d3aG5

EXPLOSION-PROOF CIRCUIT BREAKERS 〈NZ MODEL〉

The explosion-proof circuit breaker containing TOGAMI's Molded Case Circuit Breaker with the rational overcurrent protection device is recommended to be used as a main switch for line protection.



NZR MODEL

CODE IDENTIFICATION

N Z B 2 - A 050 E - A R

Model
NZB... Upper and lower terminal boxes type
NZR... Lower terminal box type
NZL... Multi-unit type

Enclosure Type No.
2
4
6
8
9

History

Capacity of the Molded Case Circuit Breaker
050... 50AF
100... 100AF
200... 225AF
400... 400AF
600... 600AF

Supplementary Specifications
Refer to the table of supplementary specifications in page4.

COMMON SPECIFICATIONS

- 1.Material...The molded case and Cover : Steel Type
- 2.Outside breaker with handle
- 3.The molded Case Circuit Breaker can be controlled by means of an external operating handle and handle can be locked at the OFF-position by the use of a locking pin.
- 4.The service entrance is flameproof threaded joint steel conduit leading type.
- 5.The equipment name plate is provided. Name indication is made on an acryl plate in black letters on a white field.
- 6.Painting Color :
Internal and External Surfaces of Enclosures : Munsell No. 7.5BG6/1.5
The molded Case Circuit Breaker Operating Handle : Munsell No. N1.5

RATINGS AND STANDARD SPECIFICATIONS

Basic Type			M.C.C.B	Rated Current (A)	Breaking Capacity (kA)		Standard Hub size (PF)			
Model	Enclosure Type No.	Type		220V/460V	220V	460V	Power	Load		
N Z L		N Z B	8	A050	50AF	50	25	10	1 ¼	1 ¼
				A100	100AF	100	25	10	1 ½	1 ½
			9	200	225AF	225	25	15	2 ½	2 ½
				400	400AF	400	35	25	3	3
			2	A050	50AF	50	25	10	1 ¼	1 ¼
				A100	100AF	100	25	10	1 ½	1 ½
			4	200	225AF	225	25	15	2 ½	2 ½
				400	400AF	400	35	25	3	3
		6		600	600AF	600	35	25	4	4

SUPPLEMENTARY SPECIFICATIONS LIST

Enclosure Type No.	Supplementary Specifications					
	Earth Leakage Relay	Ammeter	Outdoor Type	Indicating Lamp	Current Transformer	Packing Type Cable Leading Method
8	⊗	○	○	○	⊗	○
9	—	○	○	○	○	○
2	○	○	○	○	○	○
4	○	○	○	○	○	○
6	○	○	○	○	○	○

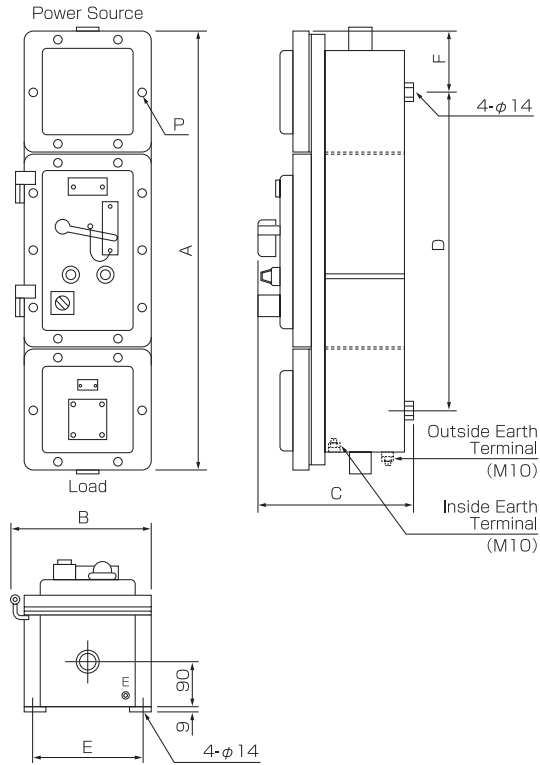
1. NZB Models (Upper and lower terminal boxes type) with an ammeter is not available.
 2. The apparatuses marked ⊗ are available to mount either one.

SUPPLEMENTARY SPECIFICATIONS

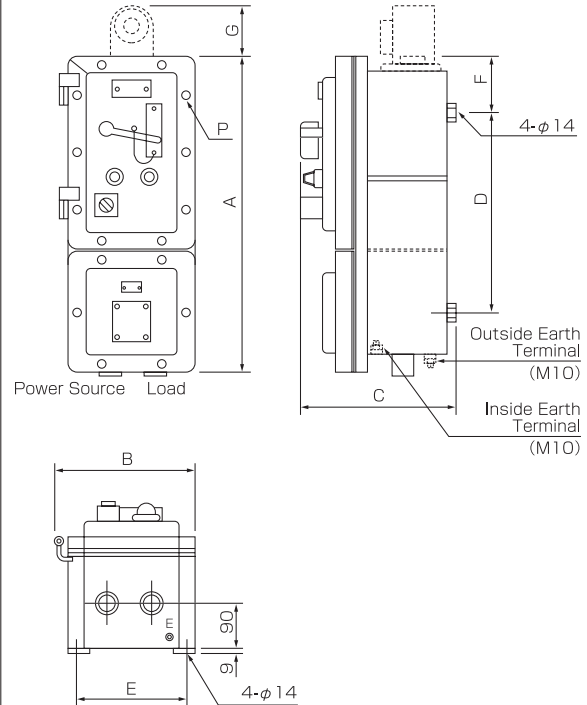
Item	Symbol	Standard Specification
Earth Leakage Relay	E	The earth leakage relay is current-activated type and has 200mA grounding sensitivity current. A testing/resetting push-button is installed on the cover. The molded Case Circuit Breaker contained is a shunt-trip type.
Ammeter	A	Extension scale Three times scale. A red pointer provided for displaying rated current. NZB Models (Upper and lower terminal boxes type) are not available.
Outdoor Type	R	A packing is used inside a flange to prevent infiltration of rain water. It is recommended to install a roof to avoid direct exposure to rain.
Indicating Lamp	1 · 2	1 Power indicating lamp (White). 2 Running indicating lamp (Red). An indicating lamp is equipped with a voltage transformer. Bulb : 18V,2W. An indicating lamp can be installed to 2.
Current Transformer	C	Rated secondary current : 5A Two terminals for a remote ammeter. Rating obligation 15VA 1.0 level
Packing Type Cable Leading Method	U	Flameproof packing leading type service entrance appropriate to entrance cable is installed.

DIMENSIONS <NZ MODEL>

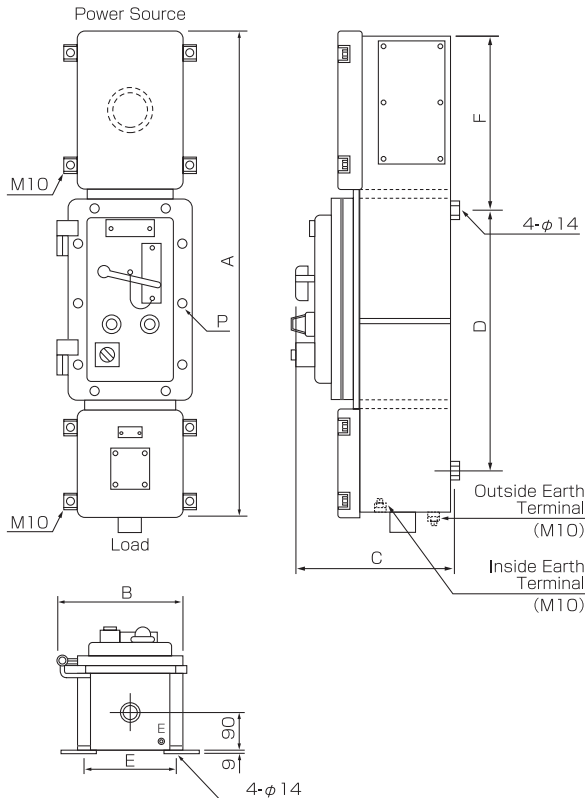
NZB ... Upper and lower terminal boxes type



NZR ... Lower terminal box type



NZL ... Multi-unit type



Model	Encl- ure Type No.	Dimension (mm)								Weight (kg)
		A	B	C	D	E	F	G	P	
N Z B	8	959	299	324	750	240	108	—	M12	68
	9	1565	461	364	1100	350	234	—	M20	190
	2	1033	355	330	700	280	153	—	M16	105
	4	1603	491	364	1200	380	203	—	M20	220
N Z R	8	695	299	324	500	240	84	101	M12	47
	9	1142	461	364	800	350	164	126	M20	160
	2	791	355	330	500	280	117	97	M16	75
	4	1240	491	364	900	380	140	126	M20	200
N Z L	8	1054	299	349	650	240	350	—	M12	60
	9	1416	461	364	650	350	350	—	M20	165
	2	1141	355	355	650	280	350	—	M16	90
	4	1535	491	364	650	380	350	—	M20	210
	6	1876	570	478	1100	480	350	—	M20	400

* Refer to P11 for the overall dimensions which could install NZL in the multi-unit flame.

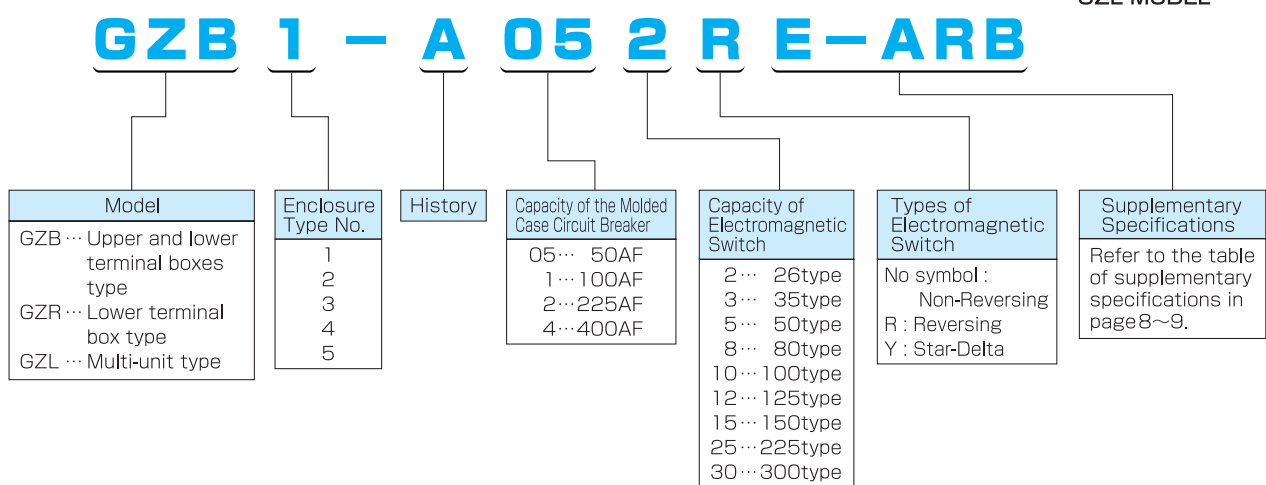
EXPLOSION-PROOF COMBINATION STARTERS (GZ MODEL)

The explosion-proof combination starter, incorporating a Togami Electromagnetic Switch with a high-performance overcurrent relay and a Togami Molded Case Circuit Breaker, is applicable to motor operation and protection of circuit and motor.



GZL MODEL

CODE IDENTIFICATION



COMMON SPECIFICATIONS

1. Material ... The molded case and Cover : Steel Type
2. Outside breaker with handle
3. The molded Case Circuit Breaker can be controlled by means of an external operating handle and handle can be locked at the OFF-position by the use of a locking pin.
4. The service entrance is flameproof threaded joint steel conduit leading type.
5. The equipment name plate is provided. Name indication is made on an acryl plate in black letters on a white field.
6. Painting Color :
Internal and External Surfaces of Enclosures : Munsell No. 7.5BG6/1.5
The molded Case Circuit Breaker Operating Handle : Munsell No. N1.5
7. The operating push-buttons have indications in English on their surfaces. The color of ON push-button is red and OFF push-button is green.
8. The OFF push-button has a locking device.
9. The thermal overload relay is external manual-resetting type, equipped with a resetting push-button installed on the cover. The color of the resetting push-button is red and it has indications in Japanese and English on its surface.
10. Remote and Direct control :
Please add supplementary specifications of code to 『B』.

RATINGS AND STANDARD SPECIFICATIONS

Type	Basic Type			Main Equipment		Maximum Applicable Load (kW)		Standard Hub Size (PF)		
	Model	Enclosure Type No.	Type	M.C.C.B	Magnetic Switch	200V—220V	380V—440V	Power	Load	Cotrol
Non-Reversing	GZB	1	A052	50AF	26AF	5.5	11	1	1	¾
			A053		35AF	7.5	15	1	1	¾
		2	A052		26AF	5.5	11	1	1	¾
			A053		35AF	7.5	15	1	1	¾
			A055		50AF	11	22	1¼	1¼	¾
		3	A108		80AF	19	37	1¼	1¼	¾
			A110		100AF	22	45	1½	1½	¾
	GZL	4	212	225AF	125AF	30	55	1½	1½	¾
			215		150AF	40	75	2	2	¾
		5	225		225AF	50	90	2½	2½	¾
			425	400AF	225AF	55	90	2½	2½	¾
			430		300AF	75	150	2½	2½	¾
Reversing	GZB	2	A052R	50AF	26AF	5.5	11	1	1	¾
			A053R		35AF	7.5	15	1	1	¾
		3	A052R		26AF	5.5	11	1	1	¾
			A053R		35AF	7.5	15	1	1	¾
	GZR	4	055R		50AF	11	22	1¼	1¼	¾
			108R	100AF	80AF	19	37	1¼	1¼	¾
	GZL	5	110R		100AF	22	37	1½	1½	¾
			112R		125AF	—	45	1½	1½	¾
		5	215R	225AF	150AF	40	75	2	2	¾
Star-Delta	GZB	2	A053Y	50AF	△ ... 26AF	7.5	11	1	1x2	¾
			A055Y		△ ... 35AF	11	19	1¼	1¼x2	¾
		3	A053Y		△ ... 26AF	7.5	11	1	1x2	¾
			A055Y		△ ... 35AF	11	19	1¼	1¼x2	¾
	GZR	4	A108Y	100AF	△ ... 50AF	19	26	1¼	1¼x2	¾
			110Y		△ ... 65AF	22	37	1½	1½x2	¾
	GZL	5	215Y	225AF	△ ... 100AF	40	55	2	2x2	¾
			225Y		△ ... 150AF	50	90	2½	2½x2	¾

1. GZL Models have not a power intaking hub.

2. In the case of a Star-Delta, two load intaking hubs are installed.

3. Standard setting of Star-Delta timer is 0 to 30 seconds.

Switch dead time is 0.25 seconds. Running time of Star-Delta shall be set to (4+2√kW)/sec.

SUPPLEMENTARY SPECIFICATIONS LIST

Type	Code	Supplementary Specifications								
		Earth Leakage Relay	Ammeter	Outdoor Type	Indicating Lamp	Current Transformer	Change-over Switch	Restart Relay	Control Transformer	Packing-type Cable Leading Method
Non-Reversing	1 - A052	—	○	○	○	○	○	—	○	○
	1 - A053	—	○	○	○	○	○	—	○	○
	2 - A052	○	○	○	○	○	○	○	○	○
	2 - A053	○	○	○	○	○	○	○	○	○
	2 - A055	○	○	○	○	○	○	⊗	⊗	○
	3 - A108	○	○	○	○	○	○	⊗	⊗	○
	3 - A110	○	○	○	○	○	○	○	○	○
	4 - 212	○	○	○	○	○	○	○	○	○
	4 - 215	○	○	○	○	○	○	○	○	○
	5 - 225	○	○	○	○	○	○	○	○	○
	5 - 425	○	○	○	○	○	○	○	○	○
	5 - 430	—	○	○	○	○	○	○	○	○
Reversing	2 - A052R	⊗	○	○	○	○	○	—	⊗	○
	2 - A053R	⊗	○	○	○	○	○	—	⊗	○
	3 - A052R	○	○	○	○	○	○	○	○	○
	3 - A053R	○	○	○	○	○	○	○	○	○
	4 - 055R	○	○	○	○	○	○	○	○	○
	4 - 108R	○	○	○	○	○	○	○	○	○
	4 - 110R	○	○	○	○	○	○	○	○	○
	5 - 112R	○	○	○	○	○	○	○	○	○
	5 - 215R	○	○	○	○	○	○	○	○	○
Star-Delta	2 - A053Y	○	○	○	○	⊗	○	—	⊗	○
	2 - A055Y	○	○	○	○	⊗	○	—	⊗	○
	3 - A053Y	○	○	○	○	○	○	—	○	○
	3 - A055Y	○	○	○	○	○	○	—	○	○
	3 - A108Y	○	○	○	○	○	○	—	○	○
	4 - 110Y	○	○	○	○	○	○	○	○	○
	5 - 215Y	○	○	○	○	○	○	○	○	○
	5 - 225Y	—	○	○	○	○	○	○	○	○

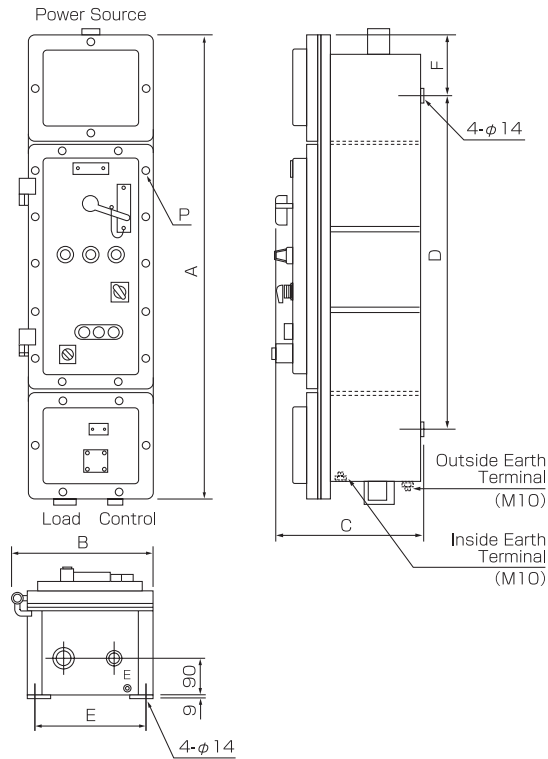
1. GZB Models (Upper and lower terminal boxes type) are not available with an ammeter.
2. The apparatuses marked ⊗ are available to mount either one.

SUPPLEMENTARY SPECIFICATIONS

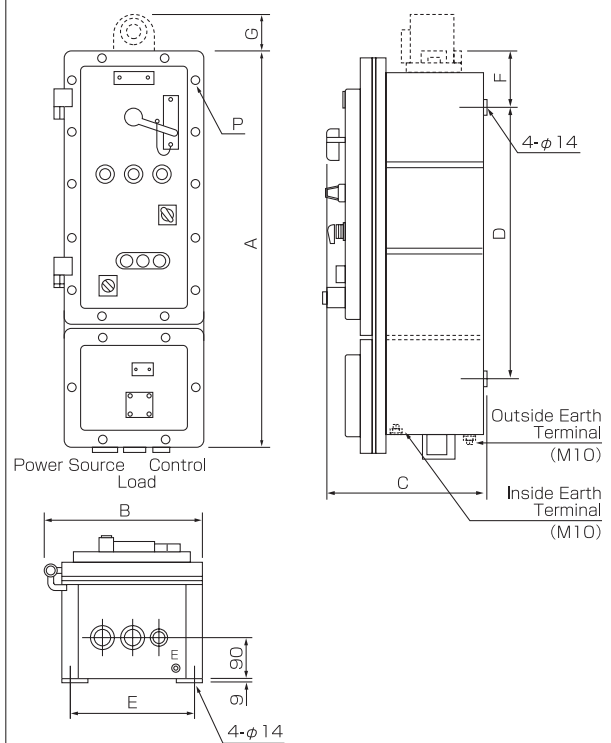
Item	Symbol	Standard Specification
Earth Leakage Relay	E	The earth leakage relay is current-activated type and has 200mA grounding sensitivity current. A testing/resetting push button is installed on the cover.
Ammeter	A	Extension scale : Three times scale. A red pointer provided for displaying rated current. GZB Models (Upper and lower terminal boxes type) are not available.
Outdoor Type	R	A packing is used inside a flange to prevent infiltration of rain water. It is recommended to install a roof to avoid direct exposure to rain.
Control System	B No Symbol	B (Common specifications) : Remote and direct control. OFF push-button provided with locking device. 3 terminals for remote control. No Symbol : Remote control. 3 terminals for remote control.
Indicating Lamp	1 · 2 · 3 · 4 · 5	1 : Power indicating lamp. 2 : Running indicating lamp. 3 : Running and Stop indicating lamps. 4 : Power and Running indicating lamps. 5 : 3 pcs. indicating lamps. White : Power Green : Stop Red : Running and Forward An indicating lamp is equipped with a voltage transformer. Bulb : 18V, 2W
Current Transformer	C	Rated secondary current : 5A Two terminals for a remote ammeter. Rating obligation 15VA 1.0 level.
Changeover Switch	G	Provided with a manual/auto, interlocking/single-acting or remote/direct switch. Handle operation. A name plate is attached.
Restart Relay	L	Restart time : 1-3 sec. In case of 400V circuit, a voltage transformer is used.
Control Transformer	P	One relay (88X) and two transformer protection fuses (one for primary side (3A) and the other for secondary side (1A)) are attached.
External Indicating Lamp Terminal	Q	External Indicating lamp leading terminal are added.
Packing Type Cable Leading Method	U	Flameproof packing leading type service entrance appropriate to entrance cable is installed.

DIMENSIONS <GZ MODEL>

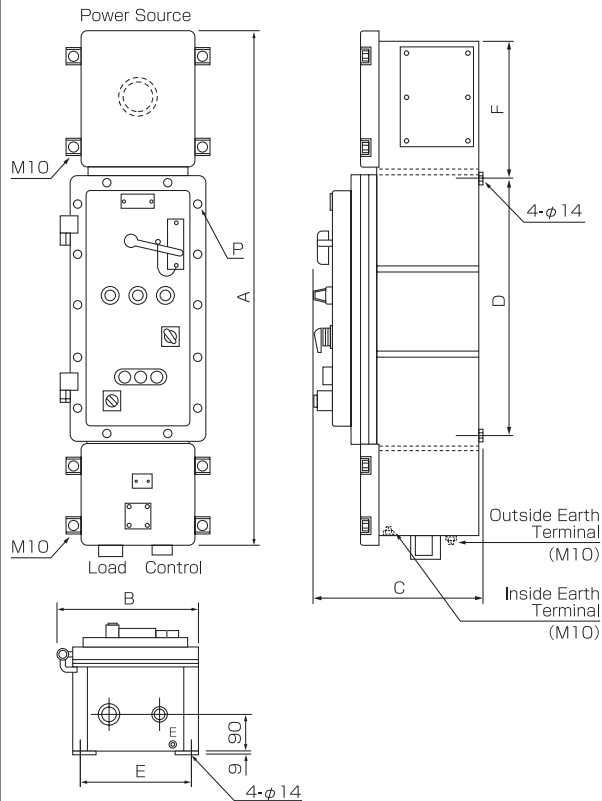
GZB ... Upper and lower terminal boxes type



GZR ... Lower terminal box type



GZL ... Multi-unit type



Model	Enclosure Type No.	Dimension (mm)								Weight (kg)
		A	B	C	D	E	F	G	P	
GZB	1	907	299	325	700	240	103	—	M12	68
	2	1033	355	330	700	280	153	—	M16	105
	3	1233	371	355	900	300	168	—	M16	130
	4	1603	491	364	1200	380	203	—	M20	230
	5	2025	571	367	1500	480	264	—	M20	330
GZR	1	695	299	324	500	240	64	101	M12	50
	2	791	355	330	500	280	117	97	M16	75
	3	961	371	355	650	300	133	97	M16	100
	4	1240	491	364	900	380	140	126	M20	205
	5	1602	571	367	1100	480	264	126	M20	280
GZL	1	1053	299	362	650	240	358	—	M12	63
	2	1141	355	367	650	280	358	—	M16	92
	3	1305	371	367	650	300	358	—	M16	120
	4	1535	491	376	650	380	358	—	M20	220
	5	1876	571	379	1100	480	358	—	M20	300

* Refer to P11 for the overall dimensions which could install GZL in the multi-unit flame.

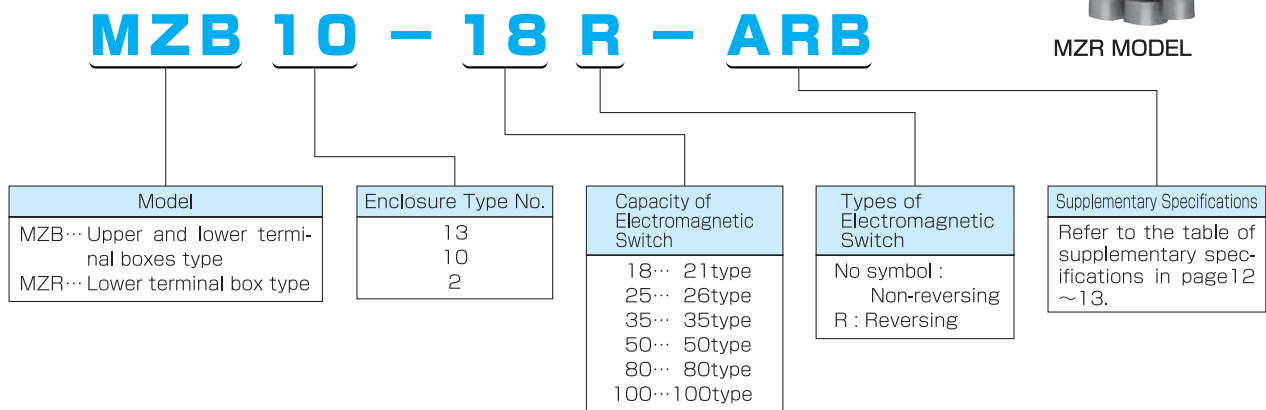
EXPLOSION-PROOF MAGNETIC MOTOR STARTERS <MZ MODEL>

The explosion-proof magnetic motor starter, incorporating a Togami Electromagnetic Switch with a high-performance overload relay, is applicable as a motor starter for its safety.



MZR MODEL

CODE IDENTIFICATION



COMMON SPECIFICATIONS

1. Material...The molded case : Steel Type
Cover : 10, 13Type (Castrion Type), 2type (Steel Type)
2. The service entrance is flameproof threaded joint steel conduit leading type.
3. The equipment name plate is provided. Name indication is made on an acryl plate in black letters on a white field.
4. Painting Color :
Internal and External Surfaces of Enclosures : Munsell No. 7.5BG6/1.5
5. The operating push-buttons have indications in English on their surfaces. The color of ON push-button is red and OFF push-button is green.
6. The OFF push-button has a locking device.
7. The thermal overload relay is external manual-resetting type, equipped with a resetting push-button installed on the cover. The color of the resetting push-button is red and it has indication in Japanese and English on its surface.
8. Remote and direct control :
Please add supplementary specifications of code to 『B』.

SUPPLEMENTARY SPECIFICATIONS LIST

Enclosure Type No.	Supplementary Specification							
	Ammeter	Outdoor Type	Indicating Lamp	Current Transformer	Changeover Switch	Restart Relay	Control Transformer	Packing Type Cable Leading Method
13	○	○	⊗	—	⊗	—	—	○
10	○	○	○	○	○	○	○	○
2	○	○	○	○	○	○	○	○

1. MZB Models (Upper and lower terminal boxes type) are not available with an ammeter.
2. The apparatuses marked ⊗ are available to mount either one.

RATINGS AND STANDARD SPECIFICATIONS

Type	Basic Type			Magnetic Contactor	Maximum Applicable Load (kW)		Standard Hub Size (PF)		
					200V— 220V	380V— 440V	Power	Load	Cotrol
Non-Reversing	MZR	MVB	13-25	PAK- 26	5.5	11	1	1	3/4
			13-35	PAK- 35	7.5	15	1	1	3/4
			10-25	PAK- 26	5.5	11	1	1	3/4
			10-35	PAK- 35	7.5	15	1	1	3/4
			2-50	PAK- 50	11	22	1 1/4	1 1/4	3/4
			2-80	PAK- 80	19	37	1 1/4	1 1/4	3/4
			2-100	PAK-100	25	45	1 1/2	1 1/2	3/4
Reversing	MZR	MVB	13-18R	PSK- 21	3.7	5.5	1	1	3/4
			2-25R	PSK- 26	5.5	11	1	1	3/4
			2-35R	PSK- 35	7.5	15	1	1	3/4

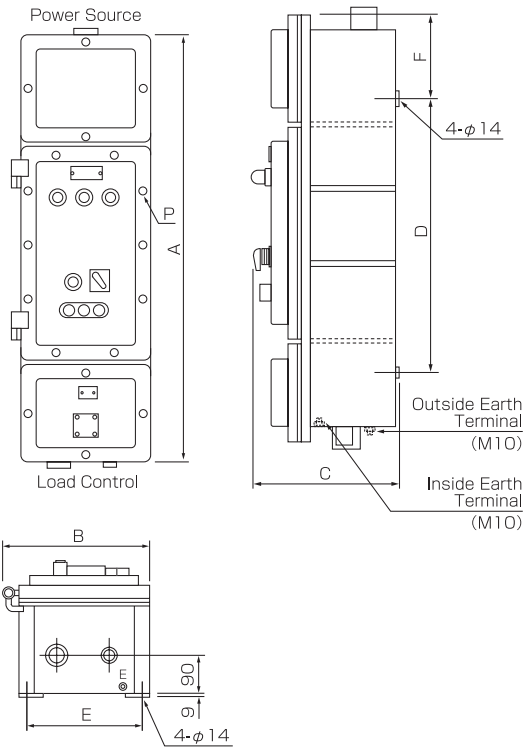
1. MVB Models (Upper and lower terminal boxes type) are not available with ammeter.
2. In case of a star-delta starter, two load intaking hubs are installed.

SUPPLEMENTARY SPECIFICATIONS

Item	Symbol	Standard Specification
Ammeter	A	Extension scale : Three times scale. A red pointer provided for displaying rated current. Current transformer is added. MVB Models (Upper and lower terminal boxes type) are not available.
Outdoor Type	R	A packing is used inside a flange to prevent infiltration of rainwater. It is recommended to install a roof to avoid direct exposure to rain.
Control System	B No Symbol	B (Common specifications) : Remote and direct control. OFF push-button provided with locking device. 3 terminals for remote control. No Symbol : Remote control. 3 terminals for remote control.
Indicating Lamp	1 · 2 · 3 · 4	1 : Power indicating lamp. 2 : Running indicating lamp. White : Power Green : Stop Red : Running and Forward An indicating lamp is equipped with a voltage transformer. Bulb : 18V, 2W 3 : Running and Stop indicating lamps. 4 : Power and Running indicating lamps.
Current Transformer	C	Rated secondary current : 5A Two terminals for a remote ammeter. Rating obligation 15VA 1.0 level
Changeover Switch	G	Provided with a manual/auto, interlocking/single-acting or remote/direct switch. Handle operation. A name plate is attached.
Restart Relay	L	Restart time : 1-3 sec. In case of 400V circuit, a voltage transformer is used.
Control Transformer	P	One relay (88X) and two transformer protection fuses (one for primary side (3A) and the other for secondary side (1A)) are attached.
Packing Type Cable Leading Method	U	Flameproof packing leading type service entrance appropriate to entrance cable is installed.

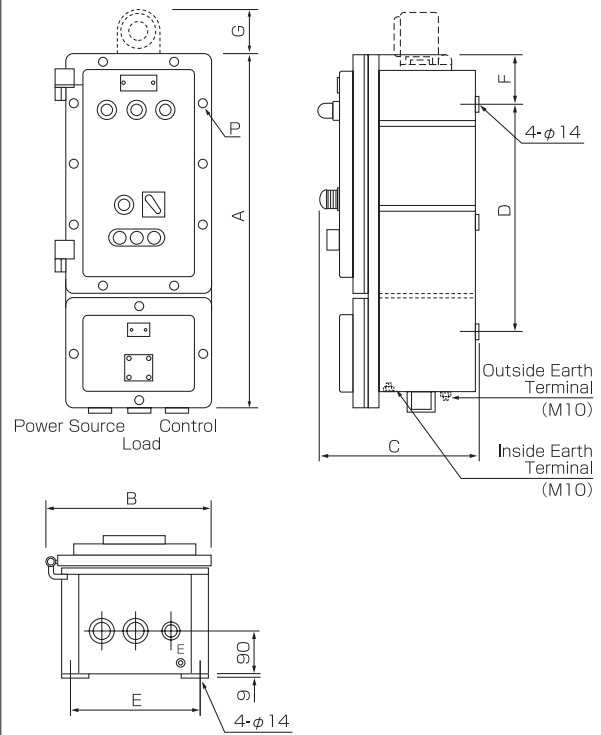
DIMENSIONS <MZ MODEL>

MZB ... Upper and lower terminal boxes type



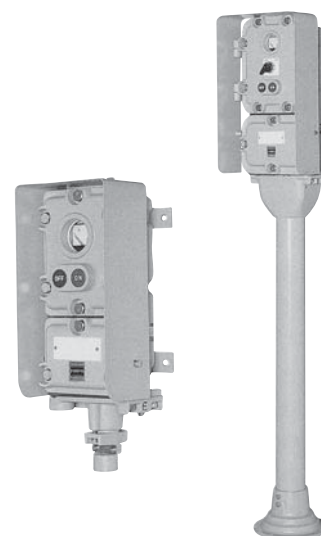
Enclosure Type No.	Dimension (mm)								Weight (kg)
	A	B	C	D	E	F	G	P	
13	705	308	273	500	240	106	—	M12	46
10	866	365	278	700	280	83	—	M16	63
2	1033	355	342	700	280	153	—	M16	105

MZR ... Lower terminal box type



Enclosure Type No.	Dimension (mm)								Weight (kg)
	A	B	C	D	E	F	G	P	
13	485	308	273	320	240	88	98	M12	38
10	637	365	278	450	280	104	93	M16	57
2	791	355	342	500	280	117	97	M16	75

EXPLOSION-PROOF CONTROL SWITCHES <CZ MODEL>



■ CODE IDENTIFICATION

CZB – NH211G

① ② ③ ④ ⑤ ⑥ ⑦

Order	Indication	Description
①	Model	CZ Explosion-proof Control Switches with Ammeter PZ Explosion-proof Control Switches without Ammeter PBZ Explosion-proof Push Button Switches
②	The Method of Installation & Leading Method of the Outside Conduit	D Wall Mounting Type and Heavy Gauge Steel Conduit Type Leading Method B Wall Mounting Type and Pressure-resisting Packing Type Leading Method E Self-standing and Pressure-resisting Packing Type Leading Method K Self-standing and Pressure-resisting Sealing Type Leading Method
③	History	The history of the innovation is indicated.
④	Operating Method	H Handle Operating Method No Symbol ... Push Button Operating Method
⑤	No. of Indicating Lamp	Refer to the table of control switches ratings in Page16~17.
⑥	Contacts Arrangement	11 1 NO and 1 NC 20 2 NO
⑦	Changeover Switches	G With Cange-over Switches No Symbol ... Without Change-over Switches

■ COMMON SPECIFICATIONS

- 1.Expllosion-proof Construction : d2G4 (Class)
- 2.Material ... The molded case and Cover : Castrion Type(The molded case and Cover of drawing 18type are Steel Type)
- 3.Ammeter : Provided with a red pointer and three times scale
- 4.The operating push-buttons have indications in English on their surfaces. The color of ON push-button is red and OFF push-button is green.
- 5.The OFF push-button has a locking device.
- 6.Indicating Lamp : Equipped with voltage transformer (Primary side/15V) and bulb of 18V
- 7.Nameplate : For the identification of equipments
- 8.Painting Color :
Internal and External Surfaces of Enclosures : Munsell No.7.5BG6/1.5
- 9.The handle can be locked at the OFF position with a locking pin.
- 10.With drip-proof cover

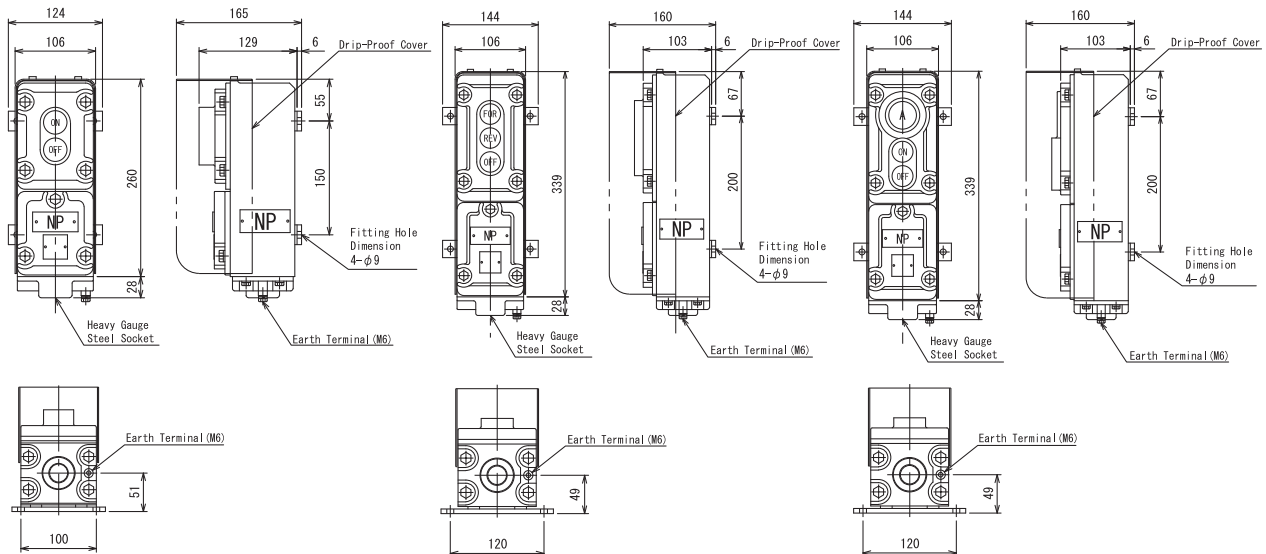
■ CONTROL SWITCHES (with Ammeter) RATINGS

Classification	Type				Dimensions	Wiring No.	Accessories			
	D Wall Mounting Conduit Leading	B Wall Mounting Packing Leading	E Stand Packing Leading	K Stand sealing Leading			Operating Switch	Ammeter	Indicating Lamp	Changeover Switch
Control Switch	CZD — P011	CZB — P011	CZE — P011	CZK — P011	Dwg. 3	W30748	○	○	—	—
	// — P020	// — P020	// — P020	// — P020	Dwg. 3	W30749	○	○	—	—
	// — N011	// — N011	// — N011	// — N011	Dwg. 4	W30748	○	○	—	—
	// — N020	// — N020	// — N020	// — N020	Dwg. 4	W30749	○	○	—	—
	// — N111	// — N111	// — N111	// — N111	Dwg. 8	W31303	○	○	RL	—
	// — N120	// — N120	// — N120	// — N120	Dwg. 8	W31304	○	○	//	—
	// — N211	// — N211	// — N211	// — N211	Dwg. 8	W30759	○	○	GL RL	—
	// — N220	// — N220	// — N220	// — N220	Dwg. 8	W31300	○	○	//	—
	// — NH011	// — NH011	// — NH011	// — NH011	Dwg. 9	W31309	○	○	—	—
	// — NH020	// — NH020	// — NH020	// — NH020	Dwg. 9	W31310	○	○	—	—
	// — QH111	// — QH111	// — QH111	// — QH111	Dwg.13	W31341	○	○	RL	—
	// — QH120	// — QH120	// — QH120	// — QH120	Dwg.13	W31342	○	○	//	—
	// — QH211	// — QH211	// — QH211	// — QH211	Dwg.13	W31311	○	○	GL RL	—
	// — QH220	// — QH220	// — QH220	// — QH220	Dwg.13	W31312	○	○	//	—
	// — QH311	// — QH311	// — QH311	// — QH311	Dwg.13	W31352	○	○	GL OL RL	—
	// — QH320	// — QH320	// — QH320	// — QH320	Dwg.13	W31353	○	○	//	—
	// — Q011G	// — Q011G	// — Q011G	// — Q011G	Dwg.14	W31319- ¹ / ₂ / ₃	○	○	—	○
	// — Q020G	// — Q020G	// — Q020G	// — Q020G	Dwg.14	W31320- ¹ / ₂ / ₃	○	○	—	○
	// — Q021	// — Q021	// — Q021	// — Q021	Dwg.15	W30750	○	○	—	—
	// — Q121	// — Q121	// — Q121	// — Q121	Dwg.16	W31340	○	○	RL	—
	// — Q221	// — Q221	// — Q221	// — Q221	Dwg.16	W30756	○	○	GL RL	—
	// — Q321	// — Q321	// — Q321	// — Q321	Dwg.16	W31337	○	○	GL OL RL	—
	// — Q311	// — Q311	// — Q311	// — Q311	Dwg.16	W31338	○	○	//	—
	// — Q320	// — Q320	// — Q320	// — Q320	Dwg.16	W31339	○	○	//	—
	// — QH311G	// — QH311G	// — QH311G	// — QH311G	Dwg.17	W31354- ¹ / ₂ / ₃	○	○	//	○
	// — QH320G	// — QH320G	// — QH320G	// — QH320G	Dwg.17	W31355- ¹ / ₂ / ₃	○	○	//	○
	// — QH211G	// — QH211G	// — QH211G	// — QH211G	Dwg.17	W31356- ¹ / ₂ / ₃	○	○	GL RL	○
	// — QH220G	// — QH220G	// — QH220G	// — QH220G	Dwg.17	W31357- ¹ / ₂ / ₃	○	○	//	○
	// — QH111G	// — QH111G	// — QH111G	// — QH111G	Dwg.17	W31358- ¹ / ₂ / ₃	○	○	RL	○
	// — QH120G	// — QH120G	// — QH120G	// — QH120G	Dwg.17	W31359- ¹ / ₂ / ₃	○	○	//	○
	// — N111G	// — N111G	// — N111G	// — N111G	Dwg.18	W31334- ¹ / ₂ / ₃	○	○	//	○
	// — N120G	// — N120G	// — N120G	// — N120G	Dwg.18	W31335- ¹ / ₂ / ₃	○	○	//	○
	// — N211G	// — N211G	// — N211G	// — N211G	Dwg.18	W31327- ¹ / ₂ / ₃	○	○	GL RL	○
	// — N220G	// — N220G	// — N220G	// — N220G	Dwg.18	W31328- ¹ / ₂ / ₃	○	○	//	○
	// — N311G	// — N311G	// — N311G	// — N311G	Dwg.18	W31344- ¹ / ₂ / ₃	○	○	GL OL RL	○
	// — N321G	// — N321G	// — N321G	// — N321G	Dwg.18	W31336- ¹ / ₂ / ₃	○	○	//	○

■ CONTROL SWITCHES (without Ammeter) RATINGS

Classification	Type				Dimensions	Wiring No.	Accessories			
	D Wall Mounting Conduit Leading	B Wall Mounting Packing Leading	E Stand Packing Leading	K Stand sealing Leading			Operating Switch	Ammeter	Indicating Lamp	Changeover Switch
Push-Button Switch	PBZD — N10	PBZB — N10	PBZE — N10	PBZK — N10	Dwg. 1	W31346	○	—	—	—
	// — N01	// — N01	// — N01	// — N01	Dwg. 1	W31347	○	—	—	—
	// — N11	// — N11	// — N11	// — N11	Dwg. 1	W30730	○	—	—	—
	// — N20	// — N20	// — N20	// — N20	Dwg. 1	W30731	○	—	—	—
	// — N21	// — N21	// — N21	// — N21	Dwg. 2	W31302	○	—	—	—
Control Switch	PZD — N111	PZB — N111	PZE — N111	PZK — N111	Dwg. 5	W31307	○	—	RL	—
	// — N120	// — N120	// — N120	// — N120	Dwg. 5	W31308	○	—	//	—
	// — N211	// — N211	// — N211	// — N211	Dwg. 5	W30735	○	—	GL RL	—
	// — N220	// — N220	// — N220	// — N220	Dwg. 5	W30737	○	—	//	—
	// — NH111	// — NH111	// — NH111	// — NH111	Dwg. 6	W31315	○	—	RL	—
	// — NH120	// — NH120	// — NH120	// — NH120	Dwg. 6	W31316	○	—	//	—
	// — NH211	// — NH211	// — NH211	// — NH211	Dwg. 6	W31317	○	—	GL RL	—
	// — NH220	// — NH220	// — NH220	// — NH220	Dwg. 6	W31318	○	—	//	—
	// — N011G	// — N011G	// — N011G	// — N011G	Dwg. 7	W31321- ¹ / _{9/10}	○	—	—	○
	// — N020G	// — N020G	// — N020G	// — N020G	Dwg. 7	W31322- ¹ / _{9/10}	○	—	—	○
	// — N111G	// — N111G	// — N111G	// — N111G	Dwg.10	W31323- ¹ / _{9/10}	○	—	RL	○
	// — N120G	// — N120G	// — N120G	// — N120G	Dwg.10	W31324- ¹ / _{9/10}	○	—	//	○
	// — N211G	// — N211G	// — N211G	// — N211G	Dwg.10	W31325- ¹ / _{9/10}	○	—	GL RL	○
	// — N220G	// — N220G	// — N220G	// — N220G	Dwg.10	W31326- ¹ / _{9/10}	○	—	//	○
	// — Q321	// — Q321	// — Q321	// — Q321	Dwg.11	W31343	○	—	GL OL RL	—
	// — Q221	// — Q221	// — Q221	// — Q221	Dwg.11	W31332	○	—	GL RL	—
	// — Q121	// — Q121	// — Q121	// — Q121	Dwg.11	W31349	○	—	RL	—
	// — Q311	// — Q311	// — Q311	// — Q311	Dwg.12	W31350	○	—	GL OL RL	—
	// — Q320	// — Q320	// — Q320	// — Q320	Dwg.12	W31351	○	—	//	—

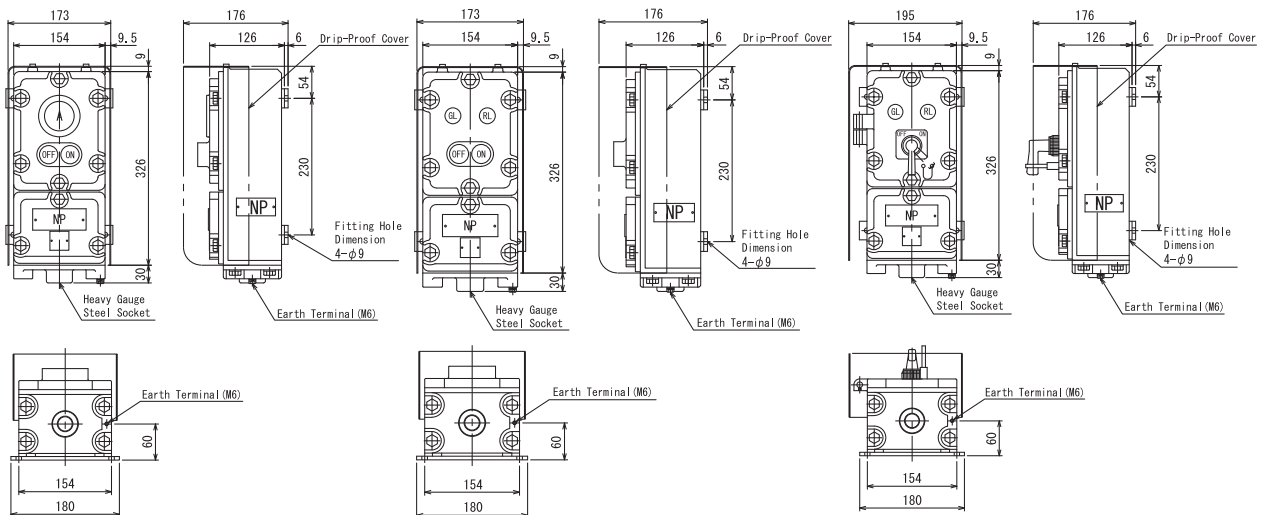
DIMENSIONS (WALL MOUNTING TYPE & HEAVY GAUGE STEEL CONDUIT TYPE LEADING METHOD) ... D TYPE



Dwg. 1 Weight 8kg

Dwg. 2 Weight 11kg

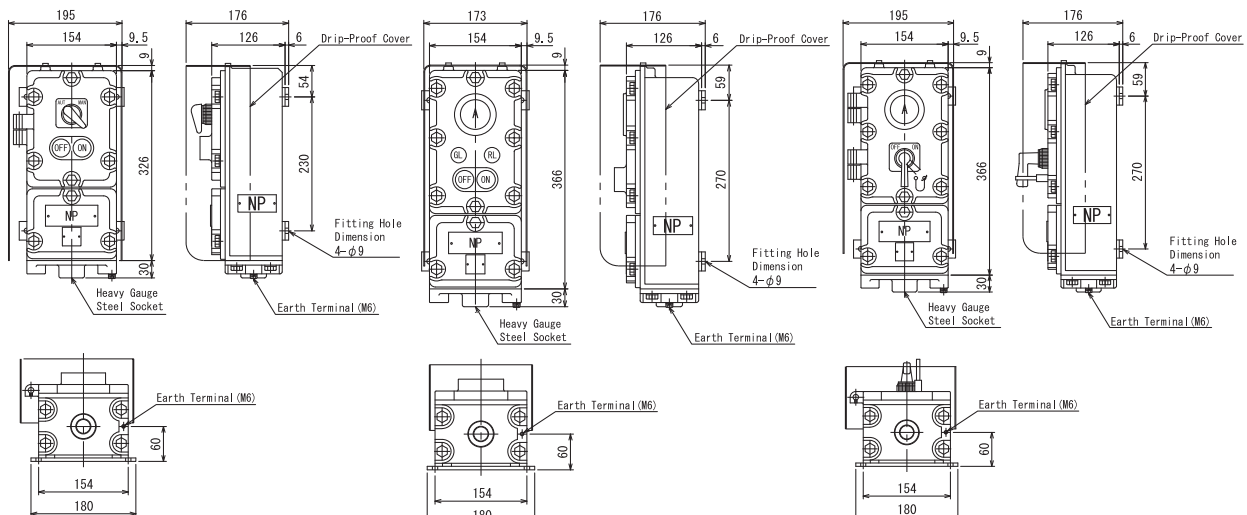
Dwg. 3 Weight 11kg



Dwg. 4 Weight 19kg

Dwg. 5 Weight 19kg

Dwg. 6 Weight 19kg

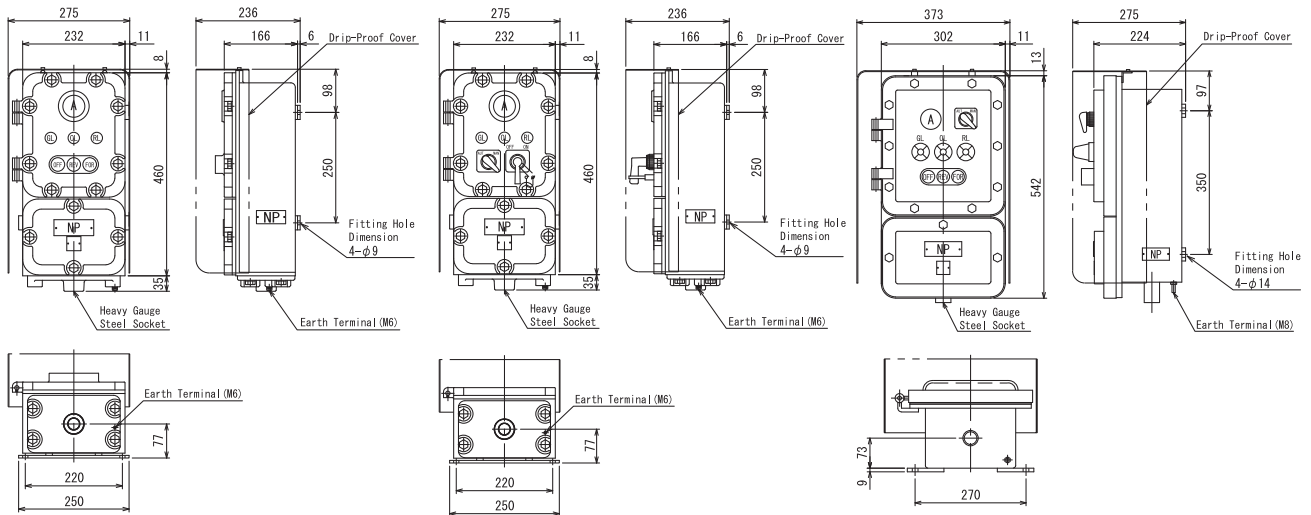
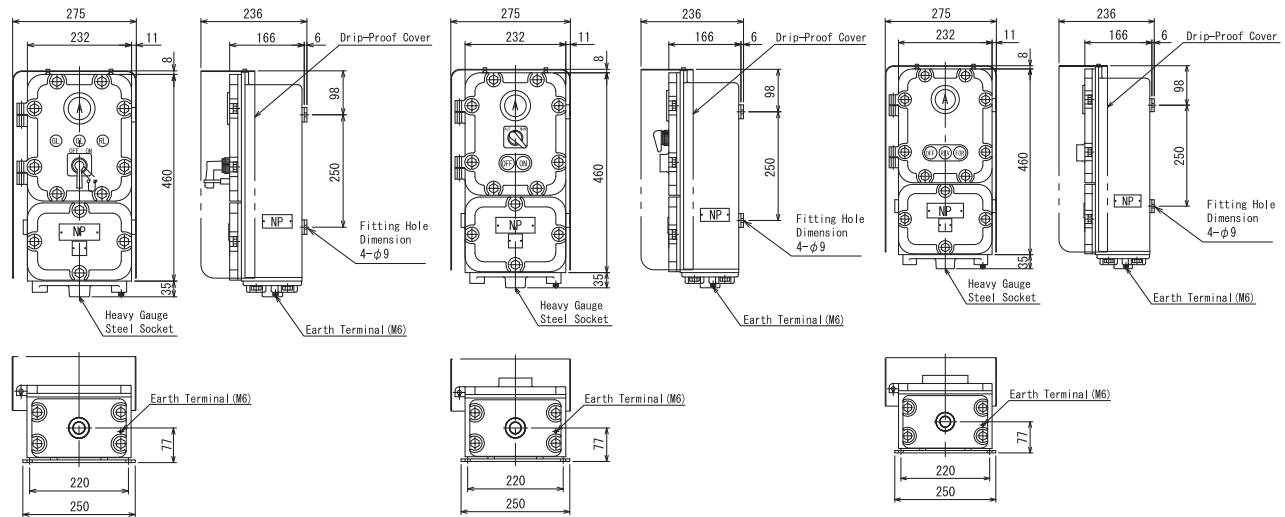
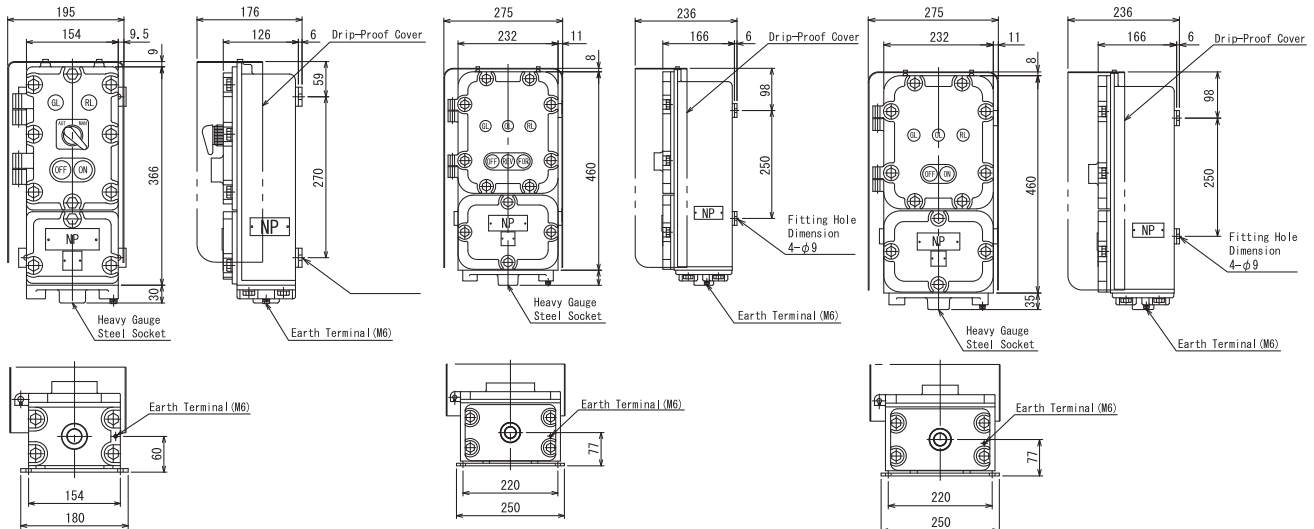


Dwg. 7 Weight 19kg

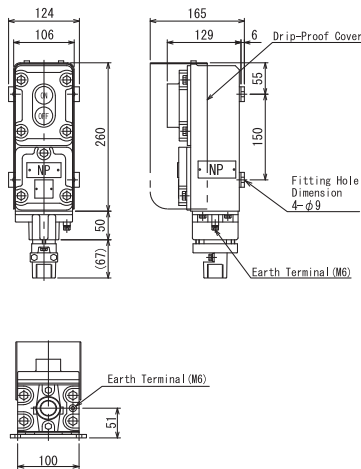
Dwg. 8 Weight 20kg

Dwg. 9 Weight 20kg

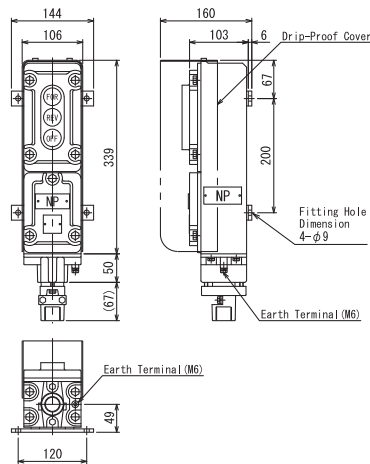
DIMENSIONS (WALL MOUNTING TYPE & HEAVY GAUGE STEEL CONDUIT TYPE LEADING METHOD) ... D TYPE



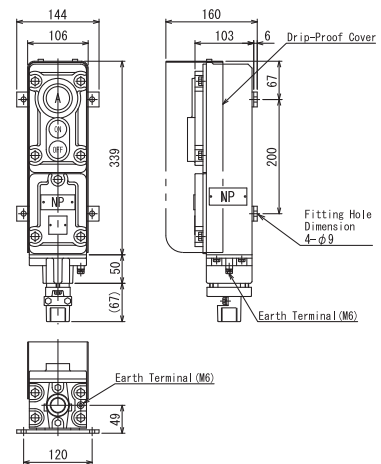
DIMENSIONS (WALL MOUNTING TYPE & PRESSURE-RESISTING PACKING TYPE LEADING METHOD) ... B TYPE



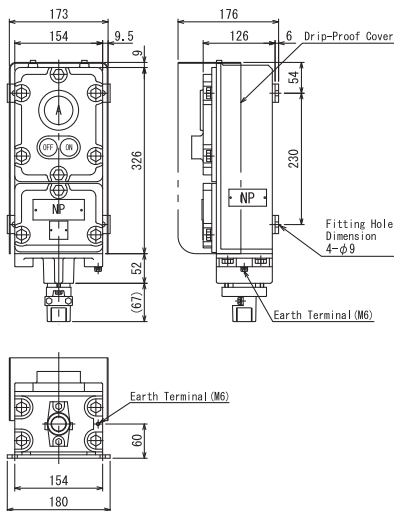
Dwg. 1 Weight 8.5kg



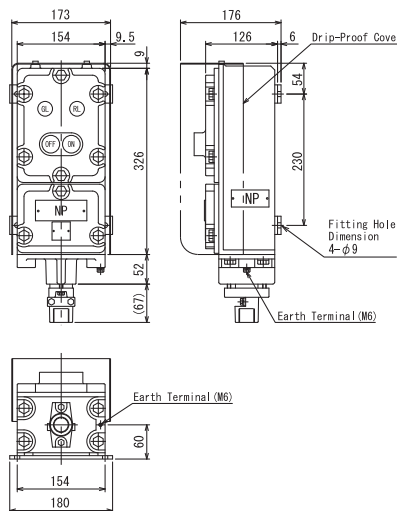
Dwg. 2 Weight 11.5kg



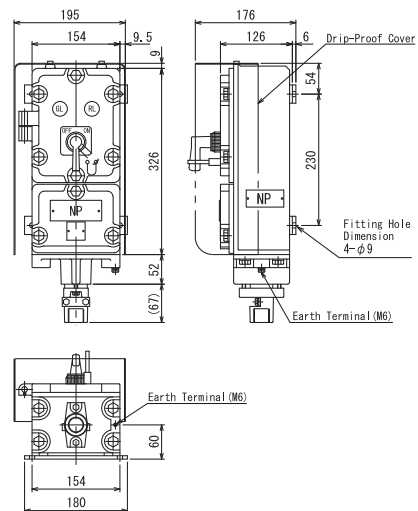
Dwg. 3 Weight 11.5kg



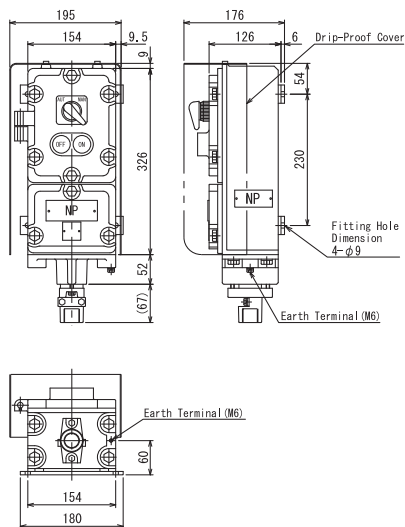
Dwg. 4 Weight 20kg



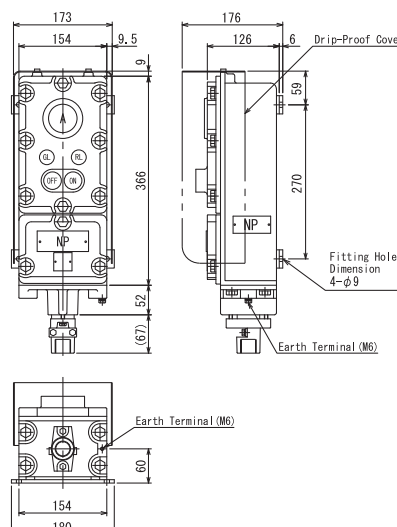
Dwg. 5 Weight 20kg



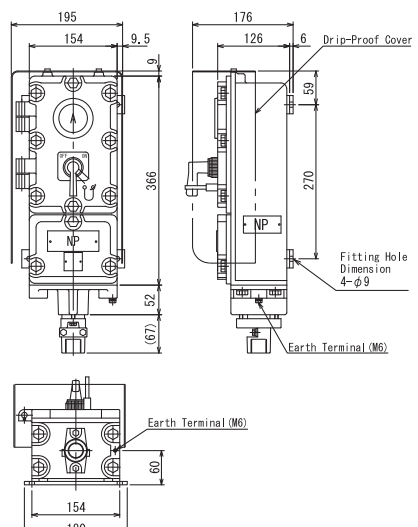
Dwg. 6 Weight 20kg



Dwg. 7 Weight 20kg

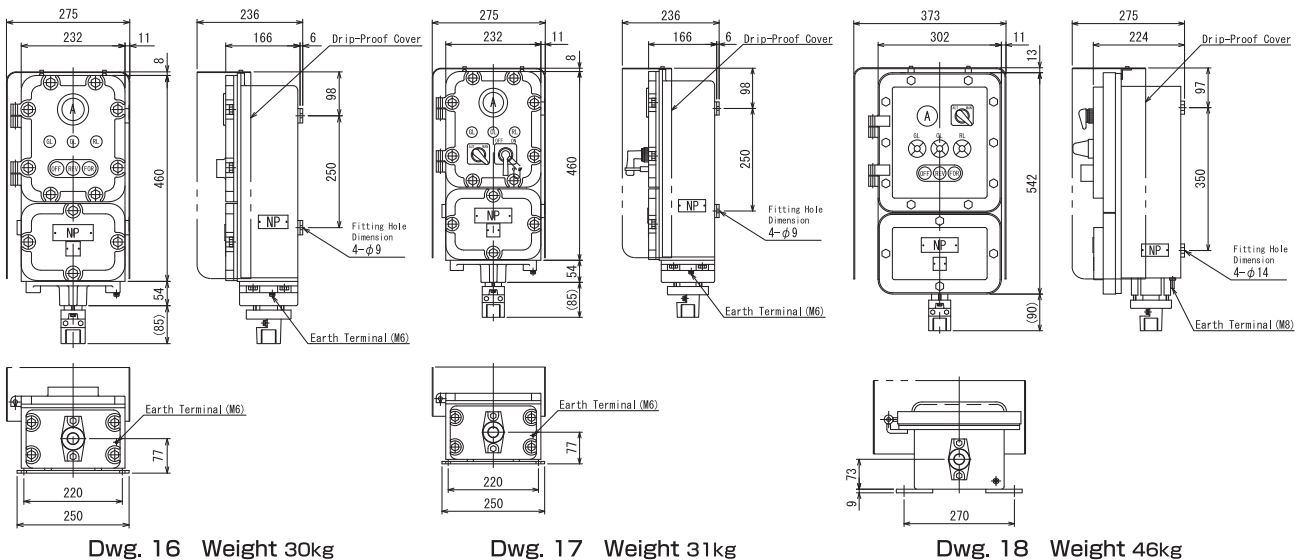
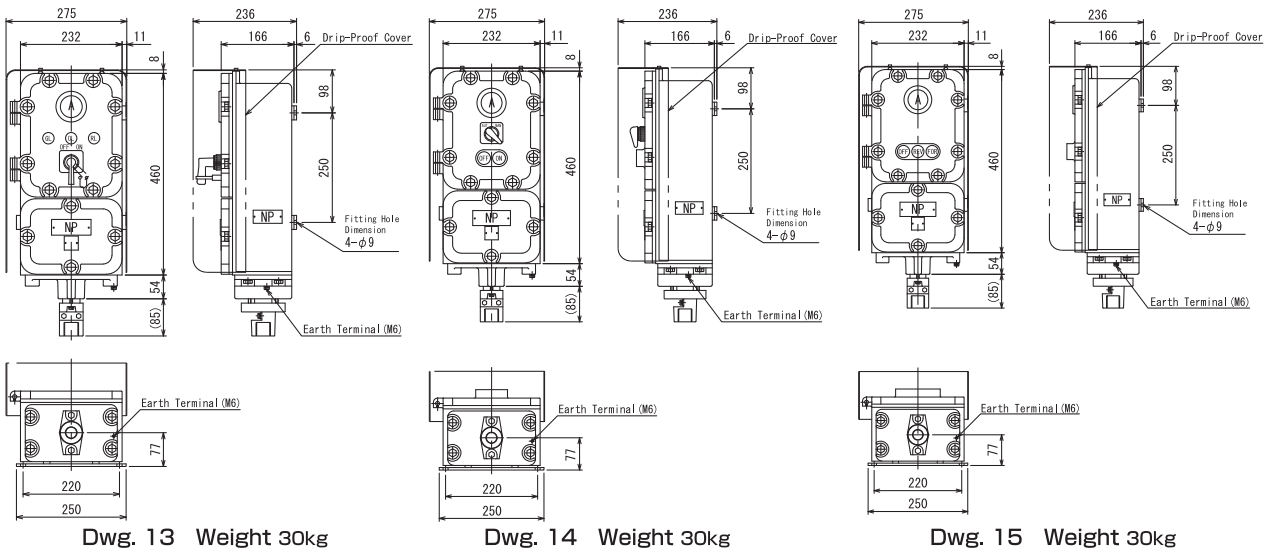
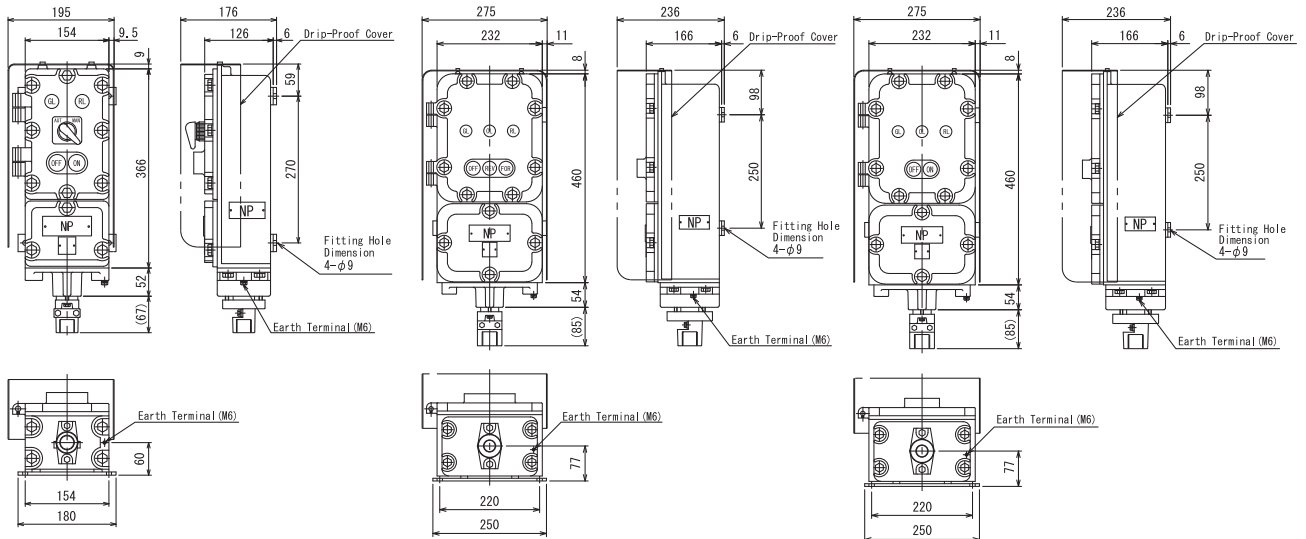


Dwg. 8 Weight 21kg



Dwg. 9 Weight 21kg

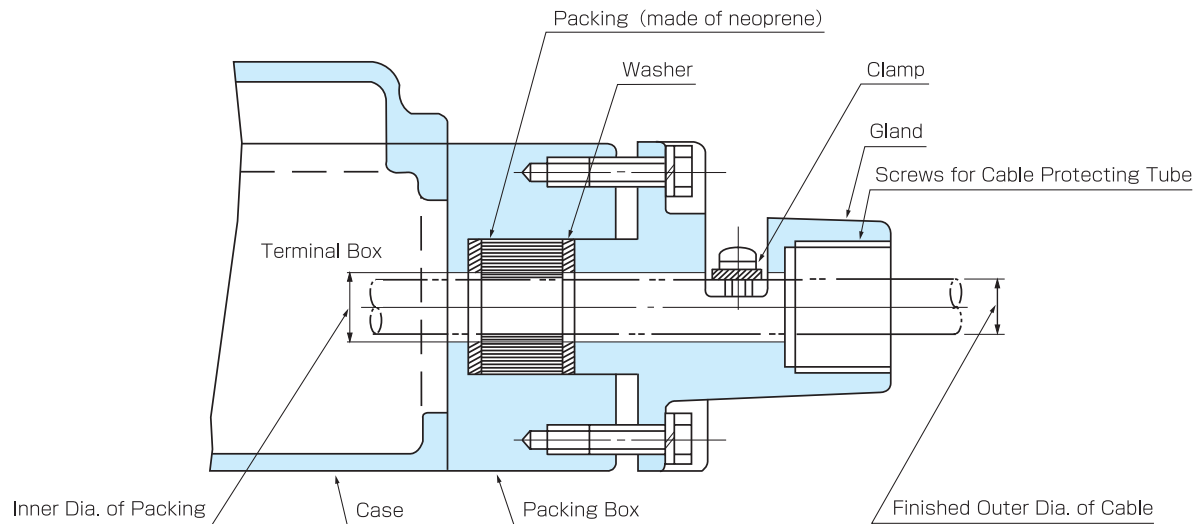
DIMENSIONS (WALL MOUNTING TYPE & PRESSURE-RESISTING PACKING TYPE LEADING METHOD) ... B TYPE



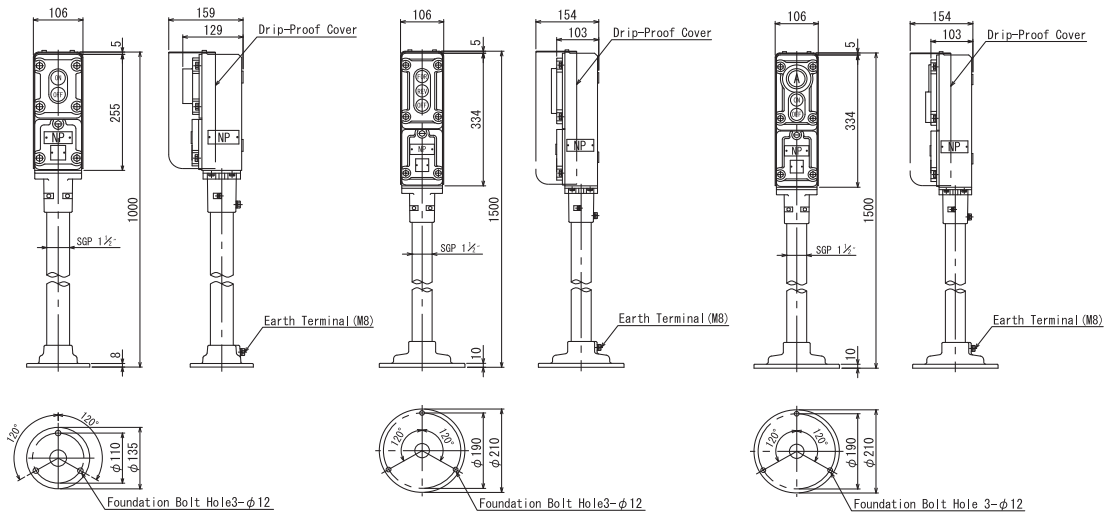
LEADING MOUTH DRAWING (WALL MOUNTING TYPE & PRESSURE-RESISTING PACKING TYPE) ... B TYPE

Inner Dia. of Packing(φ)	Finished Outer Dia. of Applied Cable(φ)	Cable Protecting Tube Size	No. of Leading Mouthes for Applied Types	
			Outside Drawings	Quantity
14	7.5～13	PF ¾ (1)	Dwg. 1 ～ Dwg. 3	1 pcs.
18	13～17	PF1 (¾)		
20	17～19	PF1 (¾・1¼)		
14	7.5～13	PF ¾ (1)	Dwg. 4 ～ Dwg. 10	1 pcs. (2 pcs. possible within red framework)
18	13～17	PF1 (¾)		
20	17～19	PF1 (¾・1¼)		
24	19～23	PF1¼ (1)		
27	23～26			
14	7.5～13	PF ¾ (1)	Dwg. 11 ～ Dwg. 18	1 pcs. (2 pcs. possible within red framework)
18	13～17	PF1 (¾)		
20	17～19	PF1 (¾・1¼)		
24	19～23	PF1¼ (1)		
27	23～26			

Note : The parenthesized size in the cable protecting tube size column may be manufactured when required.



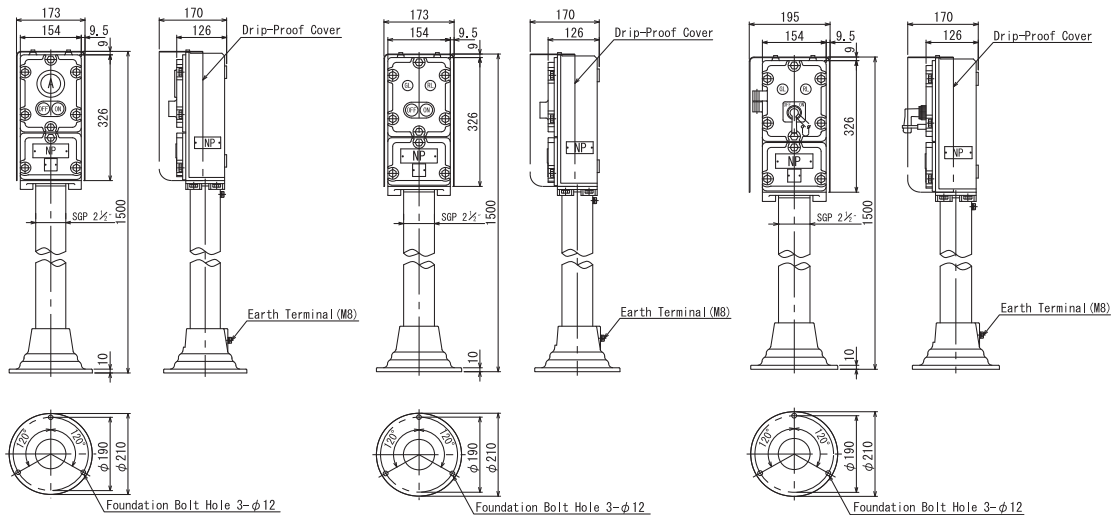
DIMENSIONS (SELF-STANDING & PRESSURE-RESISTING PACKING TYPE LEADING METHOD) ... E TYPE & (SELF-STANDING & PRESSURE-RESISTING SEALING TYPE LEADING METHOD) ... K TYPE



Dwg. 1 Weight 12kg

Dwg. 2 Weight 15kg

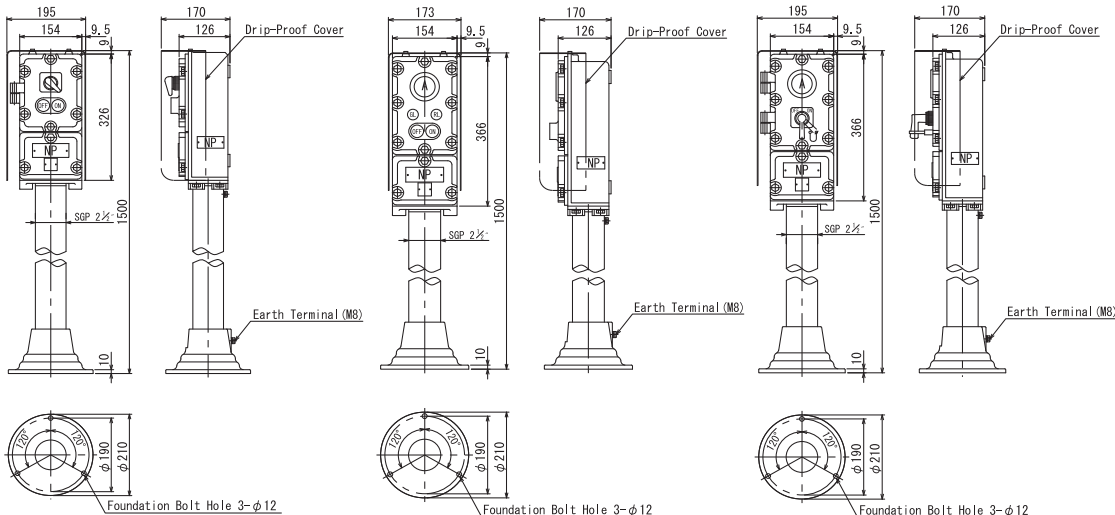
Dwg. 3 Weight 15kg



Dwg. 4 Weight 28kg

Dwg. 5 Weight 28kg

Dwg. 6 Weight 28kg

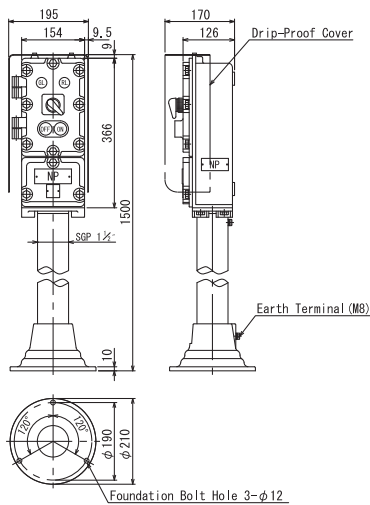


Dwg. 7 Weight 28kg

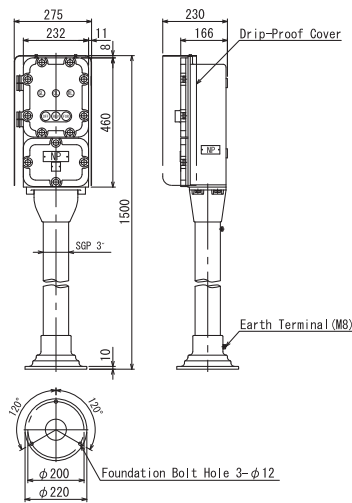
Dwg. 8 Weight 29kg

Dwg. 9 Weight 29kg

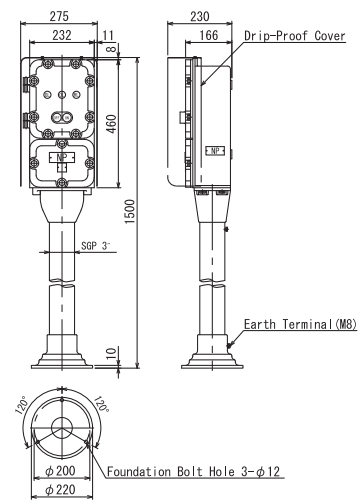
DIMENSIONS (SELF-STANDING & PRESSURE-RESISTING PACKING TYPE LEADING METHOD) ... E TYPE & (SELF-STANDING & PRESSURE-RESISTING SEALING TYPE LEADING METHOD) ... K TYPE



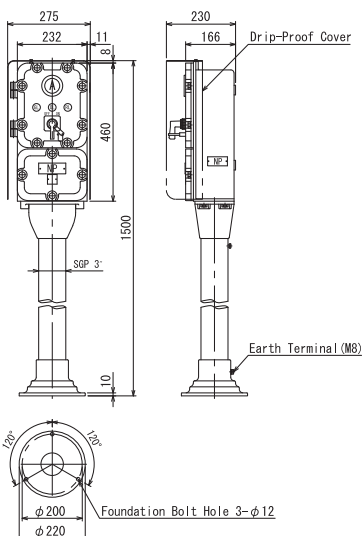
Dwg. 10 Weight 29kg



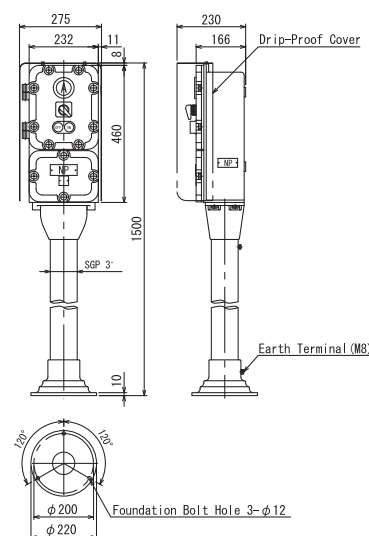
Dwg. 11 Weight 43kg



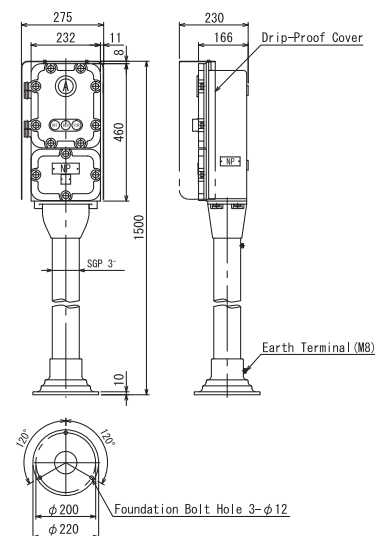
Dwg. 12 Weight 43kg



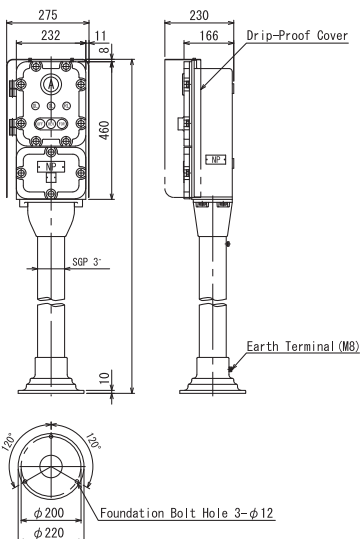
Dwg. 13 Weight 43kg



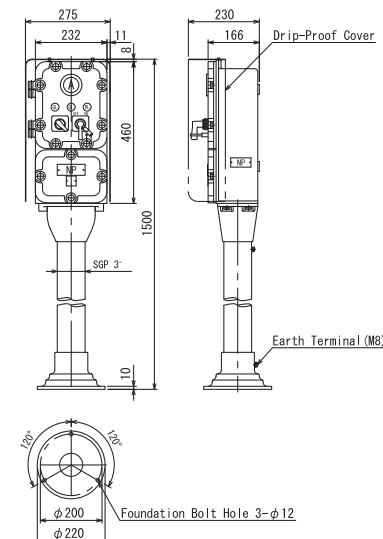
Dwg. 14 Weight 43kg



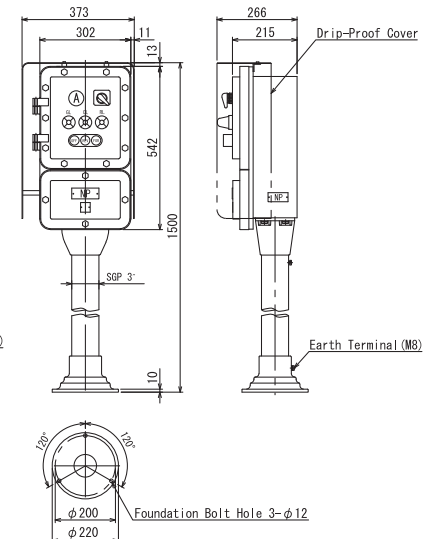
Dwg. 15 Weight 43kg



Dwg. 16 Weight 43kg



Dwg. 17 Weight 44kg



Dwg. 18 Weight 60kg

LEADING MOUTH DRAWING

(SELF-STANDING & PRESSURE-RESISTING TYPE) ... K TYPE

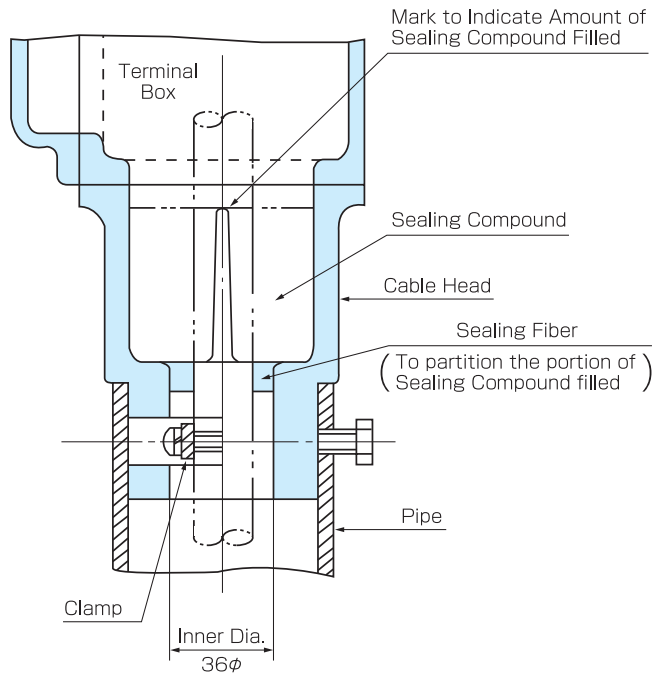


Table of Inner Dia. List

Inner Dia. (φ)	Applicable Types
26	Dwg. 1 ~ Dwg. 3
36	Dwg. 4 ~ Dwg. 10
46	Dwg. 11 ~ Dwg. 18

LEADING MOUTH DRAWING

(SELF-STANDING & PRESSURE-RESISTING PACKING TYPE) ... E TYPE

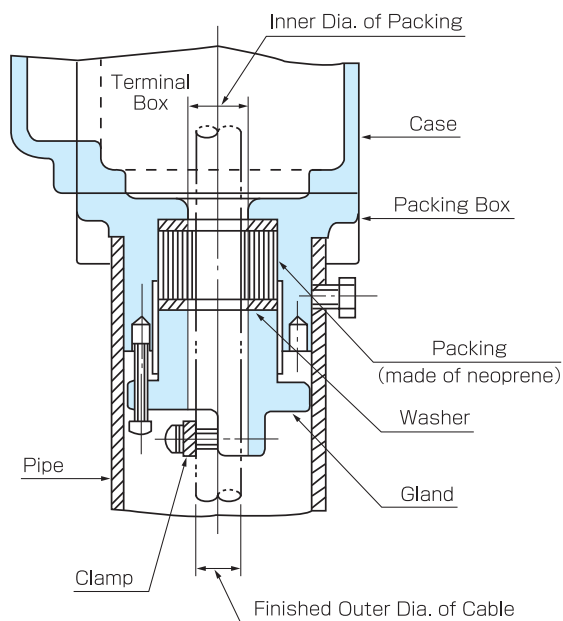
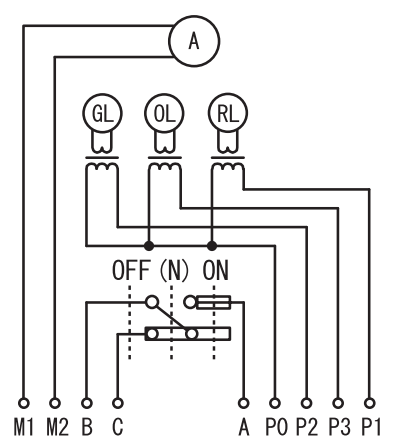
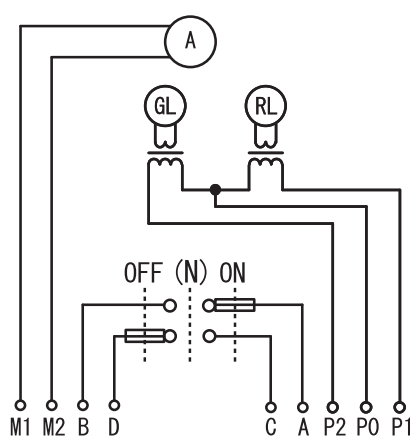
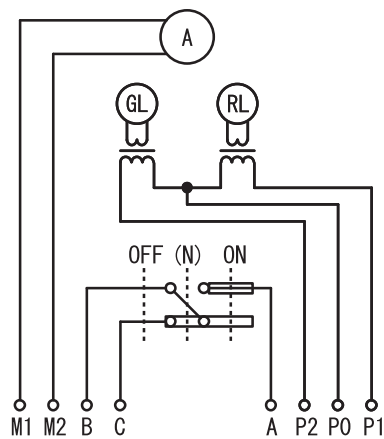
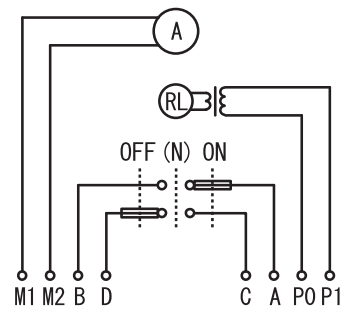
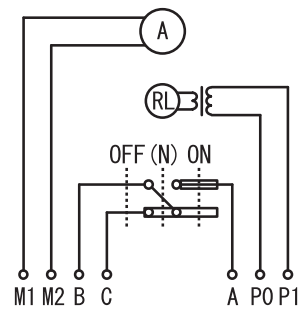
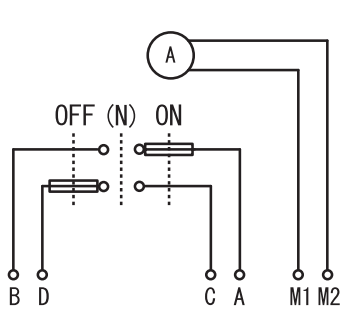
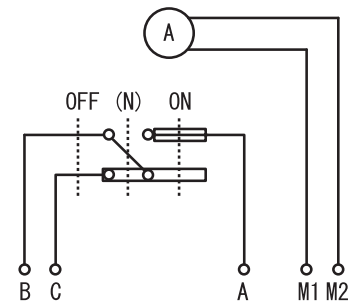
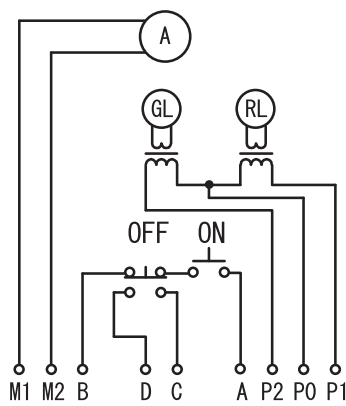
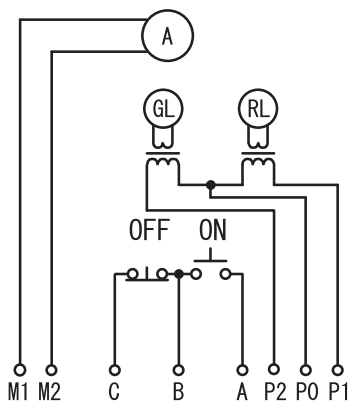
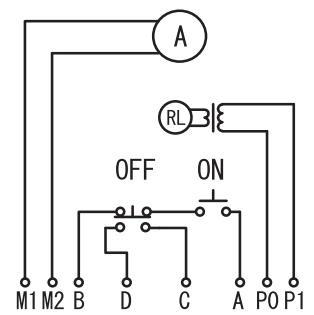
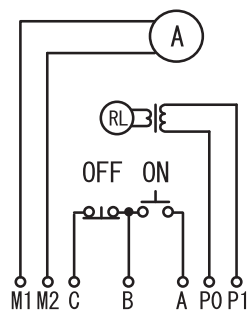
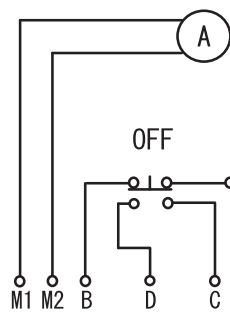
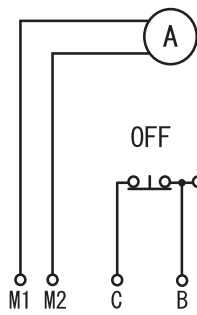


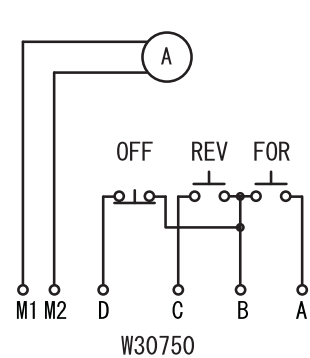
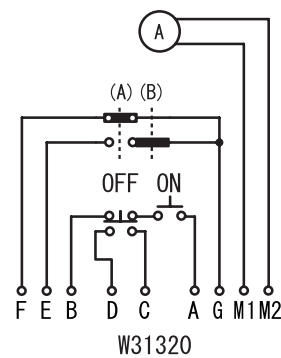
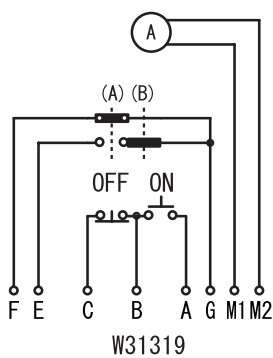
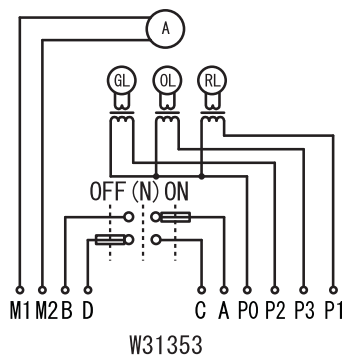
Table of Applicable Cable List

Inner Dia. of Packing (φ)	Outer Dia. of Applicable Cable (φ)	Applied Type (Outside Drawings No.)
14	7.5 ~ 13	The size within gray framework shall be applied to Dwg. No. 1 ~ 10, but regarding to Dwg. No. 11 ~ 18 there is no limit.
18	13 ~ 17	
20	17 ~ 19	
24	19 ~ 23	
27	23 ~ 26	

CZ TYPE WIRING DIAGRAM

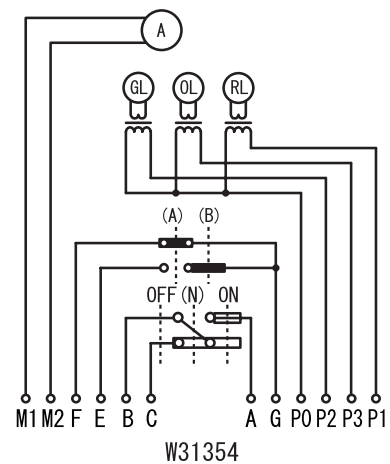
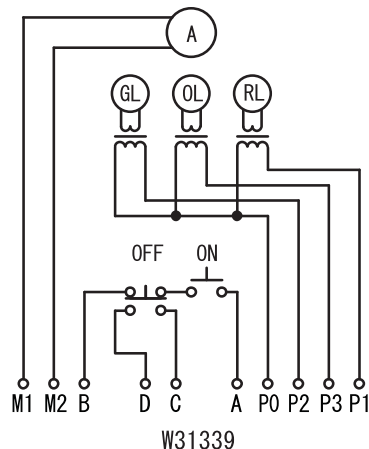
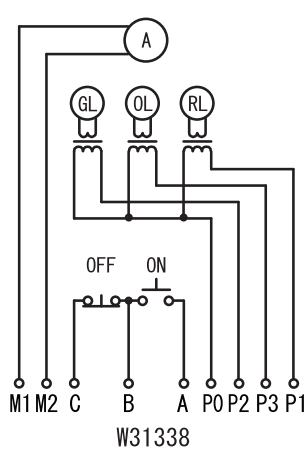
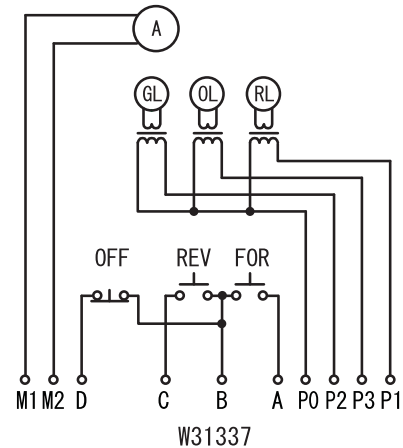
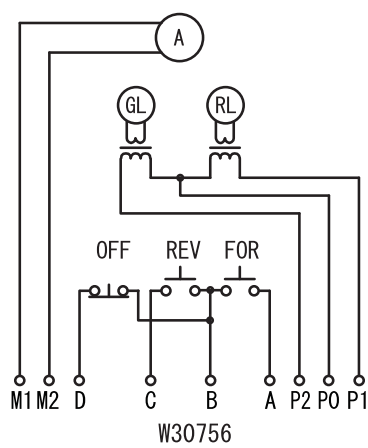
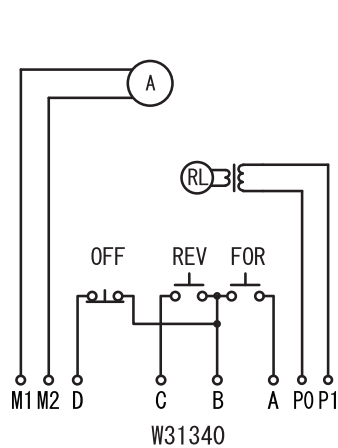


CZ TYPE WIRING DIAGRAM



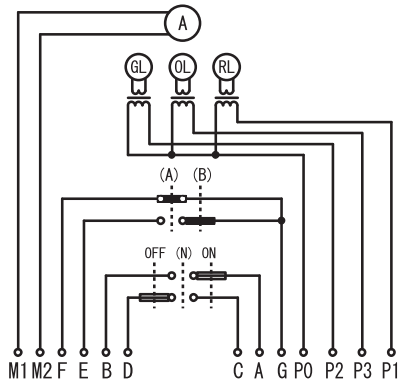
A	B	Wiring Dwg.
Auto	Manual	W 31319-1
Interlock	Single	W 31319-2
Remote	Direct	W 31319-3

A	B	Wiring Dwg.
Auto	Manual	W 31320-1
Interlock	Single	W 31320-2
Remote	Direct	W 31320-3



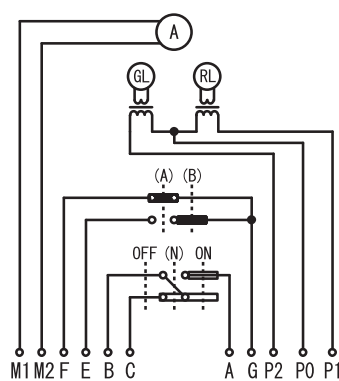
A	B	Wiring Dwg.
Auto	Manual	W 31354-1
Interlock	Single	W 31354-2
Remote	Direct	W 31354-3

CZ TYPE WIRING DIAGRAM



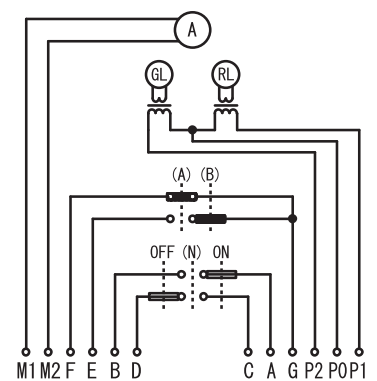
W31355

A	B	Wiring Dwg.
Auto	Manual	W 31355-1
Interlock	Single	W 31355-2
Remote	Direct	W 31355-3



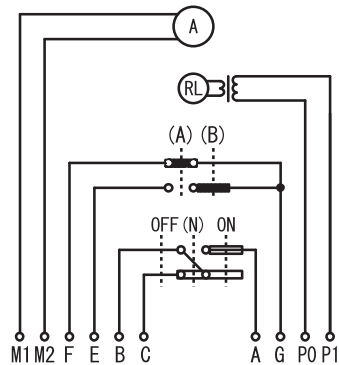
W31356

A	B	Wiring Dwg.
Auto	Manual	W 31356-1
Interlock	Single	W 31356-2
Remote	Direct	W 31356-3



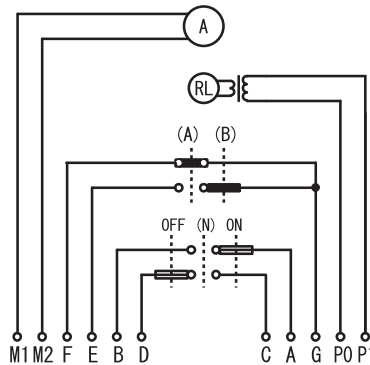
W31357

A	B	Wiring Dwg.
Auto	Manual	W 31357-1
Interlock	Single	W 31357-2
Remote	Direct	W 31357-3



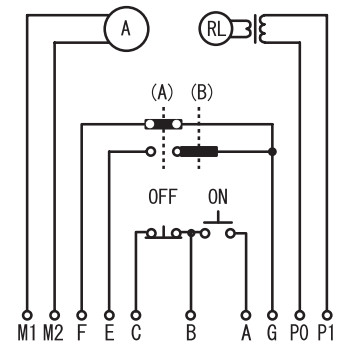
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A	B	Wiring Dwg.
Auto	Manual	W 31358-1
Interlock	Single	W 31358-2
Remote	Direct	W 31358-3



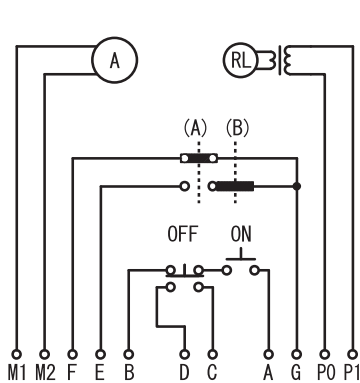
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A	B	Wiring Dwg.
Auto	Manual	W 31359-1
Interlock	Single	W 31359-2
Remote	Direct	W 31359-3



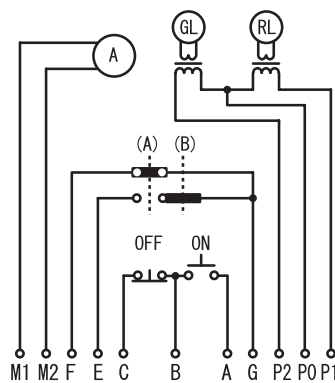
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A	B	Wiring Dwg.
Auto	Manual	W 31334-1
Interlock	Single	W 31334-2
Remote	Direct	W 31334-3



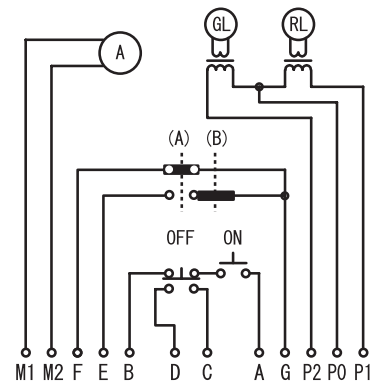
W31335

A	B	Wiring Dwg.
Auto	Manual	W 31335-1
Interlock	Single	W 31335-2
Remote	Direct	W 31335-3



W31327

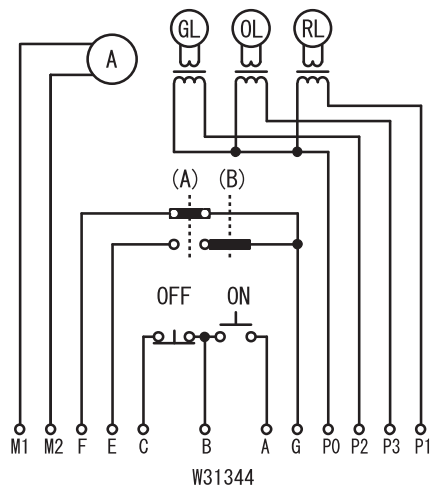
A	B	Wiring Dwg.
Auto	Manual	W 31327-1
Interlock	Single	W 31327-2
Remote	Direct	W 31327-3



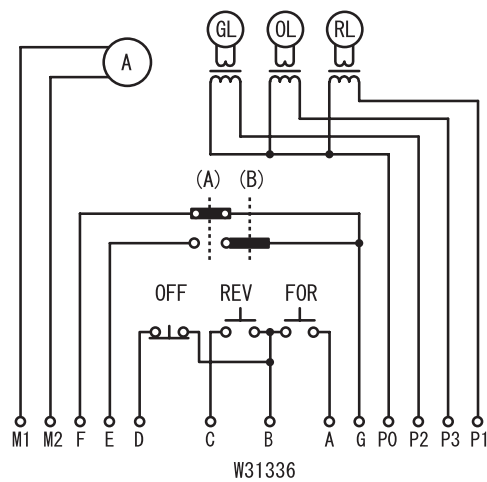
W31328

A	B	Wiring Dwg.
Auto	Manual	W 31328-1
Interlock	Single	W 31328-2
Remote	Direct	W 31328-3

CZ TYPE WIRING DIAGRAM

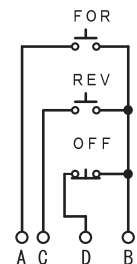
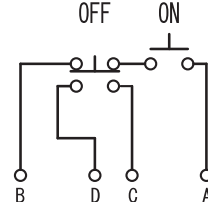
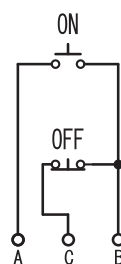
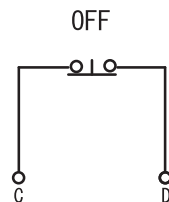
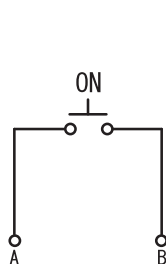


A	B	Wiring Dwg.
Auto	Manual	W 31344-1
Interlock	Single	W 31344-2
Remote	Direct	W 31344-3

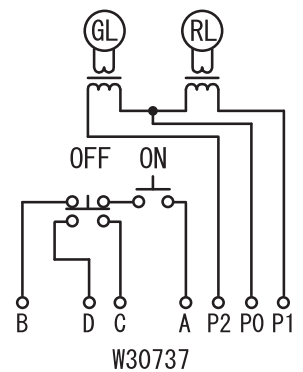
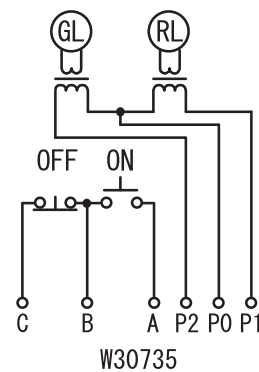
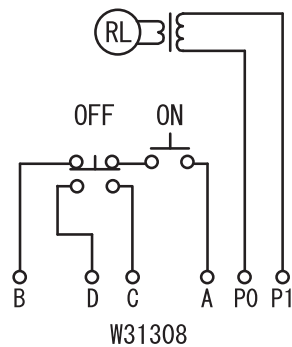
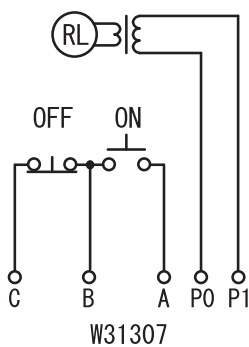


A	B	Wiring Dwg.
Auto	Manual	W 31336-1
Interlock	Single	W 31336-2
Remote	Direct	W 31336-3

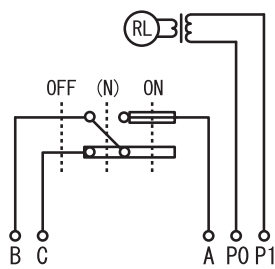
PBZ TYPE WIRING DIAGRAM



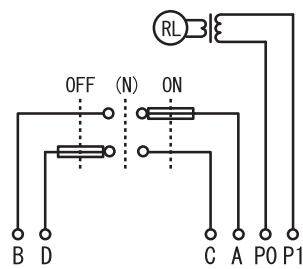
PZ TYPE WIRING DIAGRAM



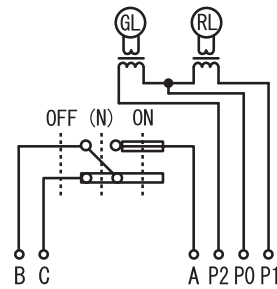
PZ TYPE WIRING DIAGRAM



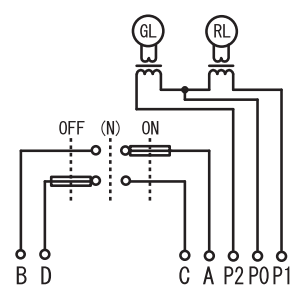
W31315



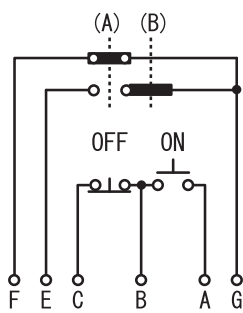
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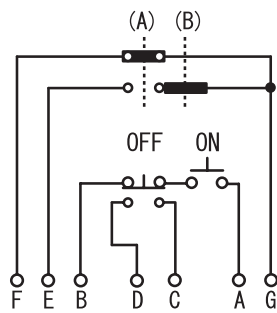
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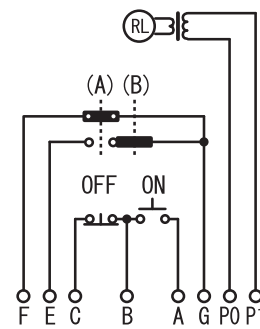
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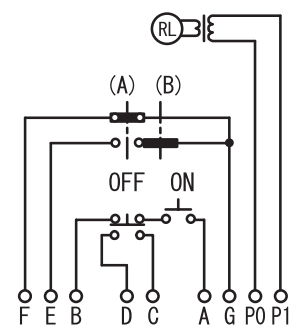
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W31322



W31323



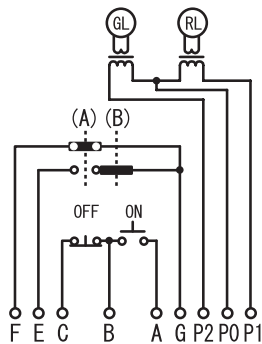
W31324

A	B	Wiring Dwg.
Auto	Manual	W 31321-1
Interlock	Single	W 31321-2
Remote	Direct	W 31321-3

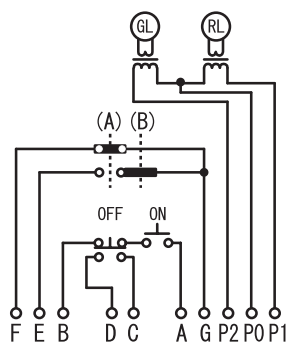
A	B	Wiring Dwg.
Auto	Manual	W 31322-1
Interlock	Single	W 31322-2
Remote	Direct	W 31322-3

A	B	Wiring Dwg.
Auto	Manual	W 31323-1
Interlock	Single	W 31323-2
Remote	Direct	W 31323-3

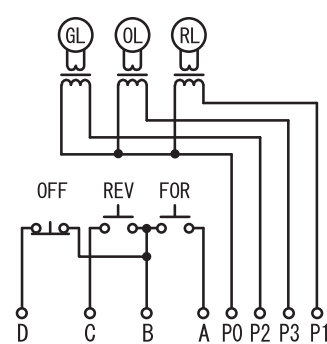
A	B	Wiring Dwg.
Auto	Manual	W 31324-1
Interlock	Single	W 31324-2
Remote	Direct	W 31324-3



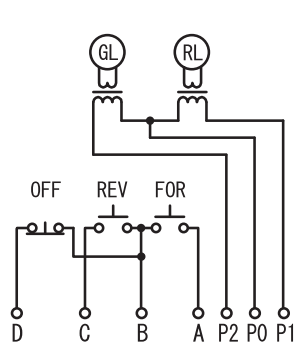
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W31326



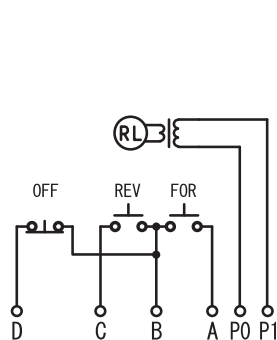
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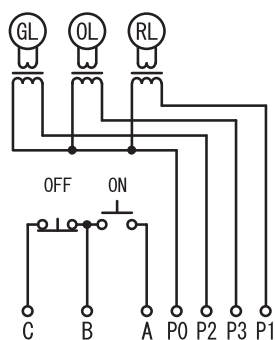
W31332

A	B	Wiring Dwg.
Auto	Manual	W 31325-1
Interlock	Single	W 31325-2
Remote	Direct	W 31325-3

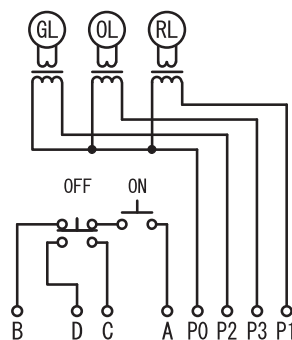
A	B	Wiring Dwg.
Auto	Manual	W 31326-1
Interlock	Single	W 31326-2
Remote	Direct	W 31326-3



W31349

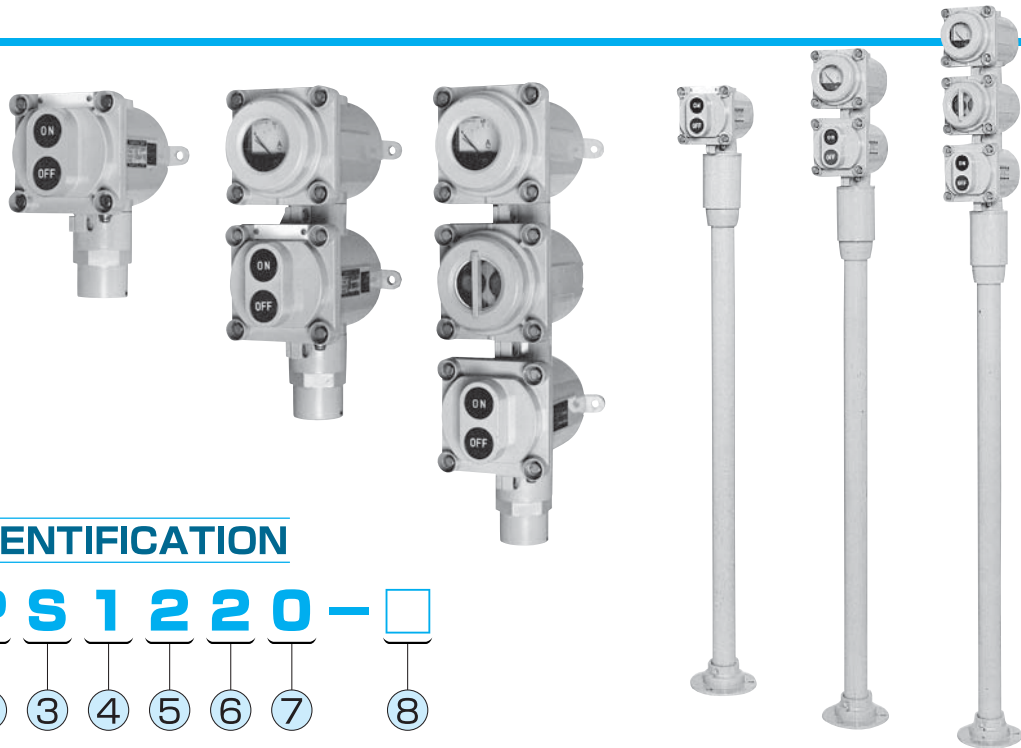


W31350



W31351

EXPLOSION-PROOF TYPE CONTROL SWITCHES



CODE IDENTIFICATION

E P S 1 2 2 0 - □

① ② ③ ④ ⑤ ⑥ ⑦ ⑧

Order	Indication	Description	
①	Grade of Explosion Protected	H d3aG5 (Water gas and Hydrogen area)	E d2G5 (Division 1 and 2 area)
②	Leading Method	P Pressure-resisting Packing type	P Pressure-resisting Packing type D Threaded joint steel conduit leading type (Which is not applicable in case of Pillar type)
③	Installation	S Pillar type W Wall mounting type	
④	Meter	1 Quantity of Meter	("0" Shall be indicated if it's not required)
⑤	Indicating Lamp	2 Quantity of Indicating lamp	(//)
⑥	Push-button Switch	2 Quantity of Push-button switch	(//)
⑦	Select Switch	0 Quantity of Change-over switch	(//)
⑧	Special Specification	L "OFF" locking device R Rubber cover of Push-button	V Sunshade cover Z Special Wiring · Terminal No. Special

Note : Leading method Type D is not applicable for pillar type.

SPECIFICATIONS

Model	EPS, EPW, EDW	HPS, HPW
Explosion-proof Performance	d2G5 (Division 1 and 2 area)	d3aG5 (Water gas and Hydrogen area)
Water-proof Performance	Explosion-proof for out door (Technical guide RIIS-TR-79-1)	
Explosion-proof Construction	Explosion-proof	Explosion-proof (Hydrogen gas correspondence)
Material (case)	Aluminium alloy type	
Rated Insulation Voltage	AC, DC 250V	
Insulation Resistance	More than 5 MΩ (by DC 500V megger)	
Withstand Voltage	1500V for 1 minute	
Standard Service Condition (Technical guide RIIS-TR-79-1)	Sea level : up to 1000m Ambient temperature : -10~40℃ Relative humidity : 45~85%	
Painting Color	Munsell No. N7 for outer face	

SPECIFICATIONS (CONTROL UNIT)

Control Unit		Specification	
Meter (1)	Ammeter	60□, Threetime scale, with a red pointer / A or/5A with CT rate (But, it's direct retirement possible to 30A.)	
	Voltmeter	60□, 150V or 300V	
Push-button Switch (Model : PB-H11) (2)		Rated Current	10A
		Operating Current	AC 220V-5A DC 110V-1.3A (Lagging load)
		Color	Standard : Black (on) -Red (off) By request : Red (on) -Green (off)
		Letter	ON - OFF
		Contact	ON...1 NO and 1 NC OFF...1 NO and 1 NC
Changeover Switch (Model : TS-H11)		Notch	2 or 3
		Rated Current	10A
		Operating Current	AC 220V-5A DC 110V-1.3A (Lagging load)
		Color	Black
		Letter	Standard : REM-DIR, AUT-MAN, AUT-OFF-MAN By request : No.1-No.2
		Contact	1 NO and 1 NC
Indicating Lamp		Bulb	LED
		Color	Red, Green, Orange, White or Clarity
		Voltage	AC·DC 100V 200V 110V 220V

Note : (1) It's possible to manufacture DC ammeter, a DC voltmeter and a rev counter.
(2) ★ "OFF" locking device

●Standard

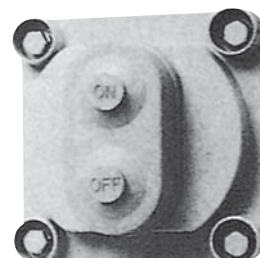
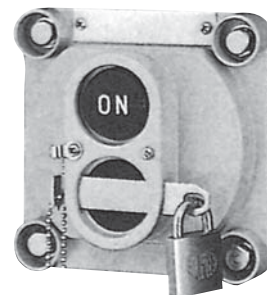
Push-button has an "OFF" locking device to prevent maloperation.
For locking, push-turn 90° to right or left side.

●By request

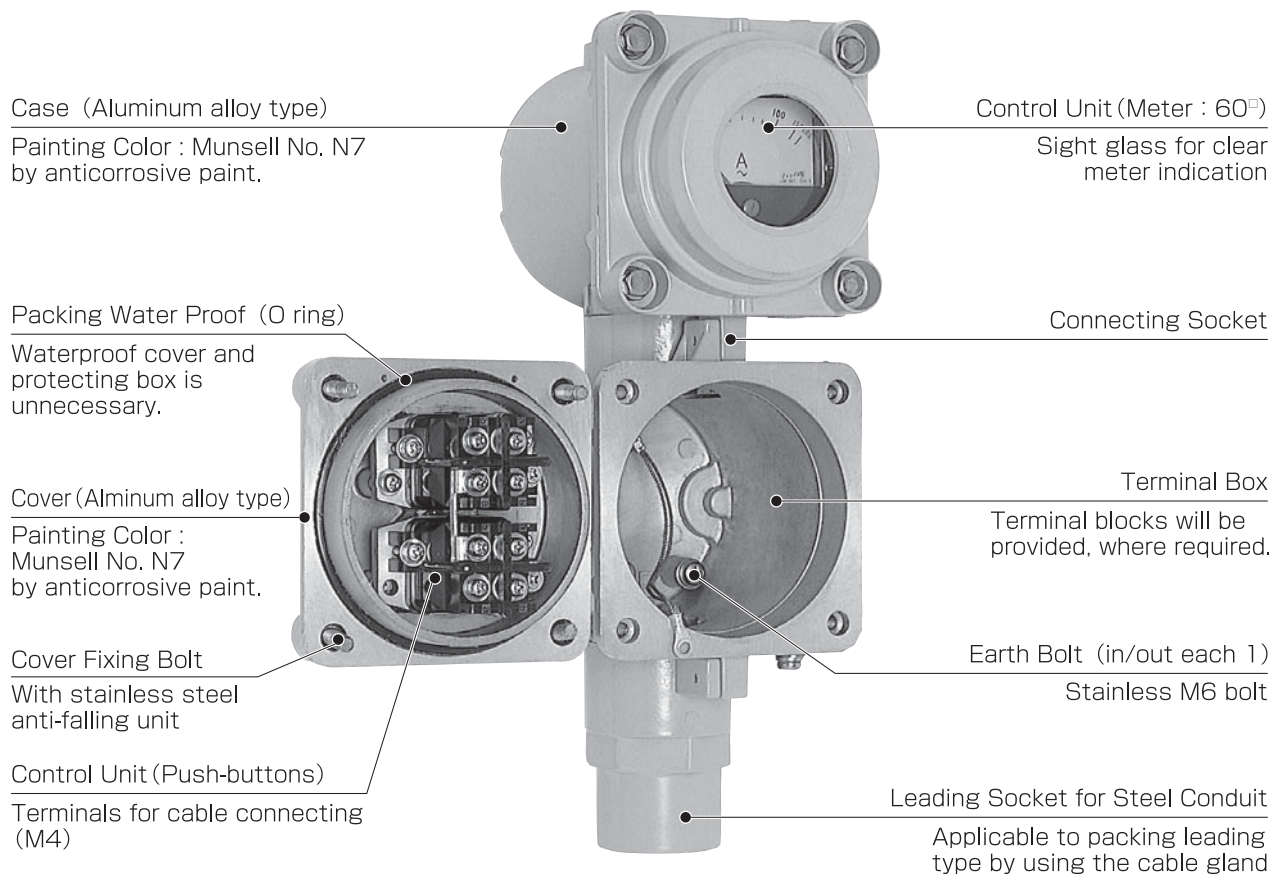
Padlocking device will be provided, where required. For padlocking, through the locking plate on the push-button switch then apply the padlock into the hole of the locking plate. (Pad lock for general purpose is applicable.)

★Protection Cover

To prevent the button from adhesion and penetration of dust and foreign matters and from prenatration of seawater.
Material : EPDM Painting Color : Gray



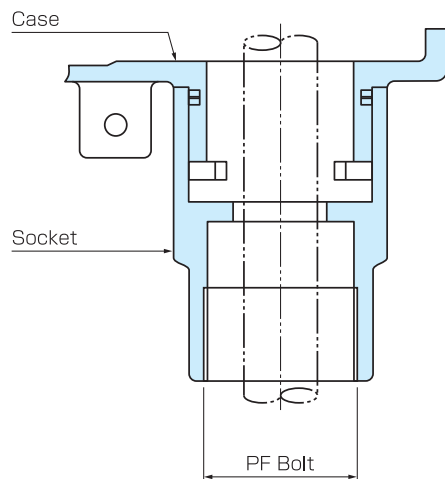
■ CONSTRUCTION



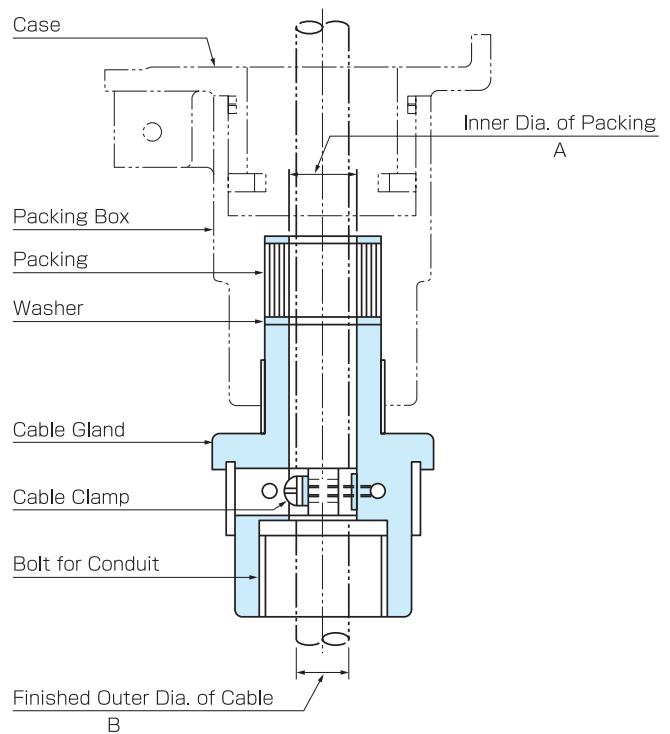
■ DETAIL OF LEADINGS

For wall mounting type

● Threaded joint steel conduit leading type

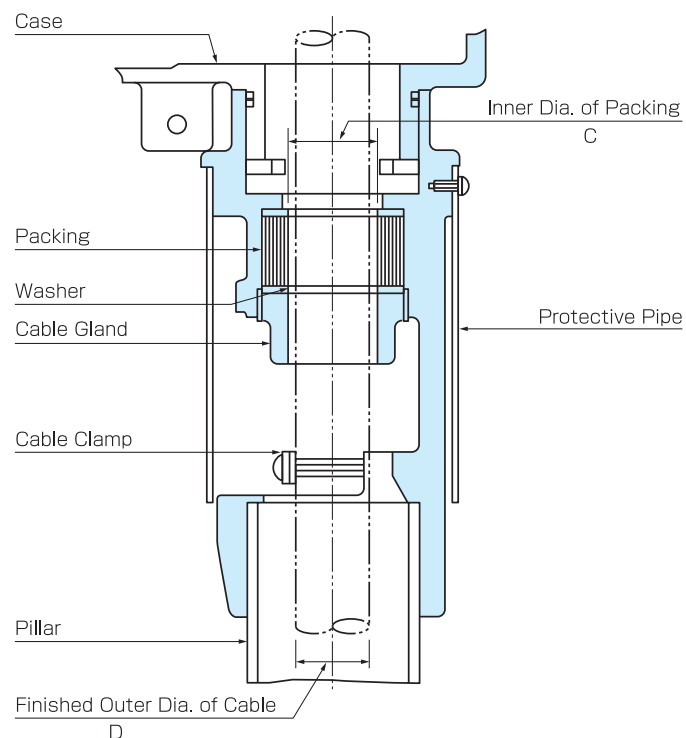


● Pressure-resisting packing leading type



For pillar type

● Pressure-resisting packing leading type



LEADING METHODS

Leading Method The Mehod of Installation	Threaded Joint Steel Conduit Leading Type	Pressure-resisting Packing Type				
	Wall mounting type (PF bolt)	Wall mounting type			Pillar type	
		A Inner Dia. of Packing (ϕ)	B Outer Dia. of Applicable Cable (ϕ)	Conduit Size	C Inner Dia. of Packing (ϕ)	D Outer Dia. of Applicable Cable (ϕ)
TYPE 1 TYPE 2	Standard size PF ¾ × 1 PF 1 × 1 Maximum size PF 1¼ × 1	14	9 ~ 13	PF ¾ (1)	14	9 ~ 13
		16	13 ~ 15		16	13 ~ 15
21		15 ~ 20	PF 1 (1 ¼)	21	15 ~ 20	
TYPE 3		14	9 ~ 13	PF ¾	14	9 ~ 13
		16	13 ~ 15	PF 1 (¾)	16	13 ~ 15
		21	15 ~ 20	PF 1¼ (1)	21	15 ~ 20
		24	20 ~ 23		24	20 ~ 23

Note : (1) Conduit size in the bracket () is able to provide, where required.
 (2) Leading method of flameproof type d3aG5 should be Pressure-resisting packing type.

SPECIFICATIONS LIST <FOR CASE TYPE1>

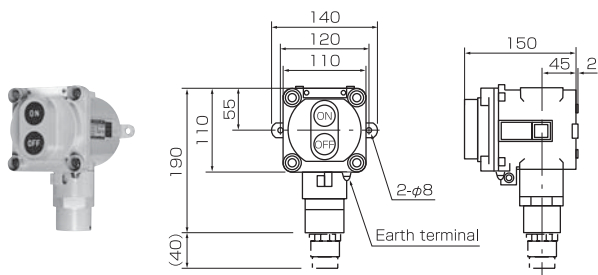
Grade of Explosion Protected	Model			Quantity of Equipment				Inner Dia. of Packing	Conduit Size	No.
	Pillar Pressure-resisting Packing Leading	Wall Mounting Pressure-resisting Packing Leading	Wall Mounting Conduit Leading	Meter	Indicating Lamp	Push-button Switch	Changeover Switch			
EPS, EPW, EDW d2G5 Division 1 and 2 area	E P S 0010	E P W 0010	E D W 0010	—	—	1	—	φ 14	P F ¾	①
	// 0001	// 0001	// 0001	—	—	—	1	//	//	②
	// 0100	// 0100	// 0100	—	1	—	—	//	//	③
	// 0020	// 0020	// 0020	—	—	2	—	//	//	④
	// 0011	// 0011	// 0011	—	—	1	1	//	//	⑤
	// 0002	// 0002	// 0002	—	—	—	2	//	//	⑥
	// 0200	// 0200	// 0200	—	2	—	—	//	//	⑦
	// 1000	// 1000	// 1000	1	—	—	—	//	//	⑧
HPS, HPW d3aG5 Water gas and Hydrogen area	H P S 0010	H P W 0010		—	—	1	—	φ 14		①
	// 0001	// 0001		—	—	—	1	//		②
	// 0100	// 0100		—	1	—	—	//		③
	// 0020	// 0020		—	—	2	—	//		④
	// 0011	// 0011		—	—	1	1	//		⑤
	// 0002	// 0002		—	—	—	2	//		⑥
	// 0200	// 0200		—	2	—	—	//		⑦
	// 1000	// 1000		1	—	—	—	//		⑧

DIMENSIONS AND ARRANGEMENT <FOR CASE TYPE 1>

Note : (1) Symbol ○...Push-button switch ⊗...Select switch ⊙...Indicating lamp Ⓐ...Meter

No.	①	②	③	④
Arrangement (1)				
Wiring				
No.	⑤	⑥	⑦	⑧
Arrangement (1)				
Wiring				

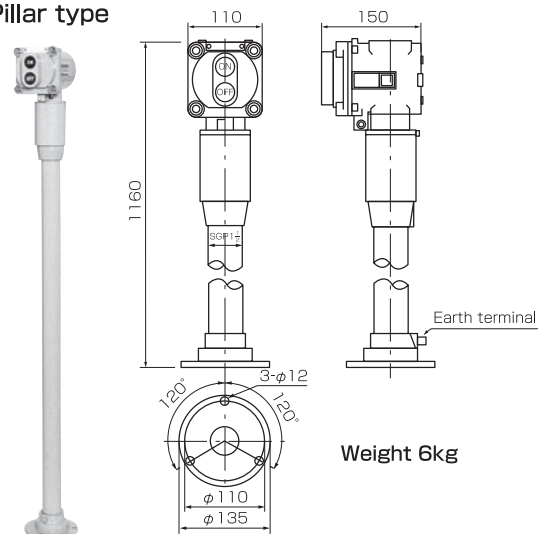
● Wall mounting type



Weight 2.5kg

Numeral in the bracket () shows dimension for packing leading type.

● Pillar type



Weight 6kg

Note : EPS, EPW, EDW (applied to division 1 and 2 area), HPS, HPW (applied to water gas and hydrogen area) are the same dimension.

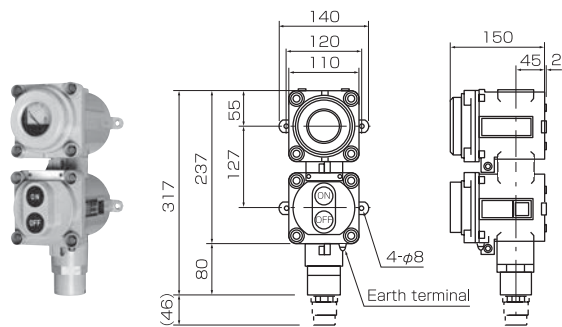
DIMENSIONS AND ARRANGEMENT <FOR CASE TYPE2>

Note : (1) Symbol ○...Push-button switch ◯...Changeover switch ⊙...Indicating lamp Ⓐ...Meter

No.	⑨	⑩	⑪	⑫	⑬	⑭
Arrangement (1)						
Wiring						

No.	⑮	⑯	⑰	⑱	⑲	⑳
Arrangement (1)						
Wiring						

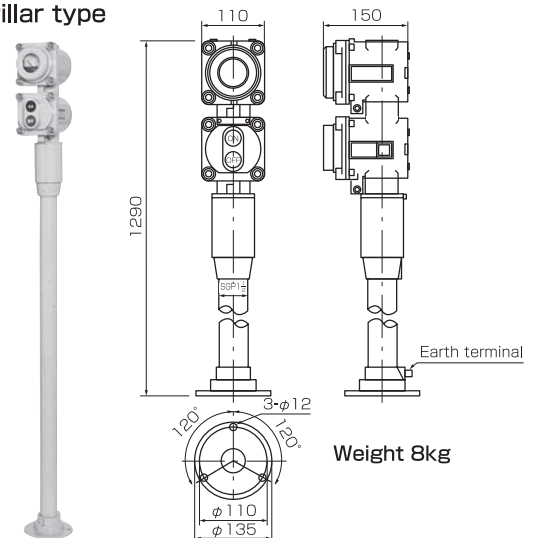
● Wall mounting type



Weight 4.5kg

Numerals in the bracket () shows dimension for packing leading type.

● Pillar type



Weight 8kg

Note : EPS, EPW, EDW (applied to division 1 and 2 area), HPS, HPW (applied to water gas and hydrogen area) are the same dimension.

SPECIFICATIONS LIST <FOR CASE TYPE2>

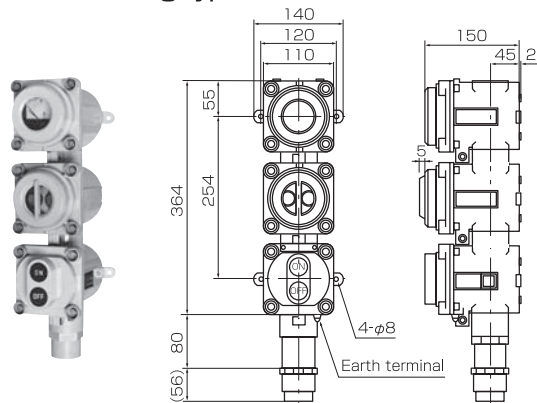
Grade of Explosion Protected	Model			Quantity of Equipment				Inner Dia. of Packing	Conduit Size	No.
	Pillar Pressure-resisting Packing Leading	Wall Mounting Pressure-resisting Packing Leading	Wall Mounting Conduit Leading	Meter	Indicating Lamp	Push-button Switch	Changeover Switch			
EPS, EPW, EDW d2G5 Division 1 and 2 area	E P S 0030	E P W 0030	E D W 0030	—	—	3	—	φ 14	P F ¾	⑨
	// 0021	// 0021	// 0021	—	—	2	1	φ 16	//	⑩
	// 0040	// 0040	// 0040	—	—	4	—	//	//	⑪
	// 0031	// 0031	// 0031	—	—	3	1	//	//	⑫
	// 0022	// 0022	// 0022	—	—	2	2	//	//	⑬
	// 0004	// 0004	// 0004	—	—	—	4	φ 21	P F 1	⑭
	// 0120	// 0120	// 0120	—	1	2	—	φ 14	P F ¾	⑮
	// 0220	// 0220	// 0220	—	2	2	—	φ 16	//	⑯
	// 0211	// 0211	// 0211	—	2	1	1	//	//	⑰
	// 1020	// 1020	// 1020	1	—	2	—	φ 14	//	⑱
	// 1011	// 1011	// 1011	1	—	1	1	φ 16	//	⑲
	// 1002	// 1002	// 1002	1	—	—	2	//	//	⑳
HPS, HPW d3aG5 Water gas and Hydrogen area	H P S 0030	H P W 0030		—	—	3	—	φ 14		⑨
	// 0021	// 0021		—	—	2	1	φ 16		⑩
	// 0040	// 0040		—	—	4	—	//		⑪
	// 0031	// 0031		—	—	3	1	//		⑫
	// 0022	// 0022		—	—	2	2	//		⑬
	// 0004	// 0004		—	—	—	4	φ 21		⑭
	// 0120	// 0120		—	1	2	—	φ 14		⑮
	// 0220	// 0220		—	2	2	—	φ 16		⑯
	// 0211	// 0211		—	2	1	1	//		⑰
	// 1020	// 1020		1	—	2	—	φ 14		⑱
	// 1011	// 1011		1	—	1	1	φ 16		⑲
	// 1002	// 1002		1	—	—	2	//		⑳

DIMENSIONS AND ARRANGEMENT <FOR CASE TYPE3>

Note : (1) Symbol ○···Push-button switch ⊗···Select switch ⊗···Indicating lamp Ⓐ···Meter

No.	⑳	㉑	㉒	㉓	㉔	㉕	㉖	㉗
Arrangement (1)								
Wiring								
No.	㉘	㉙	㉚	㉛	㉜	㉝	㉞	㉟
Arrangement (1)								
Wiring								

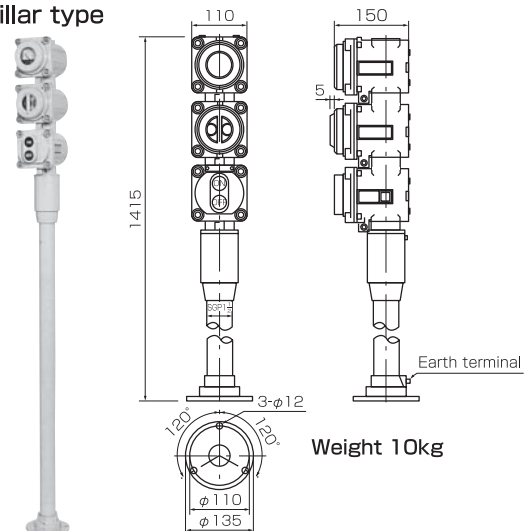
● Wall mounting type



Weight 4.5kg

Numeral in the bracket () shows dimension for packing leading type.

● Pillar type



Weight 10kg

Note : EPS, EPW, EDW (applied to division 1 and 2 area), HPS, HPW (applied to water gas and hydrogen area) are the same dimension.

SPECIFICATIONS LIST <FOR CASE TYPE3>

Grade of Explosion Protected	Model			Quantity of Equipment				Inner Dia. of Packing	Conduit Size	No.
	Pillar Pressure-resisting Packing Leading	Wall Mounting Pressure-resisting Packing Leading	Wall Mounting Conduit Leading	Meter	Indicating Lamp	Push-button Switch	Changeover Switch			
EPS, EPW, EDW d2G5 Division 1 and 2 area	E P S 0060	E P W 0060	E D W 0060	—	—	6	—	φ 21	P F 1	㉑
	// 0042	// 0042	// 0042	—	—	4	2	//	//	㉒
	// 0230	// 0230	// 0230	—	2	3	—	φ 16	//	㉓
	// 0130	// 0130	// 0130	—	1	3	—	//	//	㉔
	// 0121	// 0121	// 0121	—	1	2	1	//	//	㉕
	// 0221	// 0221	// 0221	—	2	2	1	//	//	㉖
	// 0231	// 0231	// 0231	—	2	3	1	φ 21	//	㉗
	// 0320	// 0320	// 0320	—	3	2	—	φ 16	//	㉘
	// 1030	// 1030	// 1030	1	—	3	—	//	//	㉙
	// 1031	// 1031	// 1031	1	—	3	1	φ 21	//	㉚
	// 1022	// 1022	// 1022	1	—	2	2	//	//	㉛
	// 1021	// 1021	// 1021	1	—	2	1	φ 16	//	㉜
	// 1120	// 1120	// 1120	1	1	2	—	//	//	㉝
	// 1220	// 1220	// 1220	1	2	2	—	//	//	㉞
HPS, HPW d3aG5 Water gas and Hydrogen area	H P S 0060	H P W 0060		—	—	6	—	φ 21		㉑
	// 0042	// 0042		—	—	4	2	//		㉒
	// 0230	// 0230		—	2	3	—	φ 16		㉓
	// 0130	// 0130		—	1	3	—	//		㉔
	// 0121	// 0121		—	1	2	1	//		㉕
	// 0221	// 0221		—	2	2	1	//		㉖
	// 0231	// 0231		—	2	3	1	φ 21		㉗
	// 0320	// 0320		—	3	2	—	φ 16		㉘
	// 1030	// 1030		1	—	3	—	//		㉙
	// 1031	// 1031		1	—	3	1	φ 21		㉚
	// 1022	// 1022		1	—	2	2	//		㉛
	// 1021	// 1021		1	—	2	1	φ 16		㉜
	// 1120	// 1120		1	1	2	—	//		㉝
	// 1220	// 1220		1	2	2	—	//		㉞

■ FOR ORDERING

For your ordering, please inform the model number from catalogue and the following items.

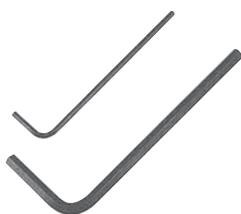
Control Unit	☐ Meter	☐ Ammeter	Scale	☐ 3 times scale ☐		
			CT ratio	☐ _/ 5A ☐ _/ 1A ☐ _A (direct) ☐		
		☐ Voltmeter	Volt	☐ 150V ☐ 300V ☐ _/ 110V		
	☐ Push-button switch		Color	☐ Black	☐ Red	☐ Green
		Letter	☐ ON ☐ ☐ ☐	☐ OFF ☐ ☐ ON ☐	☐ OFF ☐ ☐ ☐	
	☐ Select switch	Notch	☐ 2 notches ☐ 3 notches			
		Letter	☐ REM-DIR ☐ AUT-MAN ☐ ☐	☐ AUT-OFF-MAN ☐ ☐ ☐		
	☐ Indicating lamp	Circuit voltage	___V___Hz			
		Color	☐ Red	☐ Green	☐ Orange ☐ White	
		Application	☐ Start ☐	☐ Stop ☐	☐ Break ☐ Source ☐	
Leading method	☐ Conduit leading type	Conduit size	☐ PF 3/4 ☐ PF 1 ☐ PF 1 1/4			
	☐ Packing leading type	Outside dia. of cable	ϕ ____			
others	Painting color	Outer face	☐ Muncell No. N7 ☐			
		Inner face				
	Wiring	Please inform the circuit if it is difference from our standard				

Note : In special specification, please specify their matters.
☐ is standard specification.

■ ACCESSORIES



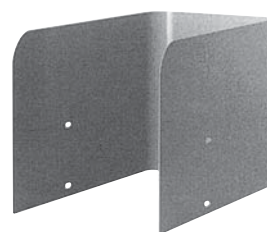
Box spanner (M6) (optional)



Wrench (optional)
M4
M8 (for Self-standing type)



Fixing bolt
(for Self-standing type)



Sunshade cover (optional)

Togami Electric Mfg.Co.,Ltd.

<http://www.togami-elec.co.jp>

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840-0802 JAPAN
TEL 0952-24-4111 (Key Number)
FAX 0952-26-4594

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FAX +81-3-5738-3622