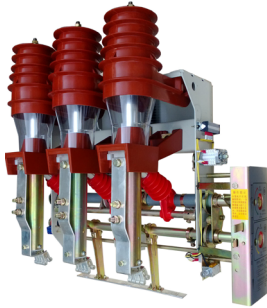


FN12-12(D)/T630-20 Indoor High-Voltage Pressure-Operated Load Switch FN12-12R (D)/T125-31.5 Indoor High-Voltage Pressure-Operated Load Switch – Fuse-Combination Unit

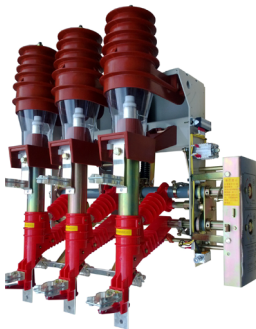
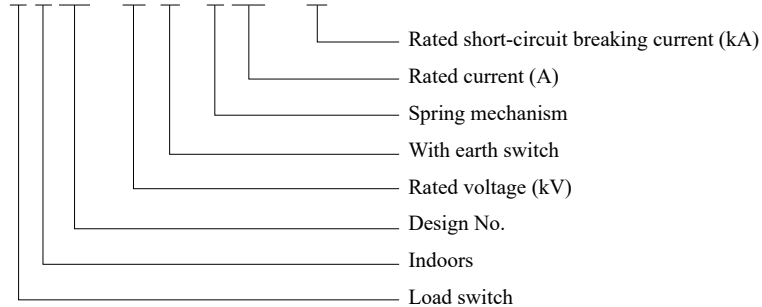


1 Product overview

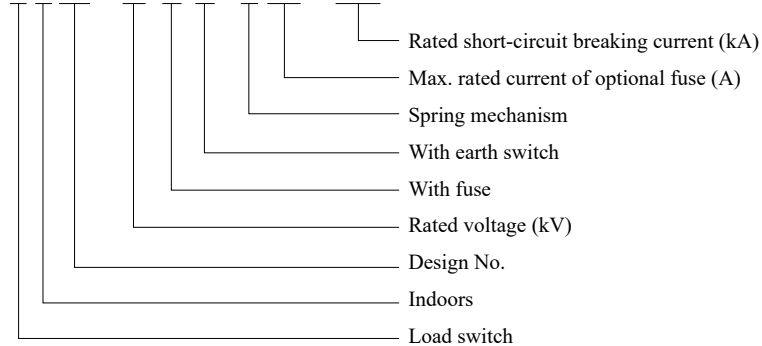
- 1.1 Used in the 10kV and below three-phase power distribution system for control and protection of power equipment such as transformer, cables, and overhead lines, especially suitable for terminal substations and box-type substations used in urban network and rural network and for control and protection of ring network and dual radiant power supply unit.
- 1.2 FN12-12(D)/T630-20 indoor high-voltage pressure-operated load switch can be used to turn on / off the load current.
- 1.3 FN12-12R (D)/T125-31.5 indoor high-voltage pressure-operated load switch – fuse-combination unit can be used to turn on / off the load current, the overload current, and the breaking line short-circuit current.
- 1.4 Available standards
GB/T 3804-2004 High-voltage alternating-current switches for rated voltage above 3.6kV and less than 40.5kV
GB/T 16926-2009 High-voltage alternating current switch – fuse combinations

2 Type designation

F N 12 - 12 D / T 630 - 20



F N 12 - 12 R D / T 125 - 31.5



FN12-12(D)/T630-20 Indoor High-Voltage Pressure-Operated Load Switch FN12-12R (D)/T125-31.5 Indoor High-Voltage Pressure-Operated Load Switch – Fuse-Combination Unit

3 Product parameters

No.	Parameter Name			Unit	FN12-12D	FN12-12RD
1	Rated voltage			kV	12	12
2	Rated current			Hz	50	50
3	Rated frequency			A	630	125
4	Rated insulation level	Power frequency withstand voltage for 1 minute	Voltage to ground, Phase-phase voltage	kV	42	42
			Break voltage		48	48
		Lightning impulse withstand voltage (peak)	Voltage to ground, Phase-phase voltage		75	75
			Break voltage		85	85
5	Rated circuit-breaker withstand current (thermal stability current)			kA	20	--
6	Rated short-circuit duration (thermal stability current)		Load switch	S	4	--
			Earth switch		2	
7	Rated short-circuit making current (peak)			kA	50	--
8	Rated breaking current		Active load breaking current	A	630	--
			Closed-loop breaking current		630	--
			5% active load breaking current		31.5	--
			Cable charge current		10	--
9	Breaking no-load transformer capacity			kVA	1250	--
10	Rated short-circuit breaking current (current-limiting fuse)			kA	--	31.5
11	Rated transfer current or take-over current			A	--	1200
12	Mechanical life			次	2000	
13	Impactor output energy			J	--	2 ~ 5
14	Main circuit resistance			μΩ	≤120	≤300
15	Fuse model			--	--	XRNT □ -12

4 Working environment conditions

- 4.1 Ambient temperature: Upper limit: +40°C; Lower limit: -15°C;
- 4.2 The altitude does not exceed 1000m.
- 4.3 For relative air humidity, the daily mean is not greater than 95%, and the monthly mean is not greater than 90%;
- 4.4 The earthquake intensity does not exceed 8 degrees.
- 4.5 Installed in places free of fire, explosive risk, chemical corrosion, and violent vibration.
- 4.6 The installation site shall be free of flammable substance, explosive risk, chemical corrosion and violent vibration.

Please contact the manufacturer for customizing those failed to follow the normal working conditions.

FN12-12(D)/T630-20 Indoor High-Voltage Pressure-Operated Load Switch FN12-12R (D)/T125-31.5 Indoor High-Voltage Pressure-Operated Load Switch – Fuse-Combination Unit

5 Technical features of product

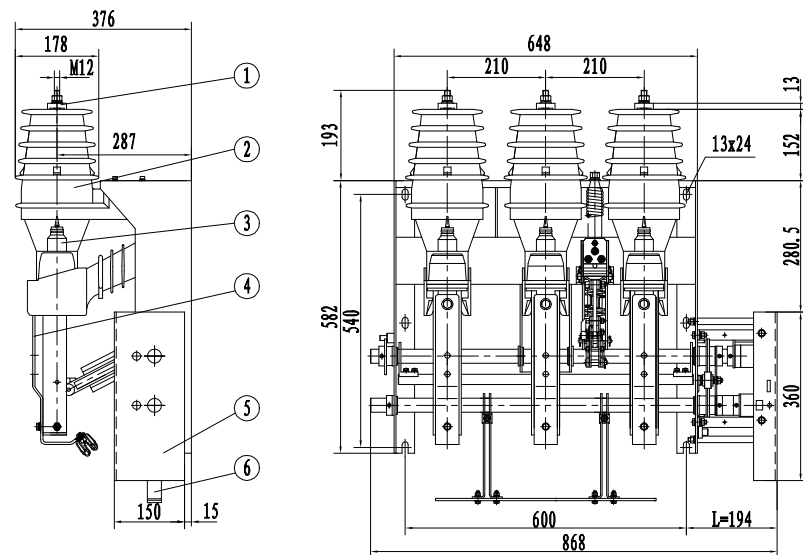
5.1 This series of product feature with compact structure, reasonable design, reliable interlock, and high insulation level, and its opening and closing actions are realized in the vertical straight movement way; the spring energy-storage operating mechanism is used to ensure that the opening and closing speed is not affected by the operating force applied by the operator; the electric arc will be extinguished in the bell-shaped insulating hood, and free gas will not cause the reduction of the insulation between the phases or to the ground when arcing.

5.2 An organic transparent insulating hood is provided between the bell-shaped hood and the support (that is the switch isolating distance) to completely isolate the live body, thus improving the protection grade of ring main unit. A reliable mechanical interlock is provided between the load switch and the ground switch, and a mechanical interlock is also installed on the switch panel with the cabinet body. Those interlocks are simple and effective without mis-operation or unintended touching of live body.

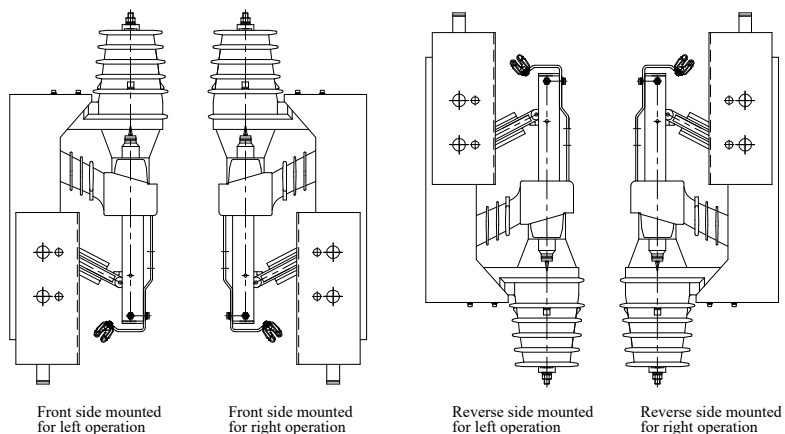
5.3 This series of products use arc contact made of copper-tungsten alloy allowing that the switch is conductive reliably and has a long electrical life with advantages of easy maintenance, convenient operation, and reliable operation.

6 Outline and installation dimensions

6.1 Load switch

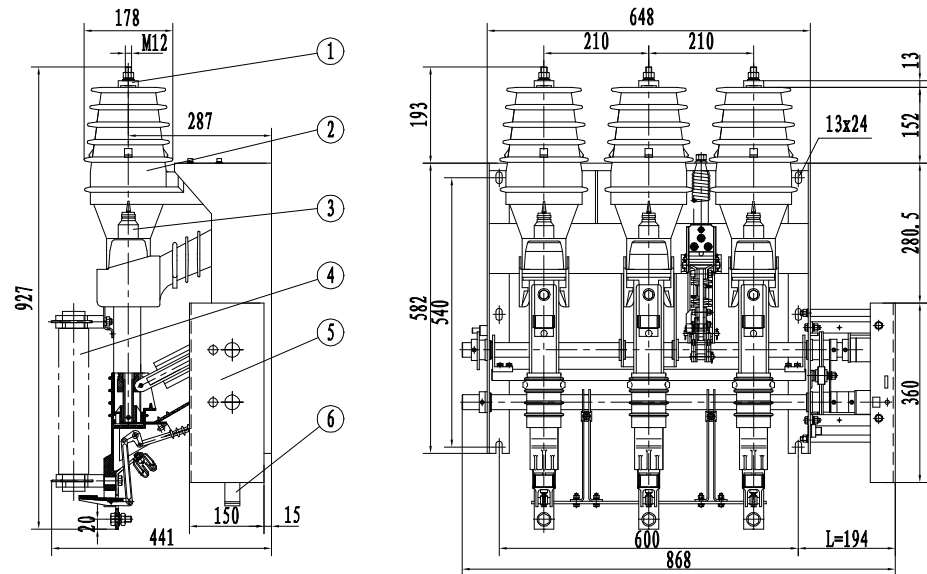


- | | | |
|------------------------|-------------------|------------------|
| ① Static outgoing seat | ③ Conducting bush | ⑤ Operator panel |
| ② Insulating hood | ④ Conducting bar | ⑥ Earth switch |

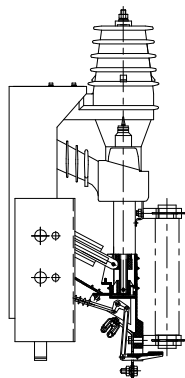


FN12-12(D)/T630-20 Indoor High-Voltage Pressure-Operated Load Switch FN12-12R (D)/T125-31.5 Indoor High-Voltage Pressure-Operated Load Switch – Fuse-Combination Unit

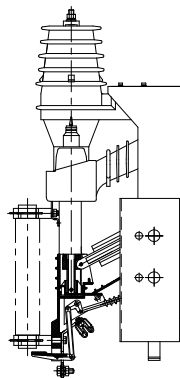
6.2 Load switch – fuse-combination unit



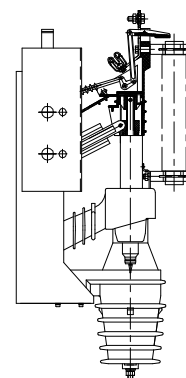
- | | | |
|------------------------|-------------------|------------------|
| ① Static outgoing seat | ③ Conducting bush | ⑤ Operator panel |
| ② Insulating hood | ④ Fuse | ⑥ Earth switch |



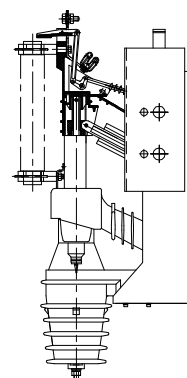
Front side mounted
for left operation



Front side mounted
for right operation



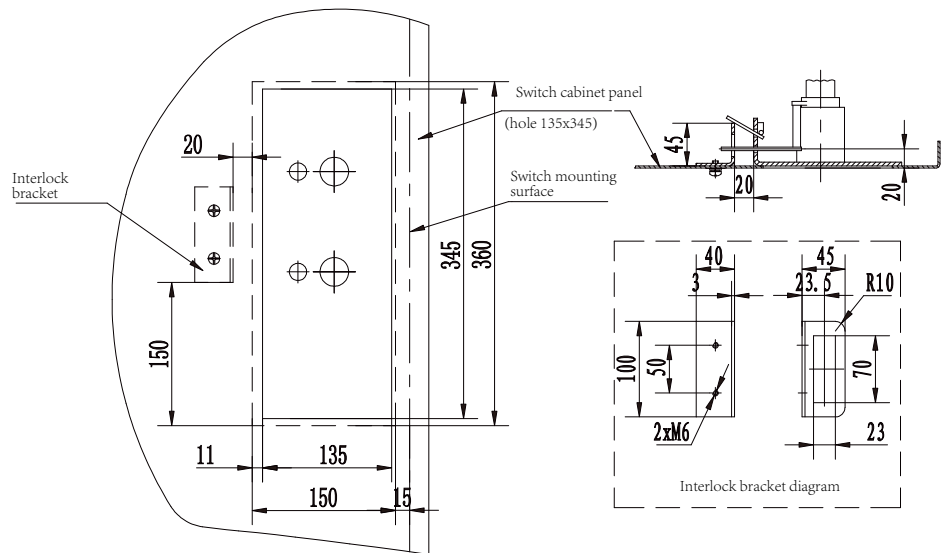
Reverse side mounted
for left operation



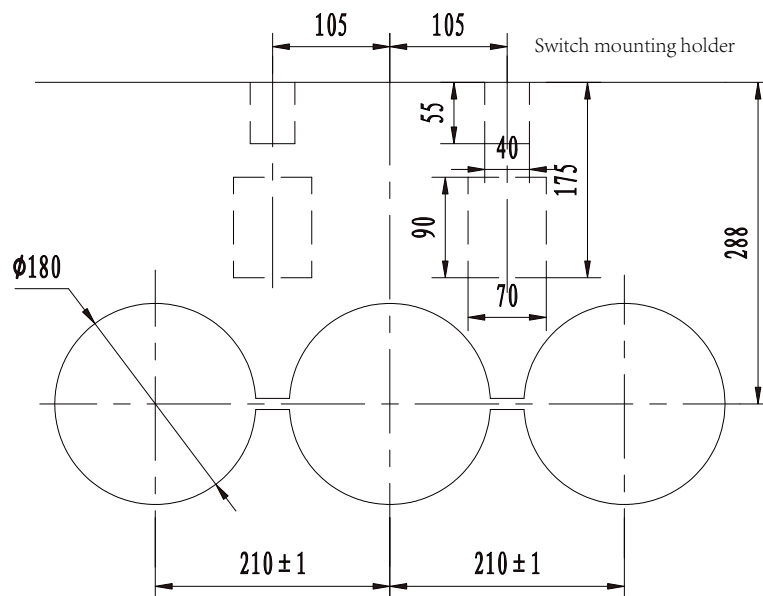
Reverse side mounted
for right operation

**FN12-12(D)/T630-20 Indoor High-Voltage Pressure-Operated Load Switch
FN12-12R (D)/T125-31.5 Indoor High-Voltage Pressure-Operated Load
Switch – Fuse-Combination Unit**

6.3 Cabinet door opening and interlock installation diagram (front side mounted for right operation)



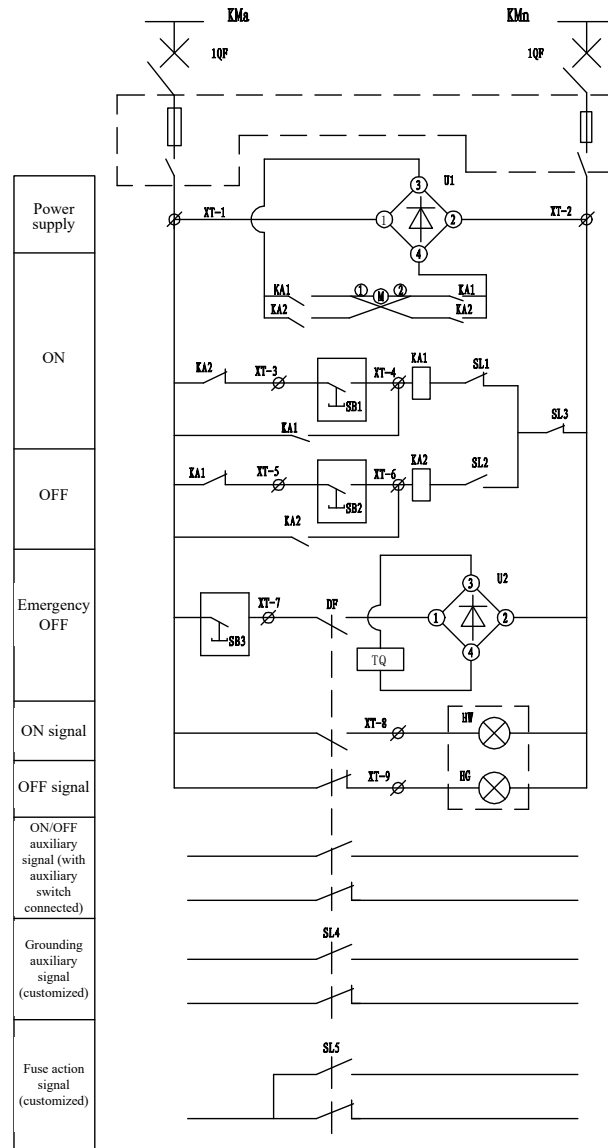
6.4 Diagram of holes on the baffle



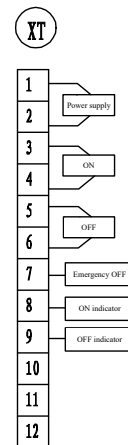
FN12-12(D)/T630-20 Indoor High-Voltage Pressure-Operated Load Switch FN12-12R (D)/T125-31.5 Indoor High-Voltage Pressure-Operated Load Switch – Fuse-Combination Unit

7 Secondary scheme diagram

7.1 Electric type



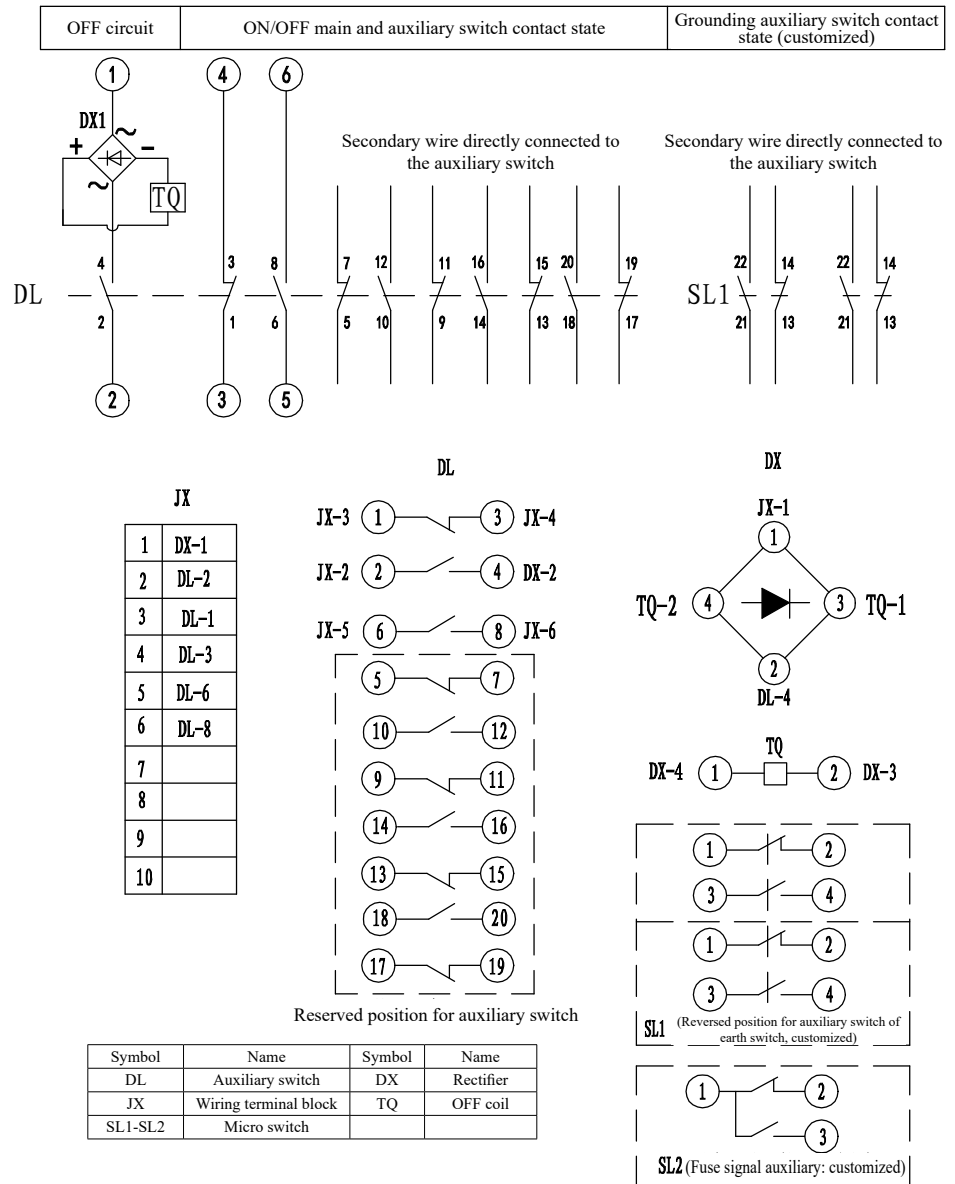
Note: The switches and earth switches shown in this figure are all at the OFF state.



XT	Wiring terminal	1
DF	Auxiliary switch FK10 changed	1
TQ	Trip coil	1
SL5	Fuse signal auxiliary switch LXW1-11	1
SL4	Auxiliary switch for earth switch LXW20-11M	1
SL3	Interlock travel switch for earth switch LXW2-11	1
SL2	OFF limit switch LXW2-11	1
SL1	ON limit switch LXW2-11	1
M	Motor 59ZYCJ02	1
KA2	OFF relay HH54P	1
KA1	ON relay HH54P	1
U1U2	Rectifier KBPC3510	1

FN12-12(D)/T630-20 Indoor High-Voltage Pressure-Operated Load Switch FN12-12R (D)/T125-31.5 Indoor High-Voltage Pressure-Operated Load Switch – Fuse-Combination Unit

7.2 Manual type with shunt release



FN12-12(D)/T630-20 Indoor High-Voltage Pressure-Operated Load Switch FN12-12R (D)/T125-31.5 Indoor High-Voltage Pressure-Operated Load Switch – Fuse-Combination Unit

8 Order technology confirmation form

Order technology confirmation form for FN12-12 (RD)

Determine your requirements according to the items listed in table below:

Product model	Load switch: <input type="checkbox"/> FN12-12 /T630-20		
	Load switch – fuse-combination unit: <input type="checkbox"/> FN12-12R /T125-31.5		
Qty. (pcs)			
Installation method	<input type="checkbox"/> Front side mounted <input type="checkbox"/> Reverse side mounted <input type="checkbox"/> Wall-mounted Note: Side-mounted ABC phase sequence is far-middle-near layout		
Operation direction	<input type="checkbox"/> Right operation <input type="checkbox"/> Left operation		
Operation method	<input type="checkbox"/> Electric		<input type="checkbox"/> Manual
	<input type="checkbox"/> AC110V <input type="checkbox"/> DC110V <input type="checkbox"/> AC220V <input type="checkbox"/> DC220V	Shunt coil	<input type="checkbox"/> Yes (operating voltage___V) <input type="checkbox"/> No (standard configuration)
Grounding device	<input type="checkbox"/> With earth switch <input type="checkbox"/> Without earth switch		
Auxiliary switch of main switch	<input type="checkbox"/> Five-ON and Five-OFF <input type="checkbox"/> No (standard configuration for manual mode) <input type="checkbox"/> Others_____		
auxiliary switch of Ground switch	<input type="checkbox"/> Two-ON and Two-OFF <input type="checkbox"/> No (standard configuration) <input type="checkbox"/> Others_____		
Secondary wiring scheme	<input type="checkbox"/> TENGEN's standard scheme (see catalog) <input type="checkbox"/> No-standard scheme (scheme should be provided)		
Outline dimensions	<input type="checkbox"/> TENGEN's standard scheme (see catalog) <input type="checkbox"/> No-standard scheme (scheme should be provided)		
Other special requirements	<div style="float: right; text-align: right;"> Ordering unit (seal) Sign: Confirmation date: Tel: </div>		

Note:

1. If not ticked, all options shall be manufactured according to the TENGEN's standard configurations.
2. The load switch – fuse combination is not equipped with a fusible core.