



DAM1 Series Moulded Case Circuit Breaker



Distributor by

ISO9002 © CB CCC CE



Contents

- 01 DAM1 series moulded case circuit breaker
- 08 Shunt release series
- 09 Under Voltage release series
- 10 Auxiliary contacts series
- 11 Alarm contacts series
- 12 Auxiliary and alarm contacts series
- 13 Rotary handle operating mechanism
- 15 DAM1 Electrical operation mechanism

DAM1 series moulded case circuit breaker

Application

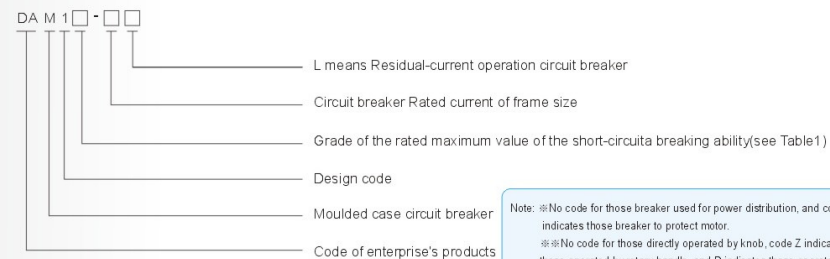
DAM1 series moulded case circuit breaker (hereinafter refer to as circuit breaker) is a new model which designed according to international standard and manufactured with advanced technology. The rating insulation voltage of this type circuit breaker is between 400V ($I_{nm} \leq 160A$) and 690V ($I_{nm} \geq 250A$), and it is widely used in AC power distribution of which frequency is 50Hz, rating current is between 10A and 1600A and rating voltage is in the range of 380V~400V and 660V~690V. It can protect the wire and power supply from overload, short circuit and undervoltage, and also function as non-frequent switch for wire under normal condition.

The circuit breaker of which rating current is under 400V can be used as non-frequent startup for squirrel-cage motor, or break down during running, and also can protect motor from overload, short circuit and undervoltage

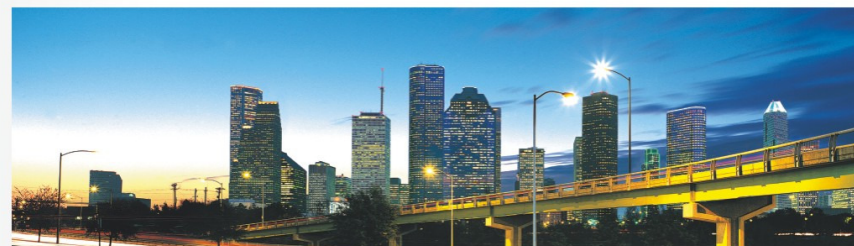
DAM1 series circuit breaker and DAM1L series electric leakage of remnant circuit breaker can install with some other electric or mechanic accessories such as under-voltage release, shunt release, auxiliary contact, alarm contact, motor operation mechanism and rotary handle operating mechanism.

DAM1 series residual-current operation circuit breaker (also regard as leakage protective circuit breaker) has function of protecting human body from electric shock and equipment from electrical leakage, still also, it can prevent fire caused by insulation problem of equipment.

Types and meanings

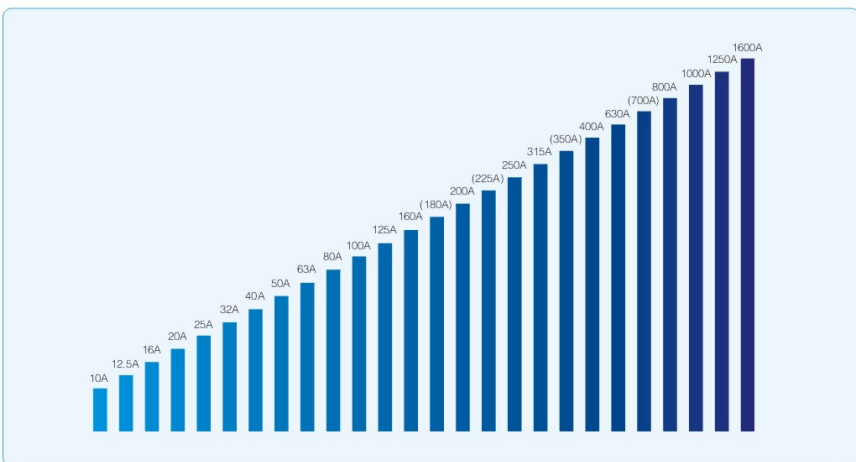


Note: ※No code for those breaker used for power distribution, and code 2 indicates those breaker to protect motor.
 ※※No code for those directly operated by knob, code Z indicates those operated by rotary handle, and D indicates those operated by electric power.



Technical Features

With a variety of specification for rating current, so can satisfy customers with protection for different circuit capacity.



Circuit breaking capacities

rating current of case frame size(A)	rating ultimate short circuit breaking capacity Icu					
	25kA	35kA	50kA	65kA / 70kA	85kA	200kA
63/63L	B	N	S	— / —		
125/125L	B	N	S	— / —		
160/160L	B	N	S	— / X		
250/250L		N	S	H / —	G	X
630/630L		N	S	— / H	G	X
800		N	S	— / H	G	X
1250			S	H / —	G	
1600			S	H / —	G	

The short circuit breaking capacity is very high

1.B-Basic type; 2.N-Normal type; 3.S-Standard type; 4.H-High breaking type; 5.G-Highest breaking type; 6.X-Current limit type

Circuit Breaker the identity of protect

Variable parameter of thermal overload protective current setting

Characteristics of Thermal magnetic Over-current release



Characteristics of inverse time delay thermal tripping-Ranges of current settings of inverse time delay thermal

Ranges of current setting of inverse time delay thermal tripping and variable parameter of thermal overload protective current setting





Rated current of frame size I _{rn}	Circumstance temperature						Rated current I _n	Current settings of inverse time delay		Instantaneous Current (A)Adjustable			Instantaneous tripping Current	Instantaneous release current multiple selectable(I _n)
	+10°C	+20°C	+30°C	+40°C	+50°C	+60°C		Setting I _{r1}		5In	7.5In	10In		
								A/B/C Phase	N Pole					
160/1P 200/2P 200L/2P 63/63L 125/125L	1.19	1.03	1.06	1.0In	0.93	0.87	10A	10A	10A	-	-	-	500A	-
							12.5A	12.5A	12.5A	-	-	-	500A	-
							16A	16A	16A	-	-	-	500A	10
							20A	20A	20A	-	-	-	500A	10
							25A	25A	25A	-	-	-	500A	10
							32A	32A	32A	-	-	-	500A	10
							40A	40A	40A	-	-	-	500A	10
							50A	50A	50A	-	-	-	500A	10
							63A	63A	63A	-	-	-	630A	12
							80A	80A	80A	-	-	-	800A	12
							100A	100A	100A	-	-	-	1000A	12
							125A	125A	125A	-	-	-	1250A	12
							160A	160A	160A	-	-	-	1600A	12
160/160L	1.15	1.10	1.05	1.0In	0.94	0.88	32A	22.4-32A	22.4-32A	-	-	-	500A	10
							40A	28-40A	28-40A	-	-	-	500A	10
							50A	35-50A	35-50A	-	-	-	500A	10
							63A	44.1-63A	44.1-63A	-	-	-	630A	12
							80A	56-80A	56-80A	-	-	-	800A	12
							100A	70-100A	70-100A	-	-	-	1000A	12
							125A	87.5-125A	87.5-125A	-	-	-	1250A	12
							160A	112-160A	112-160A	-	-	-	1600A	12
							125A	87.5-125A	87.5-125A	-	-	-	1250A	12
							160A	112-160A	112-160A	-	-	-	1600A	12
							(180A)	126-180A	126-180A	-	-	-	1800A	12
							200A	140-200A	140-200A	-	-	-	2000A	12
							(225A)	157.5-225A	157.5-225A	-	-	-	2250A	12
250A	175-225A	175-225A	-	-	-	2500A	12							
(400) 400L 630	1.13	1.11	1.04	1.0In	0.92	0.85	250A	175-250A	175-250A	1250	1875	2500	2500A	12
							315A	220.5-315A	220.5-315A	1575	2363	3150	3150A	12
							(350A)	245-350A	245-350A	1750	2625	3500	3500A	12
							400A	280-400A	280-400A	1750	2625	4000	4000A	12
							500A	350-500A	350-500A	2500	3750	5000	5000A	-
							630A	441-630A	441-630A	3150	4725	6300	6300A	-
(630) 800	1.10	1.08	1.03	1.0In	0.84	0.77	400A	400A	400A	-	-	-	4000A	-
							500A	500A	500A	-	-	-	5000A	-
							630A	630A	630A	-	-	-	6300A	-
							(700A)	700A	700A	-	-	-	7000A	-
							800A	800A	800A	-	-	-	8000A	-
							800A	800A	800A	-	-	-	-	-
(1250) 1600	1.08	1.06	1.02	1.0In	0.8	0.73	800A	800A	800A	-	-	-	-	-
							1000A	1000A	1000A	-	-	-	-	-
							1250A	1250A	1250A	-	-	-	-	-
							1600A	1600A	1600A	-	-	-	-	-

Note:400L No instantaneous adjustable current, but with over-load long time delay adjustable current.

Technical Features

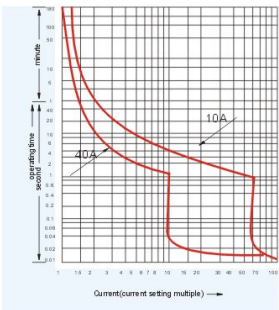
DAM1 series MCCB							
Breaking capacity		B	N	S	N	S	X
Rated current of frame size	Inm	125	125L		160	160L	
Rated current	I _n	12.5, 16, 20, 25, 32, 40, 50, 63, 80, 100, 125	32, 40, 50, 63, 80, 100, 125, 160		16, 20, 25, 32, 40, 50, 63, 80, 100, (125)		
Rated insulation voltage	Ui	690V		690V			
Rated operating voltage	U _e	400/415V		400/415V			
Number of poles		3/4	L=4		3/4	L=4	
Rated current of N pole		=In		=In			
Icu AC400V/50Hz 0-CO	(kA)	25	35	50	35	50	70
Rated ultimate short-circuit breaking capacity		9/0.5		19/0.5			
Ics AC400V/50Hz 0-CO-CO	(kA)	12.5	17.5	37.5	17.5	37.5	70
Rated service short-circuit breaking capacity		9/0.3		73.5/0.25		105/0.25	
Icm(peak)/cos φ AC400V/50Hz 0-CO	(kA)	73.5/0.25		73.5/0.25		110/0.25	
Rated short-circuit making capacity		9/0.5		19/0.5			
Rated the current of remnant short-circuit making Capacity(I _{Δm})/kA/cos φ		9/0.5		19/0.5			
Rated the current of remnant no-motion I _{Δn}	(mA)	30	100	300	100	300	
Rated the current of remnant no-motion I _{Δno}	(mA)	15	50	150	50	150	
Icm AC400V/50Hz Is	(kA)	—		—			
Rated short-time withstand current		—		—			
Uimp Rated impulse withstand voltage	(V)	10000		8000			
Dielectric property	(V)	2500		3000			
Endurance	Total cycles	10000		8000			
	Electrical endurance	1500		1000			
	Mechanical endurance	8500		7000			
Ionization distance	(mm)	≤30/0		≤30/0※			
Over current trip unit	Thermal magnetic release	■		■			
	Intelligent trip unit	—		—			
Utilization category	Main circuit	A/0		A/0			
	Auxiliary circuit and control circuit	AC-15		AC-15			
Outline dimensions	W(mm)	3P	76	90		90	
		4P	101	101		120	120
	L(mm)	3P	120	120		120	
		4P	120	155		120	120
	H(mm)	3P	70	70		70	
		4P	70	70		70	
Weight	Fixed version 3P/4P	0.92/1.3	—		1.2/1.6	—	
	Plug-in version 3P/4P	1.2/1.5	—		1.4/1.8	—	
	Draw-out version 3P/4P	—	—		—	—	

Note: The datas in the round bracket are not normal specifications, the user should point out specially when he needs.

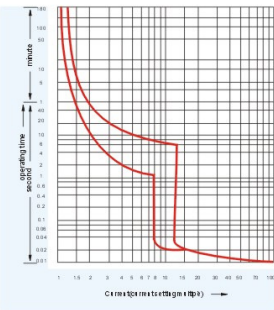
																																		
N	S	H	G	X	N	S	H	G	X	N	S	H	G	X	S	H	G																	
250(315)		250L			250X	630(400)			630L(400L)			400X			800(630)			1600(1250)																
125, 160(180), 200(225), 250(315)					250, 315(350), 400, 500, 630					250, 315(350), 400					400, 500, 630(700), 800					400, 500, 630					800, 1000, 1250, 1600									
690V					690V					690V					690V					690V														
400/415V					400/415V					400/415V					400/415V					400/415V														
3/4					3/4					3/4					3/4					3/4														
=In					=In					=In					=In					=In														
35	50	65	85	200	35	50	70	85	200	35	50	70	85	200	65	85	100																	
35	37.5	48.75	51	200	35	37.5	52.5	52.5	200	35	37.5	52.5	52.5	200	50	50	50																	
77/0.25	114/0.25	143/0.2	178/0.2	440	77/0.25	110/0.25	154/0.2	187/0.2	440	77/0.25	110/0.25	154/0.2	187/0.2	440	105/0.25	143/0.2	220/0.2																	
120.3					19/0.5																													
100					100					100					100																			
50					50					50					50																			
—					—					—					10					20														
8000					8000					8000					8000					8000														
3000					3000					3000					3000					3000														
8000					8000					8000					5000					3000														
1000					1000					1000					1000					500														
7000					7000					4000					4000					2500														
≤30/0※					≤30/0※					≤60/0※					≤80/0※					≤80/0※														
■					■					■					■					■														
—					—					—					■					■														
A/B					A/B					A/B					A/B					A/B														
AC-15					AC-15					AC-15					AC-15					AC-15														
105					105					140					140					210					406									
140					140					184					184					280					406									
170					254/3390					264					360					268					103.5									
170					254/3390					264					360					268					103.5									
103.5					103.5					103.5					103.5					103.5					15									
103.5					103.5					103.5					103.5					103.5					—									
2.7/3.5					41.5/5.5					5					5.1/7.1					9.6/12.5					25.4									
3.2/4.2					4.6/6					8.2					6.5/8.5					8.2					—									
3.6/4.6					5/6.4					9					6.5/8.7					9					12.2/15.3					22/30.1				

Protective Curve

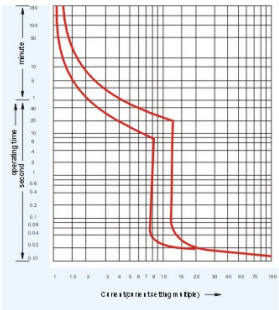
DAM1-63
DAM1-63L



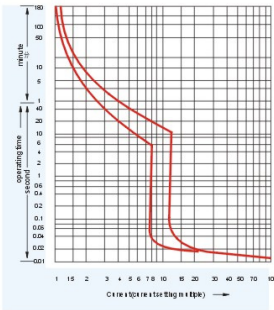
DAM1-125
DAM1-125L



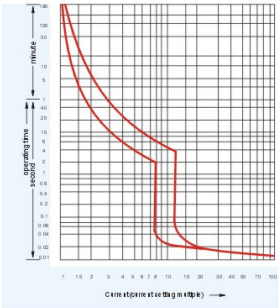
DAM1-160
DAM1-160L



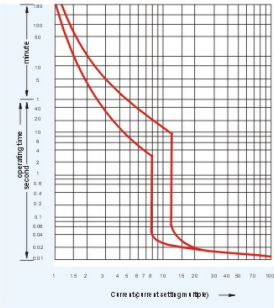
DAM1-250
DAM1-250L



DAM1-630(400)
DAM1-630L(400L)



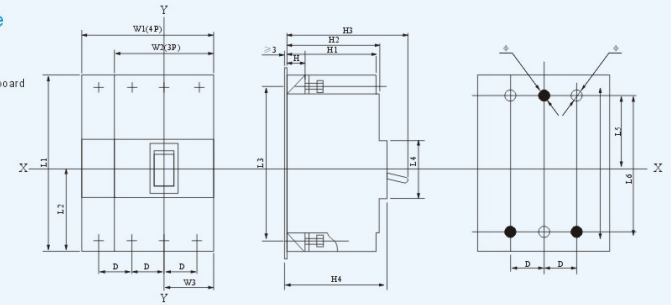
DAM1-800



Fixed type

DAM1-63~160(L)
DAM1X-160

Connect wire in front of board



Type	D	L1	L2	L3	L4	L5	L6	W1	W2	H	H1	H2	H3	H ϕ	ϕ
DAM1-63/125	25	120	48	102	45	62	102	101	76	25.5	67.5	70	91	75	4.5
DAM1-63/125L	25	155	83	135	45	62	135	101	—	25.5	67.5	70	91	75	4.5
DAM1-160	30	120	48	102	45	62	102	120	90	27.5	67.5	70	93	75	4.5
DAM1X-160	30	120	48	102	45	62	102	120	90	27.5	67.5	70	93	75	4.5
DAM1-160L	30	155	83	135	45	62	135	120	—	27.5	67.5	70	93	75	4.5

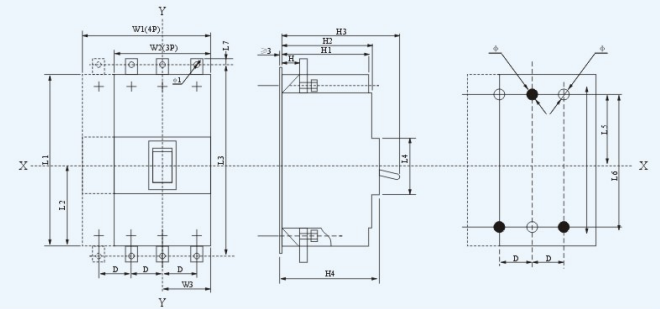
Fixed type

DAM1-250~1600

DAM1-250~630L

DAM1X-250~800

Connect wire in front board



Type	D	L1	L2	L3	L4	L5	L6	W1	W2	H	H1	H2	H3	H4	ϕ	L7	ϕ 1
DAM1-250	35	170	87.25	206	105	73.75	139	140	105	25	101.5	103.5	135	113	5.5	10.8	ϕ 8.5
DAM1-250L	35	210	112.5	246	105	73.75	179	140	—	25	101.5	103.5	135	113	5.5	10.8	ϕ 8.5
DAM1X-250	35	255	87.25	278.5	105	154.5	224	140	105	25	101.5	103.5	135	113	5.5	10.8	ϕ 8.5
DAM1X-400	43.75	339	125.25	366	105	192.5	299	140	183.75	25	101.5	103.5	135	113	5.5	12.0	ϕ 10.5
DAM1-630(400A)	43.75	254	125.25	281	105	107.25	214	140	183.75	25	101.5	103.5	135	113	5.5	12.0	ϕ 14
DAM1-630L(400L)	43.75	254	117.5	281	105	107.25	214	183.75	—	25	101.5	103.5	135	113	5.5	12.0	ϕ 10.5
DAM1-800	70	268	142.75	241	105	109.75	237	280	210	23	101.5	103.5	167.5	115	5.5	10.0	ϕ 11
DAM1X-800	70	406	142.75	479	105	256.5	375	280	210	23	101.5	103.5	167.5	115	5.5	10.0	ϕ 11
DAM1-1600	70	406	189	513	105	203	378	280	210	39	137	138.5	204.5	152	5.5	13.5	ϕ 11

Shunt release series

Shunt release application:

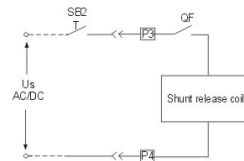
The shunt release is intended for remote controlling of open of MCCB
Release instantaneous duty.

Characteristics of Shunt release:

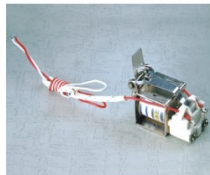
Electrical accessories		Shunt release	
Range of supply voltage		$(0.7-1.1) \times U_s$	
Rated control supply voltage U_s	Power supply	AC 50Hz	220V 380V
		Power loss	150VA 150VA
		DC	110V 220V
		Power loss	150W 150W

Wiring diagram of Shunt release:

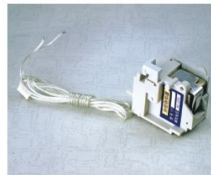
SB2-Opening Push-Button(ready by user)
P3, P4-Terminal number
 U_s -Control power
QF-Auxiliary contact



Only broken lines are connected by user, other wiring have been connected by factory, which offers user reference.



DAM1 circuit breaker series
Shunt release 125, 160FT



DAM1 Circuit breaker series
Shunt release 250, 400FT



DAM1 circuit breaker series
Shunt release 630, 800, 1250FT

Under Voltage release series

Under voltage release application:

The under voltage release is intended for under voltage protection of circuit and electric equipment.
Release uninterrupted duty.

Characteristics of Under voltage release:

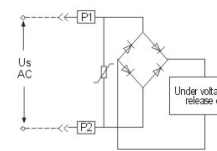
U_e (V)Rated operational voltage	AC415	AC220	DC110	DC220
Operational voltage	$(0.35-0.7) \times U_e$			
Ensured closing voltage	$(0.85-1.1) \times U_e$			
Ensured non closing voltage	$\leq 0.35U_e$			
Power loss	10VA		4W	

Wiring diagram of Under voltage release:

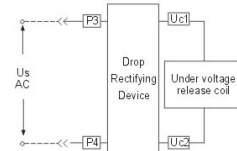
U_s -Control Power

P1, P2-Terminal number U_{c1} , U_{c2} -Terminal number

63A-1600A Embedded



63A-1600A Attached



Only broken lines are connected by user, other wiring have been connected by factory, which offers user reference.



DAM1 circuit breaker series
Under voltage release 125, 160QT-II



DAM1 circuit breaker series
Under voltage release 250, 400QT



DAM1 circuit breaker series
Under voltage release 630, 800, 1250QT

Auxiliary contacts series

Auxiliary contacts application:

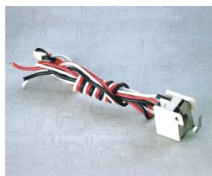
The auxiliary contacts are intended for automatic controlling of the auxiliary circuit of MCCB, such as indication of the open and close states of MCCB.

Auxiliary contacts size:

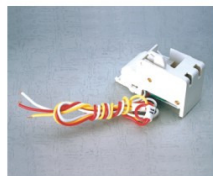
- 1). 1N/O and 1N/C
- 2). 2N/O and 2N/C
- 3). 4N/O and 4N/C

Wiring diagram of Auxiliary contacts:

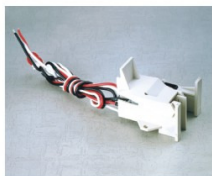
State of MCCB	State of auxiliary contacts	diagram of Wiring
Close position	<ul style="list-style-type: none"> ◆ 1 set of auxiliary contacts, but 2 sets of contacts to be supplied ◆ For Inm=63A ~ 225A 	
	<ul style="list-style-type: none"> ◆ 2 sets of auxiliary contacts, but 4 sets of contacts to be supplied ◆ For Inm=250A ~ 1600A 	
Open position	<ul style="list-style-type: none"> ◆ 1 sets of auxiliary contacts, but 2 sets of contacts to be supplied ◆ For Inm=63A ~ 225A 	
	<ul style="list-style-type: none"> ◆ 2 sets of auxiliary contacts, but 4 sets of contacts to be supplied ◆ For Inm=250A ~ 1600A 	



DAM1 circuit breaker series
Auxiliary contacts 125, 160FC



DAM1 circuit breaker series
Auxiliary contacts 250, 400FC



DAM1 circuit breaker series
Auxiliary contacts 630, 800, 1250FC

Alarm contacts series

Alarm contacts application:

The alarm contacts are used for alarm of open action of current, and under voltage of circuit and equipment.

Alarm contacts size:

- 1) 1N/O and 1N/C

Wiring diagram of Alarm contacts:

State of MCCB	State of alarm contacts	diagram of Wiring
Close position		
open position		



DAM1 circuit breaker series
Alarm contacts 125, 160BC



DAM1 circuit breaker series
Alarm contacts 250, 400BC



Auxiliary and alarm contacts series

Auxiliary and alarm contacts application:

The auxiliary contacts are intended for automatic controlling of the auxiliary circuit of MCCB, and of open action of current, and under voltage of circuit and equipment.

Auxiliary and alarm contacts size:

- 1).1N/O and 1NC+1alarm contacts
- 2).2N/O and 2NC+1alarm contacts

Wiring diagram of Auxiliary and alarm contacts:

State of MCCB	State of alarm contacts	diagram of Wiring
Close position		<p>Explanation: Us1 is auxiliary power Us2 is alarm power</p>
open position		<p>Explanation: Us1 is auxiliary power Us2 is alarm power</p>



DAM1 circuit breaker series
Auxiliary and alarm contacts 250,
400BC

Rotary handle operating mechanism

CS2 type rotary handle operating mechanism



CS2 type rotary handle
operating mechanism

- ◆ Mounted on MCCB.
- ◆ Key lock for MCCB in open position.
- ◆ Interlock with compartment door.
- ◆ Selectable accessories.

A type handle



A-1 type handle

- ◆ Short handle structure.
- ◆ Mounted on compartment door.
- ◆ Fitted with CS1 or CS2 operating mechanism.
- ◆ Degree of protection IP30.
- ◆ Selectable accessories.



A-2 type handle

- ◆ Long handle structure.
- ◆ Mounted on compartment door.
- ◆ Fitted with CS1 or CS2 operating mechanism.
- ◆ Degree of protection IP30.
- ◆ Selectable accessories.



Rotary handle operating mechanism

F1-1 type handle



- ◆ Short handle structure.
- ◆ Mounted on compartment door.
- ◆ Fitted with CS1 or CSS operating mechanism.
- ◆ Degree of protection IP30.
(The handle of IP54 is also available on request)
- ◆ Selectable accessories.

F1-2 type handle



F1-2 type handle

- ◆ Long handle structure.
- ◆ Mounted on compartment door.
- ◆ Fitted with CS1 or CSS operating mechanism.
- ◆ Degree of protection IP30.
(The handle of IP54 is also available on request)
- ◆ Selectable accessories.

CSS type rotary handle operating mechanism



CSS-63A - 160A rotary handle operating mechanism

- ◆ Eccentric structure.
- ◆ Mounted on MCCB.
- ◆ Fitted with A type or F type handle.
- ◆ Interlock with compartment door.
- ◆ Selectable accessories.



CSS-250A - 400A rotary handle operating mechanism



CSS-630A - 1600A rotary handle operating mechanism

DAM1 Electrical operation mechanism

- ◆ The electric operating mechanism is available remote close of MCCB.
- ◆ The types of electrical operating mechanism are shown in table 2

Types of electrical operating mechanism:

Rated current of frame size Imin	Types of electrical operating mechanism			
	CD1	CD2	CD3	CD
63A	-	CD2-63	-	-
125A	-	CD2-100	-	-
160A	-	CD2-160	-	-
250A	CD1-250	CD2-250	-	CD-250
400A	CD1-400	-	-	CD-400
630A	-	-	CD3-630	CD-630
800A	-	-	CD3-800	CD-800
1250A	-	-	CD3-1250	CD-1250
1600A	-	-	CD3-1600	CD-1600

Description of selection:

Customer can make selection of the electrical operating mechanism according to the prices and types e.g. If you want to order CD type 630A electric operating mechanism, having rated operational voltage AC220V with total quantities of 12, you should write in this way in your order: CD-630A/AC220V, 12 sets.



CD1 type electrical operating mechanism



CD1 type electrical operating mechanism

- ◆ Direct-acting, and manual close/open of MCCB.
- ◆ Equipped with emergency opening button.
- ◆ Customer can fit padlock on it for MCCB in open position (up to a Max of 3 padlocks with max 6mm dia). It can be supplied with:
 - ◆ One key and one lock for one MCCB.
 - ◆ One key and tow locks for two MCCB.
 - ◆ Two keys and three locks for three MCCB.
- ◆ Suitable for MCCB:
 - ① Inm=250A
 - ② Inm=400A

The specific type should be stated clearly in your order.

- ◆ Selectable accessories.

Characteristic

Characteristics of CD1 electrical operating mechanism

Electrical accessories		Electrical operating mechanism	
Range of supply voltage		(0.85-1.1) × Us	
Rated control supply voltage	Power supply	AC 50Hz	220V 380V
		Power loss	Irrush power consumption
	Normal load		360VA 360VA
	DC	110V	220V
		Power loss	Irrush power consumption
	Normal load		360W 360W
Closing time		0.1S	
Opening time		0.1S	

CD3 type energy stored electrical operating mechanism



CD3 type energy stored electrical operating mechanism

- ◆ Spring charged by motor and/or manual.
- ◆ Close outed by motor (close magnet) and/or manual.
- ◆ For closing of MCCB, the procedures are energy stored with spring charged by motor, then closing MCCB.
- ◆ Having electrical opening function.
- ◆ Equiped with emergency opening button.
- ◆ Customer can fit padlock on it for MCCB in open position (up to a Max of 3 pandlocks with max 6mm dia). It can be supplied with:
 - ◆ One key and one lock for one MCCB.
 - ◆ One key and tow locks for two MCCB.
 - ◆ Two keys and three locks for three MCCB.
- ◆ Suitable for MCCB:①Inm=630A ②Inm=800A ③Inm=1250A ④Inm=1600A

The specific type should be stated clearly in your order.

- ◆ Selectable accessories.

Characteristic

Characteristics of CD1 electrical operating mechanism

Electrical accessories		Electrical operating mechanism	
Range of supply voltage		(0.85-1.1) × Us	
Rated control supply voltage	Power supply	AC 50Hz	220V 380V
		Power loss	Irrush power consumption
	Normal load		180VA 180VA
	DC	110V	220V
		Power loss	Irrush power consumption
	Normal load		180W 180W
Closing time		0.1S	
Opening time		0.1S	