intelliSMART SERIES

Air Circuit Breaker
400A~6300A

Ultimate Protection...
intelligently SMART

- Pole: 3P, 3P+N, 4P
- Line Load reversibility
- Insulation Voltage (Ui) – 1100V
- Total Breaking Time ≤ 28mS
- Very compact in Design
- OCR with Digital Display only
- 100% N- Phase Current

- ISO 9001 Certified
- Conforms to
  IS/IEC 60947-2;
  IEC 6100-4-2:2008;
  IEC 6100-4-4:2012;
  IEC 6100-4-5:2015;
  IEC 6100-4-8:2009

RoHS Compliant CE

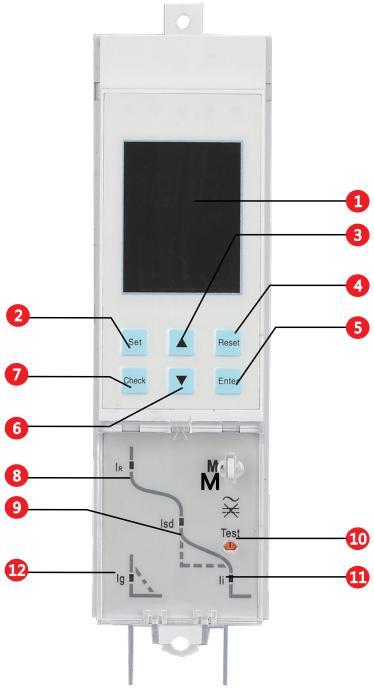
Air Circuit Breaker

Technical Specification

Type			iS-400~2000			iS-2000~3200		iS-4000~6300	
Rated ultimate short circuit breaking capacity (Icu)	AC 500V		50			70		75	
	AC 690V		--			50		--	
Rated service short circuit breaking capacity (Ics)	AC 500V		50			70		75	
	AC 690V		--			50		--	
Rated short-time withstand (Icw.1s)	AC 500V		50			70		75	
	AC 690V		--			50		--	
Rated current I_n (A)			400, 630, 800, 1000, 1250, 1600, 2000			2000, 2500, 3200		4000, 5000, 6300	
Number of poles			3, 3P+N, 4						
Rated voltage Ue (V)			AC 500V						
Rated insulation voltage Ui (V)			1100						
Rated current of N-pole I_n (A)			100%In						
Operation performance	Electric life		7000			4000/3000		2000	
	Mechanical life	Non-maintenance	20,000			15000/10000		7000	
		With Maintenance	40,000			30000/20000		15000	
Connection pattern			Horizontal						
Total breaking time (mS)			≤28						
Closing time(mS)			≤50						
Arcing distance(mm)			0						
Weight (in kg)			400~630	800~1600	2000	2000~2500	3200	4000~5000	6300
Fixed type (3/4P)			44/53	45/54	46/55	57/69	59/72	-/-	-/-
Drawout type (3/4P)			67/82	73/85	75/90	96/118	106/130	201/233	235/-

Protection Features of Micropro Release

B and C Micropro Release



B Type Release / OCR

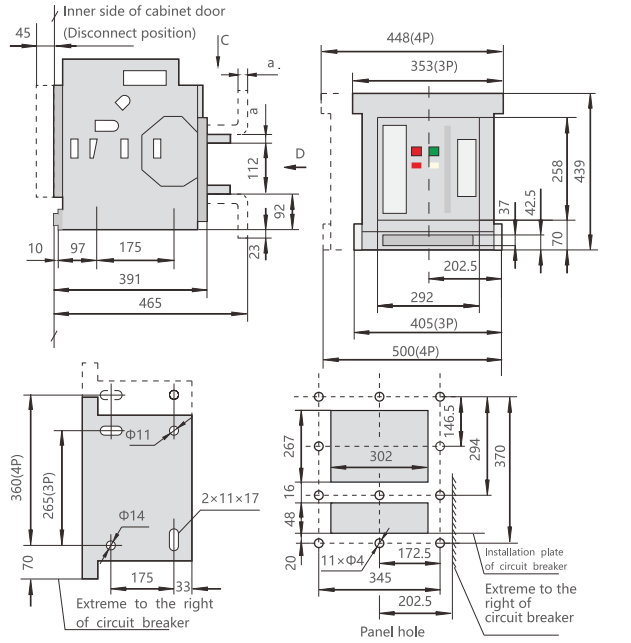
C Type Release / OCR

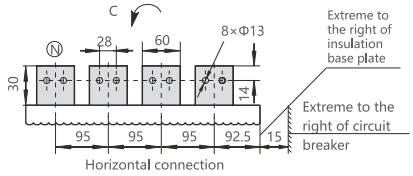
1. Display window Display current value, setting value, tripping time and so on
2. "Set" Switch to setting menu
3. "Up" Change the marquee or the selected parameter
4. "Return" Escape from this grade and return to upper menu or cancel the current selected parameter
5. "Enter" Enter into the next menu directed by the current item, or select current parameter and store modifications
6. "Down" Change the marquee or the selected parameter
7. "Check" Switch to query menu
8. "Ir" light Overload long delay fault indication
9. "Isd" light Short-circuit Short delay indication
10. "Test" Trip test button
11. "Ii" light Short-circuit instantaneous fault indication
12. "Ig" light Asymmetric earthing or neutral line fault indication
13. Alarm light
14. Communication light
15. Run light

Air Circuit Breaker

Dimension & Connection

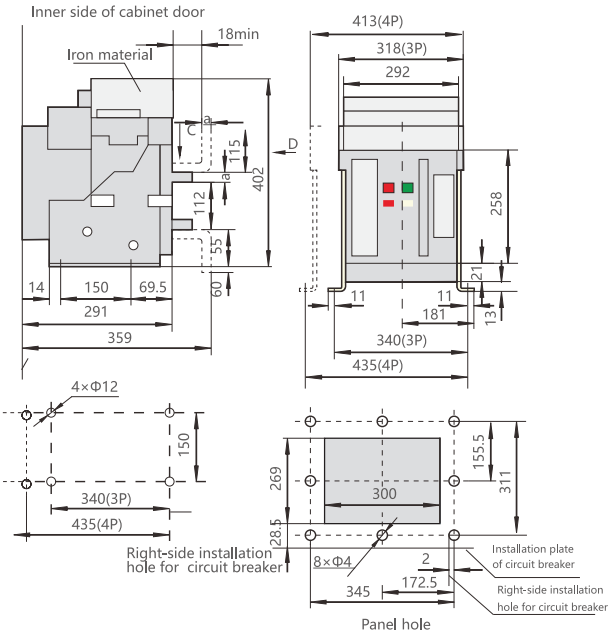
1st frame (400~2000A)
Drawout - Horizontal Rear Terminal

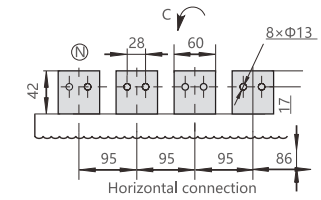




In A	a mm
400~630	10
800~1600	15
2000	20

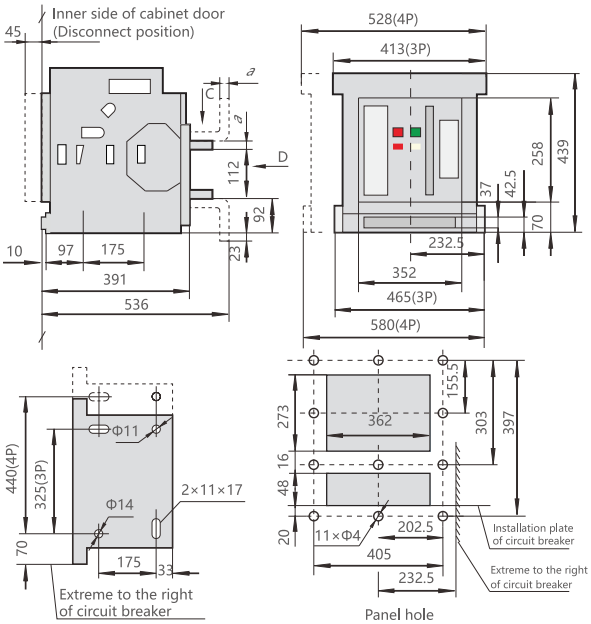
1st frame(400~2000A)
Fixed - Horizontal Rear Terminal

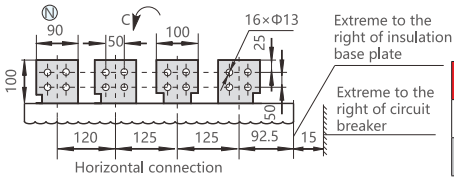




In A	a mm
400~630	10
800~1600	15
2000	20

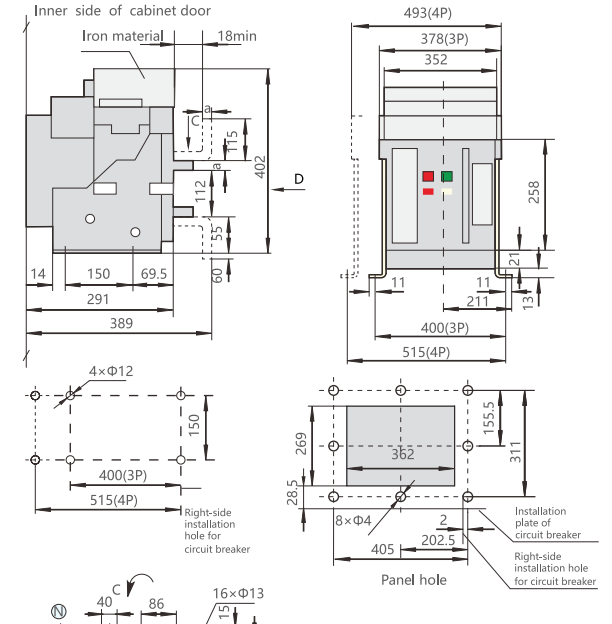
2nd frame(2000~3200A)
Drawout - Horizontal Rear Terminal

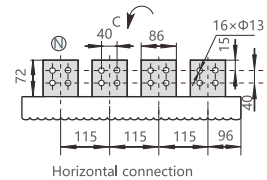




In A	a mm
2000~2500	20
3200	30

2nd frame(2000~3200A)
Fixed - Horizontal Rear Terminal





In A	a mm
2000~2500	20
3200	30

OCR functions list

B Type	C Type
1 Over-current protection (overload, short delay, instantaneous, earthing); vector sum grounding mode.	1 Over-current protection (overload, short delay, instantaneous, earthing); vector sum grounding mode.
2 Neutral line protection	2 Neutral line protection
3 Current measurement	3 Current measurement
4 Eight fault records	4 Eight fault records
5 Eight alarm records	5 Eight alarm records
6 MCR protection	6 MCR protection
7 Operation times records	7 Operation times records
8 Thermal capacity	8 Thermal capacity
9 Overload pre-alarm	9 Overload pre-alarm
	10 Four DO function (optional)
	11 Voltage measurement and protection
	12 Frequency measurement and protection
	13 Power measurement and protection
	14 Electric energy, power-factor
	15 Communication function: MODBUS protocol

Overload long time-delay protection Operating characteristics

Current Ratings Range(Ir)	tolerance	Current	Action time(s)					Time tolerance
(0.4~1)In+ OFF	±10%	≤ 1.05Ir	>2h Non-trip					
		> 1.3Ir	<1h trip					
		1.5Ir(setting time)	2.5	5.0	10.0	20.0	40.0	±10%
		2.0Ir	1.4	2.8	5.5	11.3	22.5	±10%
Phase N Overload and Over-Current Characteristic			100% or 50%(Applicable to 3P+N or 4P)					

Short-circuit short-delay protection

Short-circuit short delay protection has two protection modes. One is inverse time and definite time protection. I2Tsd= (8Ir)2tsd works when current is low. In this formula, I is actual current, Tsd is actual trip time, tsd is set trip delay time. When I is over inverse time set value but below 8Ir, controller will operate according to over-current protection characteristic curve. When I is over both of inverse time set value and 8Ir, controller will operate according to definite time protection. The other is definite time protection and set time is 0.11s, 0.21s, 0.31s, and 0.41s. When I is over ISd but below Ii, OCR will operate according to definite time protection.

Operating characteristics

Current Ratings Range (Isd)	tolerance	Current	Action time(s)					Time tolerance
(1.5~15)Ir+ OFF	±10%	≤ 0.9Isd	In the 2tsd Non-trip					
		> 1.1Isd	In the 2tsd Delayed-trip					
		tsd	0.05	0.1	0.2	0.3	0.4	±15%
		Returnable time	0.035	0.06	0.14	0.25	0.33	±15%

Note: a. When the micropro release is Frame Ⅱ (Inm=3200A), Isd shouldn't be more than 40KA.
b. When the micropro release is Frame Ⅲ (Inm=6300), Isd shouldn't be more than 50KA.
c. When tsd is 0.1s or 0.2s, time permissible error is ±0.040s.

Short-circuit instantaneous protection

Tripping time for instantanous protection (including the inherent breaking time of circuit breaker) should be less than 50ms (effective value protection) or 30ms (peak value protection).

Operating characteristics

Current Ratings Range (Ii)	tolerance	Current	Time tolerance
(1.5~20) In+ OFF	±15%	≤ 0.85Ii	In the 0.2s Non-trip
		> 1.15Ii	In the 0.2s trip

Note: a. When the micropro release is Frame Ⅰ (Inm=2000A), Ii shouldn't be more than 50KA.
b. When the micropro release is Frame Ⅱ (Inm=3200A), Ii shouldn't be more than 65KA.
c. When the micropro release is Frame Ⅲ (Inm=6300), Ii shouldn't be more than 75KA.

Operating characteristics of single-phase earthing protection

Current Ratings Range(Ir)	tolerance	Current	Action time(s)					Time tolerance
Inm=1000/2000, (0.1~0.8)In+ OFF Inm=3200/4000/6300, (500~1200)A+ OFF	±10%	≤ 0.9Ig	In the 2tg Non-tripping					
		> 1.1Ig	In the tg±0.032s or tg(1±25%) Tripping					
		tg	0.05	0.1	0.2	0.3	0.4	±15%
		Returnable time	0.035	0.06	0.14	0.25	0.33	±15%

Note: a. When tg is 0.05s, 0.1s or 0.2s, time permissible error is ±0.040s;
b. When Inm is 1000A, Ig should be more than 100A. When Inm is 2000A, Ig shouldn't be more than 1200A.
c. When Inm is 3200A, 4000A or 6300A, Ig should be between 500A and 1200A.

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