

Moulded Case Circuit Breakers-ADM4



DESCRIPTION / APPLICATION

With insulation voltage up to 800V, this product is applicable for distribution system of AC 50/60Hz, rated working voltage 690V and rated working current from 32A to 1250A.

This circuit breaker has protection features such as overload long time delay inverse time limit, short circuit short time delay inverse time limit, short circuit short time delay time limit, short circuit instantaneous protection and pre-alarm function. It also can be selected by different auxiliary modules to get ground protection function, external DC12V test function, etc.

It is in conformity of IEC60947-2 standards.

PROTECTION & MAIN DATA¹

Settings are made using the adjustment dials with fine adjustment possibilities.

Long Time Delay Overload Protection(IR)

Inverse time protection against overloads with an adjustable current pick-up I_r set using a dial and adjustable time delay T_r .

Short Time Delay Short-circuit Protection with fixed time delay(Isd)

Protection with an adjustable pick-up I_{sd} . Tripping takes place after a very short delay used to allow discrimination with the downstream device.

Short-circuit Instantaneous Protection

Instantaneous short-circuit protection with a fixed pick-up.

IR/TR - setting of overload long time delay protection current ($X I_n$) and tripping time.

Isd/Tsd - setting of short-circuit short time delay protection current ($X I_r$) and tripping time.

li/Ti - setting of short-circuit instantaneous protection current($\times I_r$) and tripping time, $T_i < 100\text{ms}$.

I_p - pre-alarm indication current($\times I_r$).

I - actual working/operational current.

Indicator Light

- working indicator
- pre-alarm indicator
- overload indicator

1/ indicator light for working indication - The indicator light always lit, when actual working current I reaches the current of the controller's normal operation current.

2/ indicator light for pre-alarm indication - The indicator light flashes, when actual working current $I \geq 90\% I_p$; The indicator light always lit, when actual working current $I > 105\% I_p$.

3/ indicator light for over-load indication - The indicator light always lit, when actual working current $I \geq 115\% I_R$.

Normal Working Condition

1. The ambient working temperature is $-5^\circ\text{C} \sim +40^\circ\text{C}$, and average temperature of 24 hours does not exceed $+35^\circ\text{C}$.
2. The altitude of the installation site does not exceed 2000m.
3. The pollution degree is level 3.
4. The vertical inclination of the circuit breaker installation does not exceed 5° .

Main Technical Data

Electronic Release	ADM4-125		ADM4-250	ADM4-400	ADM4-630	ADM4-800	ADM4-1250
In_m(A)	125		250	400	630	800	1250
I_n(A)	100	125	250	400	630	800	1250
I_r(A)	63A,65A, 70A,75A, 80A,85A, 90A,95A, 100A	63A,65A, 70A,75A, 80A,85A, 90A,95A, 100A,125A	100A,125A, 140A,160A, 180A,200A, 225A, 250A	200A, 225A, 250A, 280A, 315A, 350A, 400A	400A, 420A, 440A, 460A, 480A, 500A, 530A, 560A, 600A, 630A	630A,640A, 660A,680A, 700A,720A, 740A,760A, 800A	630A, 700A, 800A, 1000A, 1250A

Ue(V)		415,690	415,690	415,690	415,690	415,690	415
Ui(V)		800	800	800	800	800	800
Uimp(V)		8000	8000	8000	8000	8000	8000
Pole(s)		3P, 4P	3P, 4P	3P, 4P	3P, 4P	3P, 4P	3P
Icu KA	AC 415V	50	50	65	65	75	80
	AC 600V	20	20	20	20	30	/
Ics KA	AC 415V	35	35	42	42	50	50
	AC 600V	10	10	15	15	20	/
Electrical Life(times)		8000	8000	7500	7500	7500	500
Mechanical Life(times)		20000	20000	10000	10000	10000	3000

Note:

Inm(A) - Frame size rated current

In(A) - Rated Current

Ir(A) - Overload long delay tripping current setting value

Ue(V) - Rated operational voltage

Ui(V) - Nominal insulation voltage

Uimp(V) - Rated impulse withstand voltage

Setting Method

Overload long time delay protection features		
Tripping Features	When actual working current $I \leq 1.05 I_r$, tripping time $T > 2h$ non trip	
	When actual working current $I > 1.2 I_r$, tripping time T trips in 2h	
Maximum inverse time delay(S)	Adjustable range (Tr): 12S, 60S, 80S, 100S, OFF	
$T = \frac{(2I_r)^2}{I^2} - I_r$		
T - actual tripping time I - testing current	Time accuracy: Permissible error of operation time: $\pm 15\%$	
Short-circuit short time delay protection features		
Adjustable Value Isd(A)	Adjustable range for 100-630A 2,3,4,5,6,7,8,10,12 X IR	Adjustable range for 800-1250A 2,2.5,3,4,5,6,7,8,10 X IR
Tripping Features	When actual working current $I \leq 0.9 I_{sd}$ - non trip	
	When actual working current $I > 1.1 I_{sd}$ - trips	
time limit	$I > 1.5 I_{sd}$	Ajustable Tripping Time (Tsd): 60mS, 100mS, 200mS, 300mS, OFF

+ reverse time limit	I ≤ 1.5 I _{sd} inverse time limit	$T = \frac{(1.5 I_{sd})^2}{I^2} t_{sd}$ Time accuracy: Permissible error of operation time: ±15%
Short-circuit instantaneous protection features		
Adjustable Value I _i (A)	Adjustable range for 100-630A 4,6,7,8,10,11,12,13,14 X IR (12I _r -14I _r for motor protection)	Adjustable range for 800-1250A 4,5,6,7,8,9,10,11,12 X IR (12I _r for motor protection)
Tripping Features	When actual working current I ≤ 0.85 I _i - non trip	
	When actual working current I > 1.15 I _i - trips	
	Time accuracy < 100mS	
Pre-alarm protection features		
Adjustable Value I _p (A)	Adjustable range 0.7,0.75,0.8,0.85,0.9,0.95,1x IR	
Tripping Features	When actual working current I < 0.9 I _p , the indicator light extinguish	
	When actual working current I > 1.05 I _p , the indicator light always lit	
	When actual working current 0.9 I _p ≤ I ≤ 1.05 I _p , the indicator light flashes	
	Time accuracy: Permissible error of operation time: ±15%	