

FCL7系列AC型 漏电断路器

RCCB FCL7 SERIES AC TYPE RESIDUAL CURRENT CIRCUIT BREAKER



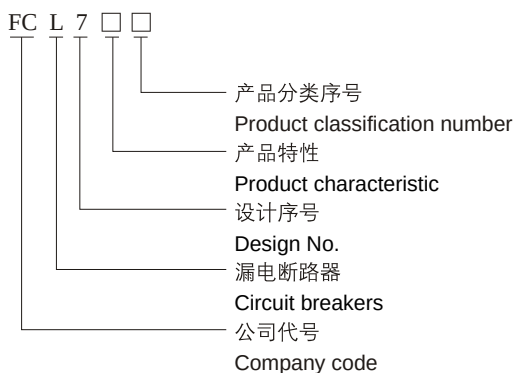
工作原理 Operation principle

线路正常工作时, 剩余电流动作断路器处于闭合位置, 当线路发生漏电或触电故障时, 零序电流互感器输出的信号推动脱扣器动作, 并在0.1秒内切断电源, 从而实现漏电保护功能。

When the circuit works normally, residual current operated circuit breaker is in "on" position. When leakage or electric shock hazard occurs in the circuit, the current transformer puts out a signal to make electromagnetic release work, and cut off power source within 0.1 second to prevent leakage.

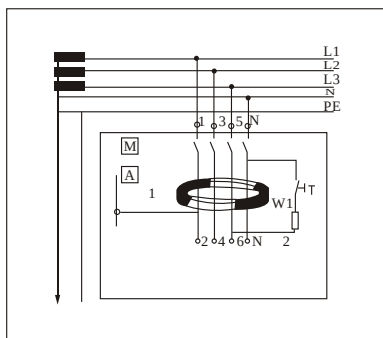
产品订货号说明

Product ordering code introduction



工作原理图

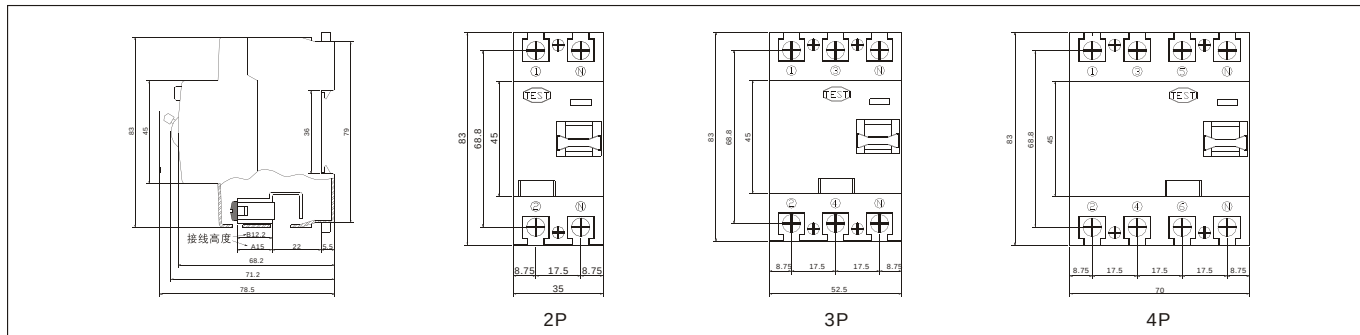
Operation principle figure



型号、规格、技术参数 Type, Specification, Technical parameter

型号规格 Type and specification	额定电流 Rated current	额定电压 Rated voltage	动作电流额定 (I Δ n) Rated operating current	剩余动作电流动作范围 Residual operating current range	分断能力 Rated conditional short circuit current	机械寿命 Mechanical life
二极 2 Poles	16A 25A 32A	交流 230V AC 230V	0.03A 0.1A	0.1I Δ n~I Δ n	3000A至6000A	10000次
四极 4 Poles	40A 63A	交流 400V AC 400V	0.3A			

外形及安装 Dimension and Mounting



FCL7-2P(AC型)系列产品 FCL7-2P (AC type) series product

产品订货号 Product ordering code	额定电压 Rated voltage	额定电流 Rated current	漏电动作电流 Operating current for earth leakage	产品订货号 Product ordering code	额定电压 Rated voltage	额定电流 Rated current	漏电动作电流 Operating current for earth leakage
FCL7AC201	240V	10A	10mA	FCL7AC219	240V	32A	500mA
FCL7AC202	240V	10A	30mA	FCL7AC220	240V	40A	30mA
FCL7AC203	240V	10A	100mA	FCL7AC221	240V	40A	100mA
FCL7AC204	240V	10A	300mA	FCL7AC222	240V	40A	300mA
FCL7AC205	240V	10A	500mA	FCL7AC223	240V	40A	500mA
FCL7AC206	240V	16A	10mA	FCL7AC224	240V	63A	30mA
FCL7AC207	240V	16A	30mA	FCL7AC225	240V	63A	100mA
FCL7AC208	240V	16A	100mA	FCL7AC226	240V	63A	300mA
FCL7AC209	240V	16A	300mA	FCL7AC227	240V	63A	500mA
FCL7AC210	240V	16A	500mA	FCL7AC228	240V	80A	30mA
FCL7AC211	240V	25A	10mA	FCL7AC229	240V	80A	100mA
FCL7AC212	240V	25A	30mA	FCL7AC230	240V	80A	300mA
FCL7AC213	240V	25A	100mA	FCL7AC231	240V	80A	500mA
FCL7AC214	240V	25A	300mA	FCL7AC232	240V	100A	30mA
FCL7AC215	240V	25A	500mA	FCL7AC233	240V	100A	100mA
FCL7AC216	240V	32A	30mA	FCL7AC234	240V	100A	300mA
FCL7AC217	240V	32A	100mA	FCL7AC235	240V	100A	500mA
FCL7AC218	240V	32A	300mA				

FCL7-3P(AC型)系列产品 FCL7-3P (AC type) series product

产品订货号 Product ordering code	额定电压 Rated voltage	额定电流 Rated current	漏电动作电流 Operating current for earth leakage	产品订货号 Product ordering code	额定电压 Rated voltage	额定电流 Rated current	漏电动作电流 Operating current for earth leakage
FCL7AC301	415V	10A	30mA	FCL7AC317	415V	40A	30mA
FCL7AC302	415V	10A	100mA	FCL7AC318	415V	40A	100mA
FCL7AC303	415V	10A	300mA	FCL7AC319	415V	40A	300mA
FCL7AC304	415V	10A	500mA	FCL7AC320	415V	40A	500mA
FCL7AC305	415V	16A	30mA	FCL7AC321	415V	63A	30mA
FCL7AC306	415V	16A	100mA	FCL7AC322	415V	63A	100mA
FCL7AC307	415V	16A	300mA	FCL7AC323	415V	63A	300mA
FCL7AC308	415V	16A	500mA	FCL7AC324	415V	63A	500mA
FCL7AC309	415V	25A	30mA	FCL7AC325	415V	80A	30mA
FCL7AC310	415V	25A	100mA	FCL7AC326	415V	80A	100mA
FCL7AC311	415V	25A	300mA	FCL7AC327	415V	80A	300mA
FCL7AC312	415V	25A	500mA	FCL7AC328	415V	80A	500mA
FCL7AC313	415V	32A	30mA	FCL7AC329	415V	100A	30mA
FCL7AC314	415V	32A	100mA	FCL7AC330	415V	100A	100mA
FCL7AC315	415V	32A	300mA	FCL7AC331	415V	100A	300mA
FCL7AC316	415V	32A	500mA	FCL7AC332	415V	100A	500mA

FCL7-4P(AC型)系列产品 FCL7-4P (AC type) series product

产品订货号 Product ordering code	额定电压 Rated voltage	额定电流 Rated current	漏电动作电流 Operating current for earth leakage	产品订货号 Product ordering code	额定电压 Rated voltage	额定电流 Rated current	漏电动作电流 Operating current for earth leakage
FCL7AC401	415V	10A	10mA	FCL7AC418	415V	32A	300mA
FCL7AC402	415V	10A	30mA	FCL7AC419	415V	32A	500mA
FCL7AC403	415V	10A	100mA	FCL7AC420	415V	40A	30mA
FCL7AC404	415V	10A	300mA	FCL7AC421	415V	40A	100mA
FCL7AC405	415V	10A	500mA	FCL7AC422	415V	40A	300mA
FCL7AC406	415V	16A	10mA	FCL7AC423	415V	40A	500mA
FCL7AC407	415V	16A	30mA	FCL7AC424	415V	63A	30mA
FCL7AC408	415V	16A	100mA	FCL7AC425	415V	63A	100mA
FCL7AC409	415V	16A	300mA	FCL7AC426	415V	63A	300mA
FCL7AC410	415V	16A	500mA	FCL7AC427	415V	63A	500mA
FCL7AC411	415V	25A	10mA	FCL7AC428	415V	80A	30mA
FCL7AC412	415V	25A	30mA	FCL7AC429	415V	80A	100mA
FCL7AC413	415V	25A	100mA	FCL7AC430	415V	80A	300mA
FCL7AC414	415V	25A	300mA	FCL7AC431	415V	80A	500mA
FCL7AC415	415V	25A	500mA	FCL7AC432	415V	100A	30mA
FCL7AC416	415V	32A	30mA	FCL7AC433	415V	100A	100mA
FCL7AC417	415V	32A	100mA	FCL7AC434	415V	100A	300mA
				FCL7AC435	415V	100A	500mA

注：订货时请将汇流排尺寸注明在产品订货号后。
 汇流排尺寸 A：15mm接线高度；B：12.2mm 接线高度。
 例：FCL7AC201A为15mm接线高度；FCL7AC201B为12.2mm接线高度。

Note: Please specify the size of busbar behind product ordering number when ordering.
 Size A of busbar: A: 15mm wiring height. B: 12.2mm wiring height.
 Example: The wiring height for FCL7AC201A is 15mm,
 The wiring height for FCL7AC201B is 12.2mm.

RCCB

FCL7系列A型 漏电断路器

RCCB FCL7 SERIES A TYPE RESIDUAL CURRENT CIRCUIT BREAKER



工作原理 Operation principle

主要用于交流230/145V及以下,额定工作电流为16A~80A的配电线路及电器设备中,对直接或间接接触带电体而产生的漏电、火灾事故及绝缘破坏等故障进行有效的保护。其主要特点是电磁式结构,更具有安全及可靠性;采用新颖接线形式,外型美观。广泛用于民用、公众场合及工业领域如建筑物大楼、酒店办公楼以及石矿企业等配电系统、仪器仪表设备、直流电机等特殊设备保护,与普通的RCCB兼容。A型  对突然施加的或缓慢上升的剩余正弦交流和剩余脉动直流电流能确保脱扣,能在规定值内,交流或剩余脉动直流下滞后角0°、90°、135°和脉动直流叠加0.006A平滑直流时能自由脱扣。

该产品符合IEC61008和DIN VDE0664标准。

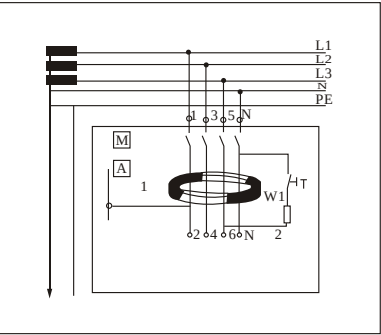
FCL7 series (A type: Alternating current and pulsating direct current) of residual current circuit breakers are mainly used in the electric distribution system AC 230/415V or less with rated current from 16A to 80A, It is found wide use to protect residential, functional, industrial buildings and hotel etc. against earth leakage, insulation fault and fire accident caused by direct or indirect contact with electric parts (including human or other animal getting a electric shock). It will trip free under rated value, or current delay angle of 0°、90°、135° residual pulsating direct current, or pile pulsating direct current up to 0.006A direct current. It is compatible with normal RCCB.

FCL7 series (A type) of RCCBs are in accordance with IEC61008 and DIN VDE0664.

产品订货号说明 Product ordering code introduction



工作原理图 Operation principle figure



型号、规格、技术参数 Type, Specification, Technical parameter

滞后角 Lay angle α	脱扣电流 Trip current (A)	
	下限 Lower limit	上限 Upper limit
0°	0.35I Δ n	1.4 I Δ n
90°	0.25I Δ n	
135°	0.11I Δ n	

注: 半波直流或交流, 跟电压无关, 能在规定电流下自由脱扣。Noto: half-wave DC or AC, can trip freely, under rated current, independent of voltage.

FCL7-2P(A型)系列产品 FCL7-2P (A type) series product

产品订货号 Product ordering code	额定电压 Rated voltage	额定电流 Rated current	漏电动作电流 Operating current for earth leakage	产品订货号 Product ordering code	额定电压 Rated voltage	额定电流 Rated current	漏电动作电流 Operating current for earth leakage
FCL7A0201	240V	10A	10mA	FCL7A0219	240V	32A	500mA
FCL7A0202	240V	10A	30mA	FCL7A0220	240V	40A	30mA
FCL7A0203	240V	10A	100mA	FCL7A0221	240V	40A	100mA
FCL7A0204	240V	10A	300mA	FCL7A0222	240V	40A	300mA
FCL7A0205	240V	10A	500mA	FCL7A0223	240V	40A	500mA
FCL7A0206	240V	16A	10mA	FCL7A0224	240V	63A	30mA
FCL7A0207	240V	16A	30mA	FCL7A0225	240V	63A	100mA
FCL7A0208	240V	16A	100mA	FCL7A0226	240V	63A	300mA
FCL7A0209	240V	16A	300mA	FCL7A0227	240V	63A	500mA
FCL7A0210	240V	16A	500mA	FCL7A0228	240V	80A	30mA
FCL7A0211	240V	25A	10mA	FCL7A0229	240V	80A	100mA
FCL7A0212	240V	25A	30mA	FCL7A0230	240V	80A	300mA
FCL7A0213	240V	25A	100mA	FCL7A0231	240V	80A	500mA
FCL7A0214	240V	25A	300mA	FCL7A0232	240V	100A	30mA
FCL7A0215	240V	25A	500mA	FCL7A0233	240V	100A	100mA
FCL7A0216	240V	32A	30mA	FCL7A0234	240V	100A	300mA
FCL7A0217	240V	32A	100mA	FCL7A0235	240V	100A	500mA
FCL7A0218	240V	32A	300mA				

FCL7-3P(A型)系列产品 FCL7-3P (A type) series product

产品订货号 Product ordering code	额定电压 Rated voltage	额定电流 Rated current	漏电动作电流 Operating current for earth leakage	产品订货号 Product ordering code	额定电压 Rated voltage	额定电流 Rated current	漏电动作电流 Operating current for earth leakage
FCL7A0301	415V	10A	30mA	FCL7A0317	415V	40A	30mA
FCL7A0302	415V	10A	100mA	FCL7A0318	415V	40A	100mA
FCL7A0303	415V	10A	300mA	FCL7A0319	415V	40A	300mA
FCL7A0304	415V	10A	500mA	FCL7A0320	415V	40A	500mA
FCL7A0305	415V	16A	30mA	FCL7A0321	415V	63A	30mA
FCL7A0306	415V	16A	100mA	FCL7A0322	415V	63A	100mA
FCL7A0307	415V	16A	300mA	FCL7A0323	415V	63A	300mA
FCL7A0308	415V	16A	500mA	FCL7A0324	415V	63A	500mA
FCL7A0309	415V	25A	30mA	FCL7A0325	415V	80A	30mA
FCL7A0310	415V	25A	100mA	FCL7A0326	415V	80A	100mA
FCL7A0311	415V	25A	300mA	FCL7A0327	415V	80A	300mA
FCL7A0312	415V	25A	500mA	FCL7A0328	415V	80A	500mA
FCL7A0313	415V	32A	30mA	FCL7A0329	415V	100A	30mA
FCL7A0314	415V	32A	100mA	FCL7A0330	415V	100A	100mA
FCL7A0315	415V	32A	300mA	FCL7A0331	415V	100A	300mA
FCL7A0316	415V	32A	500mA	FCL7A0332	415V	100A	500mA

FCL7-4P(A型)系列产品 FCL7-4P (A type) series product

产品订货号 Product ordering code	额定电压 Rated voltage	额定电流 Rated current	漏电动作电流 Operating current for earth leakage	产品订货号 Product ordering code	额定电压 Rated voltage	额定电流 Rated current	漏电动作电流 Operating current for earth leakage
FCL7A0401	415V	10A	10mA	FCL7A0418	415V	32A	500mA
FCL7A0402	415V	10A	30mA	FCL7A0419	415V	40A	30mA
FCL7A0403	415V	10A	100mA	FCL7A0420	415V	40A	100mA
FCL7A0404	415V	10A	300mA	FCL7A0421	415V	40A	300mA
FCL7A0405	415V	10A	500mA	FCL7A0422	415V	40A	500mA
FCL7A0406	415V	16A	10mA	FCL7A0423	415V	63A	30mA
FCL7A0407	415V	16A	30mA	FCL7A0424	415V	63A	100mA
FCL7A0408	415V	16A	100mA	FCL7A0425	415V	63A	300mA
FCL7A0409	415V	16A	300mA	FCL7A0426	415V	63A	500mA
FCL7A0410	415V	16A	500mA	FCL7A0427	415V	80A	30mA
FCL7A0411	415V	25A	30mA	FCL7A0428	415V	80A	100mA
FCL7A0412	415V	25A	100mA	FCL7A0429	415V	80A	300mA
FCL7A0413	415V	25A	300mA	FCL7A0430	415V	80A	500mA
FCL7A0414	415V	25A	500mA	FCL7A0431	415V	100A	30mA
FCL7A0415	415V	32A	30mA	FCL7A0432	415V	100A	100mA
FCL7A0416	415V	32A	100mA	FCL7A0433	415V	100A	300mA
FCL7A0417	415V	32A	300mA	FCL7A0434	415V	100A	500mA

注：订货时请将汇流排尺寸注明在产品订货号后。
汇流排尺寸 A：15mm接线高度；B：12.2mm 接线高度。
例：FCL7AC201A为15mm接线高度；FCL7AC201B为12.2mm接线高度。

Note: Please specify the size of busbar behind product ordering number when ordering.
Size A of busbar: A: 15mm wiring height. B: 12.2mm wiring height.
Example: The wiring height for FCL7AC201A is 15mm,
The wiring height for FCL7AC201B is 12.2mm.

RCCB

FCL7系列S型漏断路器

RCCB FCL7 SERIES S TYPE RESIDUAL CURRENT CIRCUIT BREAKER



工作原理 Operation principle

主要用于交流230/145V及以下,额定工作电流为16A~80A的配电线路及电器设备中,对直接或间接接触带电体而产生的漏电、火灾事故及绝缘破坏等故障进行有效的保护。其主要特点是电磁式结构,更具有安全及可靠性;采用新颖接线形式,外型美观。

一般型电磁式漏电断路器不能接浪涌保护器,延时型家用保护器形成级保护,达到选择性动作,一般型动作延时型不动作,一般型有故障时延时型动作,增加一级保护,对电气投资虽略有增加,但对防范常见多发的危险性接地电弧火灾却是至关重要的。该产品符合IEC61008和DIN VDE0664标准。五环电器公司研制成功的延时型永磁式漏电断路器,是中国首创,填补了国内空白。

FCL7 series (S type: Alternating current and pulsating direct current & time delay) of residual current circuit breakers are mainly used in the electric distribution system AC 230/415V or less with rated current from 16A to 80A, for residential and industrial buildings, providing protection against electric surge. The normal RCCB can't contact with electric surge protecting device, however FCL7 series (S type) of RCCB can work together with normal RCCB to come into being a double protection: if the normal RCCB doesn't act, the FCL7 series (S type) of RCCB will act properly. It can be used in cable inlet as protection appliance.

Fivecircle Company is the one and only manufacture of FCL7 series (S type) (Alternation current and pulsating direct current & time-delay type) of Residual Current Circuit Breakers in China.

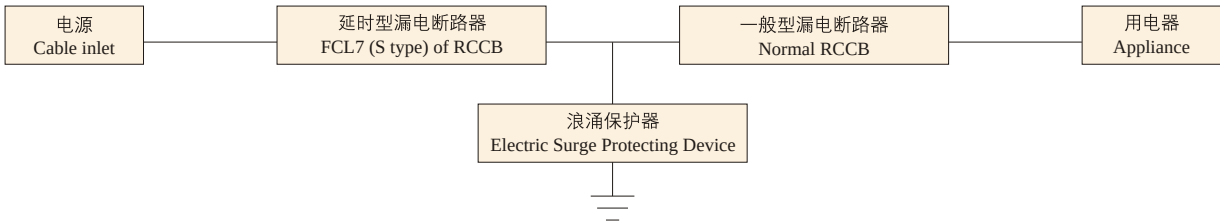
FCL7 series (S type) of RCCBs are in accordance with IEC61008 and DIN VDE0664.

型号、规格、技术参数 Type, Specification, Technical parameter

型号 Model	In/A	I Δ n/A	剩余电流(I Δ)等于下列值时的分断时间和不驱动时间标准值/S Breaking time and Non-actuating time under residual current (I Δ)/S				
			I Δ n	2I Δ n	5 I Δ n	5A,10A,50A, 100A,200A,500A	
一般型	任何值	任何值	0.3	0.15	0.04	0.04	最大分断时间 Max.Breaking time
S型	≥25	> 0.03	0.5	0.2	0.15	0.15	最大分断时间 Max.Breaking time
			0.13	0.06	0.05	0.04	最小不驱动时间 Min.non-actuating time

延时型漏电断路器用于总进线,作为设备的双级保护,在线路中位置如下:

It can be used in cable inlet as double protection appliance. It's position as follow:



FCL7-2P(S型)系列产品 FCL7-2P (S type) series product

产品订货号 Product ordering code	额定电压 Rated voltage	额定电流 Rated current	漏电动作电流 Operating current for earth leakage	产品订货号 Product ordering code	额定电压 Rated voltage	额定电流 Rated current	漏电动作电流 Operating current for earth leakage
FCL7S0201	240V	10A	10mA	FCL7S0219	240V	32A	500mA
FCL7S0202	240V	10A	30mA	FCL7S0220	240V	40A	30mA
FCL7S0203	240V	10A	100mA	FCL7S0221	240V	40A	100mA
FCL7S0204	240V	10A	300mA	FCL7S0222	240V	40A	300mA
FCL7S0205	240V	10A	500mA	FCL7S0223	240V	40A	500mA
FCL7S0206	240V	16A	10mA	FCL7S0224	240V	63A	30mA
FCL7S0207	240V	16A	30mA	FCL7S0225	240V	63A	100mA
FCL7S0208	240V	16A	100mA	FCL7S0226	240V	63A	300mA
FCL7S0209	240V	16A	300mA	FCL7S0227	240V	63A	500mA
FCL7S0210	240V	16A	500mA	FCL7S0228	240V	80A	30mA
FCL7S0211	240V	25A	10mA	FCL7S0229	240V	80A	100mA
FCL7S0212	240V	25A	30mA	FCL7S0230	240V	80A	300mA
FCL7S0213	240V	25A	100mA	FCL7S0231	240V	80A	500mA
FCL7S0214	240V	25A	300mA	FCL7S0232	240V	100A	30mA
FCL7S0215	240V	25A	500mA	FCL7S0233	240V	100A	100mA
FCL7S0216	240V	32A	30mA	FCL7S0234	240V	100A	300mA
FCL7S0217	240V	32A	100mA	FCL7S0235	240V	100A	500mA
FCL7S0218	240V	32A	300mA				

FCL7-3P(S型)系列产品 FCL7-3P (S type) series product

产品订货号 Product ordering code	额定电压 Rated voltage	额定电流 Rated current	漏电动作电流 Operating current for earth leakage	产品订货号 Product ordering code	额定电压 Rated voltage	额定电流 Rated current	漏电动作电流 Operating current for earth leakage
FCL7S0301	415V	10A	30mA	FCL7S0317	415V	40A	30mA
FCL7S0302	415V	10A	100mA	FCL7S0318	415V	40A	100mA
FCL7S0303	415V	10A	300mA	FCL7S0319	415V	40A	300mA
FCL7S0304	415V	10A	500mA	FCL7S0320	415V	40A	500mA
FCL7S0305	415V	16A	30mA	FCL7S0321	415V	63A	30mA
FCL7S0306	415V	16A	100mA	FCL7S0322	415V	63A	100mA
FCL7S0307	415V	16A	300mA	FCL7S0323	415V	63A	300mA
FCL7S0308	415V	16A	500mA	FCL7S0324	415V	63A	500mA
FCL7S0309	415V	25A	30mA	FCL7S0325	415V	80A	30mA
FCL7S0310	415V	25A	100mA	FCL7S0326	415V	80A	100mA
FCL7S0311	415V	25A	300mA	FCL7S0327	415V	80A	300mA
FCL7S0312	415V	25A	500mA	FCL7S0328	415V	80A	500mA
FCL7S0313	415V	32A	30mA	FCL7S0329	415V	100A	30mA
FCL7S0314	415V	32A	100mA	FCL7S0330	415V	100A	100mA
FCL7S0315	415V	32A	300mA	FCL7S0331	415V	100A	300mA
FCL7S0316	415V	32A	500mA	FCL7S0332	415V	100A	500mA

FCL7-4P(S型)系列产品 FCL7-4P (S type) series product

产品订货号 Product ordering code	额定电压 Rated voltage	额定电流 Rated current	漏电动作电流 Operating current for earth leakage	产品订货号 Product ordering code	额定电压 Rated voltage	额定电流 Rated current	漏电动作电流 Operating current for earth leakage
FCL7S0401	415V	10A	10mA	FCL7S0418	415V	32A	500mA
FCL7S0402	415V	10A	30mA	FCL7S0419	415V	40A	30mA
FCL7S0403	415V	10A	100mA	FCL7S0420	415V	40A	100mA
FCL7S0404	415V	10A	300mA	FCL7S0421	415V	40A	300mA
FCL7S0405	415V	10A	500mA	FCL7S0422	415V	40A	500mA
FCL7S0406	415V	16A	10mA	FCL7S0423	415V	63A	30mA
FCL7S0407	415V	16A	30mA	FCL7S0424	415V	63A	100mA
FCL7S0408	415V	16A	100mA	FCL7S0425	415V	63A	300mA
FCL7S0409	415V	16A	300mA	FCL7S0426	415V	63A	500mA
FCL7S0410	415V	16A	500mA	FCL7S0427	415V	80A	30mA
FCL7S0411	415V	25A	30mA	FCL7S0428	415V	80A	100mA
FCL7S0412	415V	25A	100mA	FCL7S0429	415V	80A	300mA
FCL7S0413	415V	25A	300mA	FCL7S0430	415V	80A	500mA
FCL7S0414	415V	25A	500mA	FCL7S0431	415V	100A	30mA
FCL7S0415	415V	32A	30mA	FCL7S0432	415V	100A	100mA
FCL7S0416	415V	32A	100mA	FCL7S0433	415V	100A	300mA
FCL7S0417	415V	32A	300mA	FCL7S0434	415V	100A	500mA

注：订货时请将汇流排尺寸注明在产品订货号后。
汇流排尺寸 A：15mm接线高度；B：12.2mm 接线高度。
例：FCL7AC201A为15mm接线高度；FCL7AC201B为12.2mm接线高度。

Note: Please specify the size of busbar behind product ordering number when ordering.
Size A of busbar: A: 15mm wiring height. B: 12.2mm wiring height.
Example: The wiring height for FCL7AC201A is 15mm,
The wiring height for FCL7AC201B is 12.2mm.