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Publication Instructions

No: AOELEC2507CN

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MOTOR CIRCUIT BREAKER

COMPLETE PROTECTION
FOR THE MOTOR



COMPLETE PROTECTION MOTOR CIRCUIT BREAKER

Provide short circuit protection, overload protection, motor (ON OFF) control.



High breaking capacity
Breaking capacity up to 10-100 KA.



Long service life
Electrical life up to 100,000 cycles, 5-10 times longer than ordinary circuit breakers.



Adjustable current setting
During use, it can be adjusted according to the actual operating current to the appropriate current setting indicator position.



Portable accessory design
Various auxiliary accessories can be easily and reliably inserted and snapped into place outside the main body.

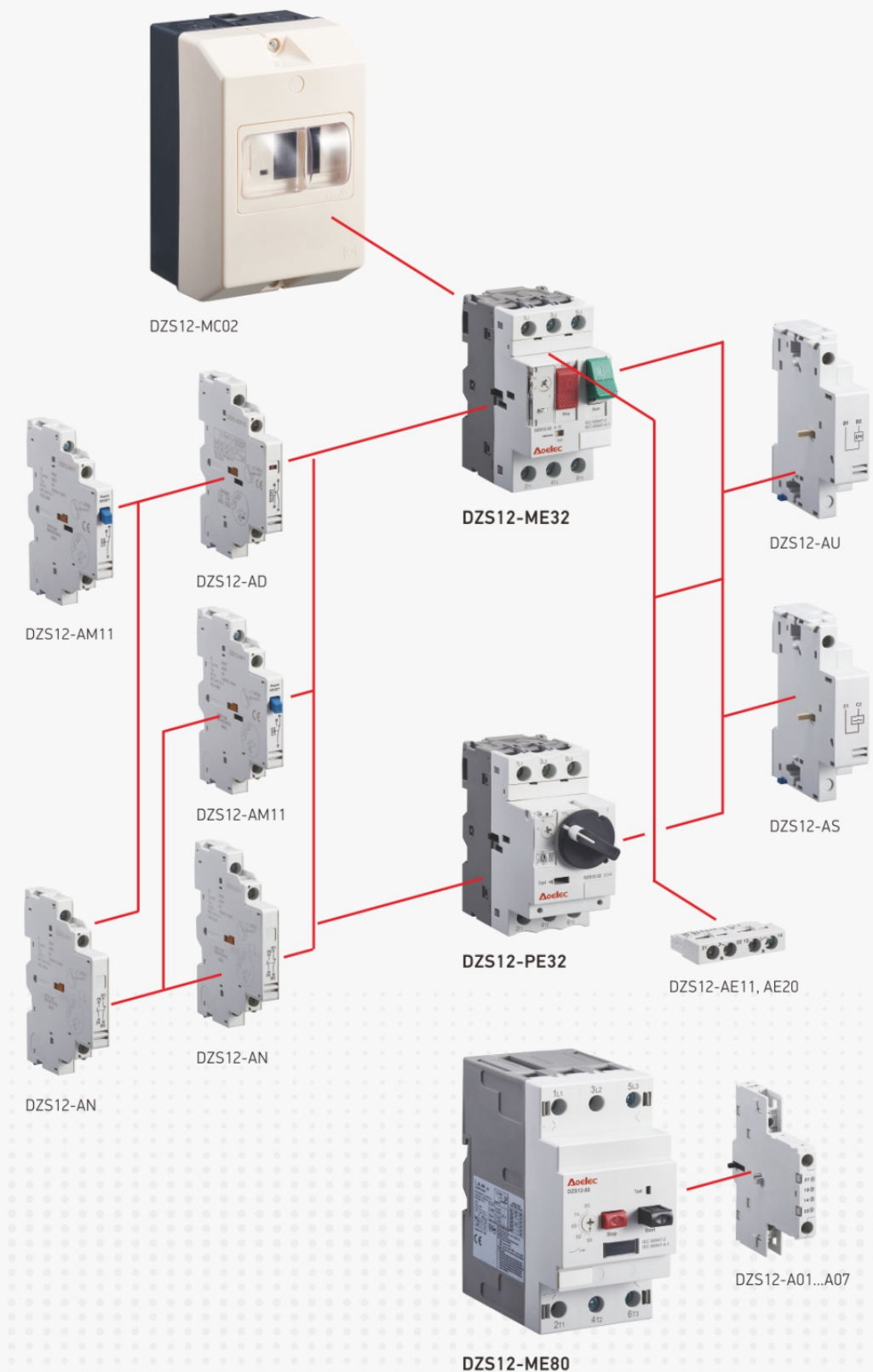


Testable tripping mechanism design
Through the Test function, the mechanism can be tripped, allowing for convenient simulation testing with compatible alarm accessories.

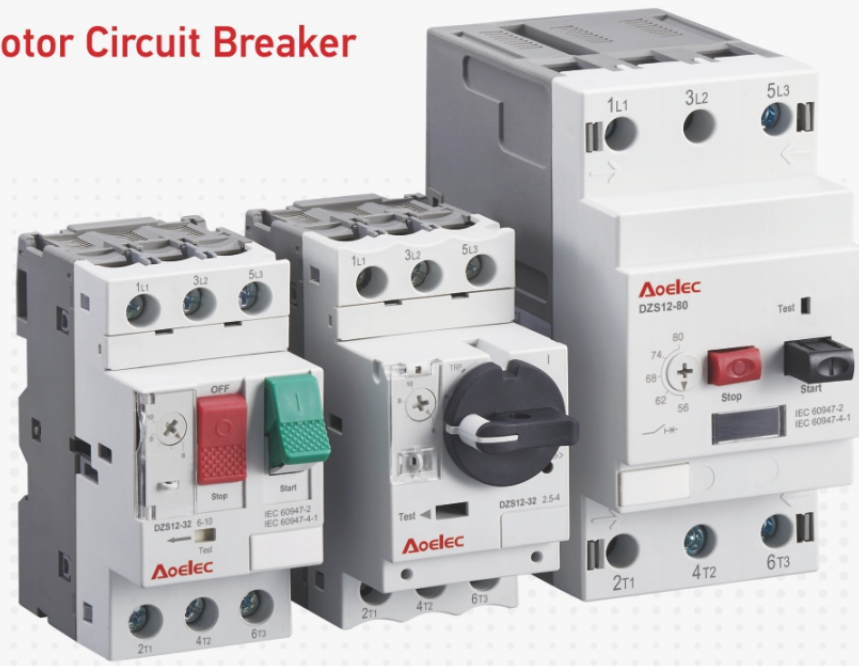


Versatile Application
Suitable for a wide range of industrial, mechanical, and agricultural equipment.

Motor Circuit Breaker Accessories



Full Range Motor Circuit Breaker



Application

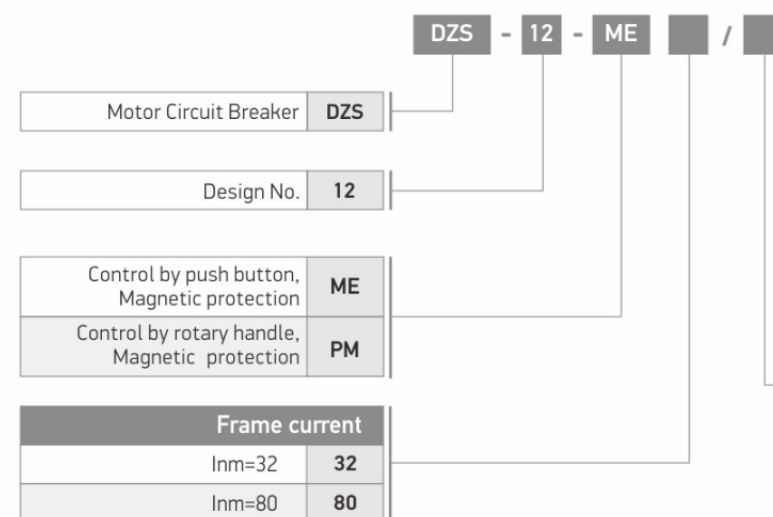
Motor Circuit Breaker is designed for circuits with AC voltage up to 690V and current ratings from 0.1A to 80A. It provides overload protection, phase-failure protection, and short-circuit protection for three-phase squirrel-cage induction motors, while supporting infrequent starting operations. Additionally, it functions as: Distribution line protection, Infrequent load switching, Isolating switch.

**IEC60947-2
IEC60947-4-1**

Approval / Marking

CE RoHS

Product Code System & Explanations



Rated current code	Setting range of thermal trips
01	0.1-0.16A
02	0.16-0.2-0.25A
03	0.25-0.3-0.35-0.4A
04	0.4-0.5-0.6-0.63A
05	0.63-0.7-0.8-0.9-1 A
06	1-1.2-1.4-1.6A
07	1.6-2-2.5A
08	2.5-3-3.5-4A
10	4-5-6-6.3A
14	6-9-10A
16	9-13-14A
20	13-17-18A
21	17-21-23A
22	20-23-25A
32	24-28-32A
40	25-30-35-40A
63	40-44-52-60-63A
80	56-62-68-74-80A

Full Range Motor Circuit Breaker

Main Technical Data

DZS12-ME32/PM32 Magnetic motor circuit breakers

Control by push button/rotary handle

Circuit breaker type	Standard power ratings of 3-phase motors 50/60 Hz in category AC-3/AC-3e				Setting range of thermal trips A	Magnetic tripping current A	Rated current I _{the} A
	230V kW	400V kW	415V kW	440V kW			
DZS12-ME3201	-	-	-	-	0.1...0.16	1.5	0.16
DZS12-ME3202	-	-	-	-	1.16...0.25	2.4	0.25
DZS12-ME3203	-	-	-	-	0.25...0.40	5	0.40
DZS12-ME3204	-	-	-	-	0.40...0.63	8	0.63
DZS12-ME3205	-	-	-	0.37	0.63...1	13	1
DZS12-ME3206	-	0.37	-	0.55	1...1.6	22.5	1.6
DZS12-ME3207	0.37	0.75	0.75	1.1	1.6...2.5	33.5	2.5
DZS12-ME3208	0.75	1.5	1.5	1.5	2.5...4	51	4
DZS12-ME3210	1.1	2.2	2.2	3	4...6.3	78	6.3
DZS12-ME3214	2.2	4	4	4	6...10	138	9
DZS12-ME3216	3	5.5	5.5	7.5	9...14	170	13
DZS12-ME3220	4	7.5	9	9	13...18	223	17
DZS12-ME3221	5.5	11	11	11	17...23	327	21
DZS12-ME3222	5.5	11	11	11	20...25	327	23
DZS12-ME3232	7.5	15	15	15	24...32	416	24

DZS12-ME80 Magnetic motor circuit breakers

Control by push button

Circuit breaker type	Standard power ratings of 3-phase motors 50/60 Hz in category AC-3/AC-3e				Setting range of thermal trips A	Magnetic tripping current I _d ± 20 % A
	230V kW	400V kW	415V kW	440V kW		
DZS12-ME8006	-	0.37	-	0.55	1 to 1.6	19.2
DZS12-ME8007	0.37	0.72	1.1	1.1	1.6 to 2.5	30
DZS12-ME8008	0.75	1.5	1.5	1.5	2.5 to 4	48
DZS12-ME8010	1.1	2.2	2.2	3	4 to 6	72
DZS12-ME8014	2.2	4	4	4	6 to 10	120
DZS12-ME8020	4	7.5	7.5	7.5	10 to 16	192
DZS12-ME8025	5.5	11	11	11	16 to 25	300
DZS12-ME8040	1	18.5	22	22	25 to 40	480
DZS12-ME8063	15	30	33	33	40 to 63	756
DZS12-ME8080	22	40	45	45	56 to 80	960

Full Range Motor Circuit Breaker

Breaking Capacity

Breaking Capacity of DZS12-ME32/PM32

Circuit breaker type				DZS12-ME32/PM32											
				01...06	07	08	10	14	16	20	21, 22	32			
Rating			A	0.1...1.6	2.5	4	6.3	10	14	18	23, 25	32			
Breaking capacity conforming to IEC 60947-2	230/240 V	Icu	kA	★	★	★	★	★	★	★	50	50			
		Ics% ⁽¹⁾		★	★	★	★	★	★	★	★	100	100		
	400/ 415 V	Icu	kA	★	★	★	★	★	★	15	15	15	10		
		Ics% ⁽¹⁾		★	★	★	★	★	★	50	50	40	50		
	440 V	Icu	kA	★	★	★	★	★	15	8	8	6	6		
		Ics % ⁽¹⁾		★	★	★	★	★	100	100	50	50	50	50	
	500 V	Icu	kA	★	★	★	★	★	10	6	6	4	4		
		Ics % ⁽¹⁾		★	★	★	★	★	100	100	75	75	75	75	
	690 V	Icu	kA	★	★	3	3	3	3	3	3	3	3		
		Ics % ⁽¹⁾		★	★	75	75	75	75	75	75	75	75	75	
Associated fuses (if required) if Isc > breaking capacity Icu conforming to IEC 60947-2 amendment 1	230/ 240 V	aM	A	★	★	★	★	★	★	★	★	80	80		
		gG	A	★	★	★	★	★	★	★	★	★	100	100	
	400/ 415 V	aM	A	★	★	★	★	★	★	63	63	80	80		
		gG	A	★	★	★	★	★	★	80	80	100	100		
	440 V	aM	A	★	★	★	★	★	50	50	50	50	63	63	
		gG	A	★	★	★	★	★	63	63	63	63	80	80	
	500 V	aM	A	★	★	★	★	★	★	50	50	50	50	50	50
		gG	A	★	★	★	★	★	63	63	63	63	63	63	
	690 V	aM	A	★	★	16	25	32	32	40	40	40	40	40	
		gG	A	★	★	20	32	40	40	50	50	50	50	50	

★> 100 kA. (1)As % of Icu.

Breaking Capacity of DZS12-ME80

Circuit breaker type				DZS12-ME80									
				06	07	08	10	14	20	25	40	63	80
Rating			A	1.6	2.5	4	6	10	16	25	40	63	80
Breaking capacity conforming to IEC 60947-2	230/240 V	Icu	kA	★	★	★	★	★	★	75	75	75	75
		Ics% ⁽¹⁾		★	★	★	★	★	★	75	75	75	75
	400/ 415 V	Icu	kA	60	60	60	60	60	60	35	35	30	30
		Ics% ⁽¹⁾		50	50	50	50	50	50	50	50	50	50
	440 V	Icu	kA	60	60	60	60	60	60	25	25	25	25
		Ics % ⁽¹⁾		50	50	50	50	50	50	50	50	50	50
	500 V	Icu	kA	20	20	20	20	20	20	10	8	8	8
		Ics % ⁽¹⁾		75	75	75	75	75	75	75	75	75	75
	690 V	Icu	kA	3	3	3	3	3	3	4	4	4	4
		Ics % ⁽¹⁾		75	75	75	75	75	75	75	75	75	75
Associated fuses (if required) if Isc > breaking capacity Icu conforming to IEC 60947-2 amendment 1	230/ 240 V	aM	A	★	★	★	★	★	★	80	★	★	★
		gG	A	★	★	★	★	★	★	100	★	★	★
	400/ 415 V	aM	A	★	★	★	★	★	★	63	80	250	315
		gG	A	★	★	★	★	★	★	80	100	315	400
	440 V	aM	A	★	★	★	★	★	★	50	63	250	315
		gG	A	★	★	★	★	★	★	63	80	315	400
	500 V	aM	A	★	★	★	★	★	★	50	63	200	250
		gG	A	★	★	★	★	★	★	63	80	250	315
	690 V	aM	A	★	6	25	32	32	40	40	160	200	250
		gG	A	★	10	32	40	40	50	50	200	250	315

★> 100 kA. (1)As % of Icu.

Full Range Motor Circuit Breaker

Accessories



Enclosures for thermal-magnetic circuit breakers DZS12-ME32

Model	Description	Possible no. of side mounting auxiliary contact blocks on DZS12-ME32		Degree of protection
		LH side	RH side	
DZS12-MC01	Surface mounting, double insulated with protective conductor. Sealable cover	1	1	IP41
DZS12-MC02		1	1	IP45

Short-circuit signalling contacts

Model	Description	Mounting	Type of contacts
DZS12-AM11	Short-circuit signalling contacts	1 block on LH side of circuit breaker	C/O common point

Instantaneous auxiliary contacts

Model	Description	Mounting	Type of contacts
DZS12-AN11	Instantaneous auxiliary contacts	2 blocks on LH side of circuit breaker	N/O+N/C
DZS12-AN20			N/O+N/O

Fault signalling contact + instantaneous auxiliary contact

Model	Description	Mounting	Type of contacts
DZS12-AD1010	Fault signalling contact + instantaneous auxiliary contact	1 block on LH side of circuit breaker	N/O (fault)+N/O
DZS12-AD1001			N/O (fault)+N/C
DZS12-AD0110			N/C (fault)+N/O
DZS12-AD0101			N/C (fault)+N/C

Instantaneous auxiliary contacts

Model	Description	Mounting	Type of contacts
DZS12-AE1	Instantaneous auxiliary contact	1 block on Front of circuit breaker	N/O or N/C
DZS12-AE11			N/O+N/C
DZS12-AE20			N/O+N/O

Full Range Motor Circuit Breaker

Accessories



Undervoltage trip

Model	Description	Mounting	Type of contacts
DZS12-AU115	Undervoltage trip	1 block on RH side of circuit breaker	110...127V 50Hz
DZS12-AU225			220...240V 50Hz
DZS12-AU385			380...415V 50Hz



Shunt trip

Model	Description	Mounting	Type of contacts
DZS12-AS115	Shunt trip	1 block on RH side of circuit breaker	110...127V 50Hz
DZS12-AS225			220...240V 50Hz
DZS12-AS385			380...415V 50Hz



Extended Rotary Handle

Allows a circuit breaker or a starter-controller installed in back of an enclosure to be operated from the front of the enclosure. It includes a function for locking the circuit breaker or the starter in the O (OFF) for handle, in the O (OFF) or I (ON) for handle, by means of up to 3 padlocks with a shank diameter of 4 to 8 mm. The extended shaft must be adjusted to use in different size enclosures. The IP54 rotary handle is fixed with a nut (Ø22) to make easier the assembling.



Instantaneous auxiliary contacts

Model	Description	Mounting	Type of contacts
DZS12-A01	Instantaneous auxiliary contacts	1 block on RH side of circuit breaker	N/C+N/O
DZS12-A02			N/C+N/O
DZS12-A03			N/C+N/O+N/O
DZS12-A05			N/C+N/O+N/O
DZS12-A06			N/O+N/O+2 Passive Terminals
DZS12-A07			N/O+N/O+2 Passive Terminals
DZS12-A08	Fault signalling contacts	1 block on inside of circuit breaker	N/C
DZS12-A09			N/O

Full Range Motor Circuit Breaker

Characteristics of Auxiliary contacts

Type of contacts			Instantaneous auxiliary DZS12-AN, DZS12-AD							Fault signalling DZS12-AD, DZS12-AM11				Instantaneous DZS12-AE			
Rated insulation voltage (Ui) (associated insulation coordination)	Conforming to IEC 60947-1	V	690							690				250 (690 in relation to main circuit)			
	Conforming to UL 60947-4-1, CSA C22.2 n° 60947-4-1	V	600							300				300			
Conventional thermal current (Ith)	Conforming to IEC 60947-5-1	A	6							2.5				2.5			
	Conforming to UL 60947-5-1, CSA C22.2 n° 60947-5-1	A	5							1				1			
Mechanical durability (C.O.: Close - Open)		C.O.	100 000							1000				100 000			
Operational power and current conforming to IEC 60947-5-1. a.c. operation			AC-15/100 000 C.O.							AC-14/1000 C.O.				AC-15/100 000 C.O.			
	Rated operational voltage (Ue)	V	48	110	230	380	440	500	690	24	48	110	230	24	48	110	230
			127	240	415						127	240			127	240	
Operation	Operational power, normal conditions	VA	300	500	720	850	650	500	414	36	48	72	72	48	60	120	120
	Occasional breaking and making capacities, abnormal conditions	kVA	3	7	13	15	13	12	9	0.22	0.3	0.45	0.45	0.48	0.6	1.27	2.4
	Rated operational current (Ie)	A	6	4.5	3.3	2.2	1.5	1	0.6	1.5	1	0.5	0.3	2	1.25	1	0.5
Operational power and current conforming to IEC 60947-5-1. d.c.			DC-13/100 000 C.O.							DC-13/1000 C.O.				DC-13/100 000 C.O.			
	Rated operational voltage (Ue)	V	24	48	60	110	240	—	—	24	48	60	—	24	48	60	—
Operation	Operational power, normal conditions	W	140	240	180	140	120	—	—	24	15	9	—	24	15	9	—
	Occasional breaking and making capacities, abnormal conditions	W	240	360	240	210	180	—	—	100	50	50	—	100	50	50	—
	Rated operational current (Ie)	A	6	5	3	1.3	0.5	—	—	1	0.3	0.15	—	1	0.3	0.15	—
Minimum operational conditions		V	17				17			17				17			
		mA	5				5			5				5			
Cabling, screw clamp terminals	Number of conductors		1				2			2				2			
	Solid cable	mm²	1...2.5				1...2.5			1...2.5				1...2.5			
	Flexible cable without cable end	mm²	0.75...2.5				0.75...2.5			0.75...2.5				0.75...2.5			
	Flexible cable with cable end	mm²	0.75...1.5				0.75...1.5			0.75...1.5				0.75...1.5			
	Tightening torque	N.m	1.4 max				1.4 max			1.4 max				1.4 max			
Cabling, spring terminal connections			DZS12-AN only														
	Flexible cable without cable end	mm²	0.75...2.5				0.75...2.5			—				0.75...1.5			

Characteristics of Electric trips

Type of trip			DZS12-AU	DZS12-AX(A)	DZS12-AS
Rated insulation voltage (Ui)	Conforming to IEC 60947-1	V	690	500	690
	Conforming to UL 60947-4-1, CSA C22.2 n° 60947-4-1	V	600	-	600
Operational voltage (Ue)	Conforming to IEC 60947-1	V	0.85...1.1 Un	0.85...1.1 Un	0.7...1.1 Un
Drop-out voltage		V	0.7...0.35 Un	0.7...0.35 Un	0.75...0.2 Un
Inrush consumption	AC	VA	12	12	14
Sealed consumption	AC	VA	3.5	3.5	5
Operating time	Conforming to IEC 60947-1	ms	From the moment the voltage reaches its operational value until opening of the circuit breaker. 10...15		
On-load factor			100 %		
Cabling (screw clamp connection)	Number of conductors		1 or 2		
	Solid cable	mm²	1...2.5		
	Flexible cable without cable end	mm²	0.75...2.5		
	Flexible cable with cable end	mm²	0.75...1.5		
Tightening torque		N.m	1.4 max		
Mechanical durability	(C.O.: Close - Open)	C.O.	100000		

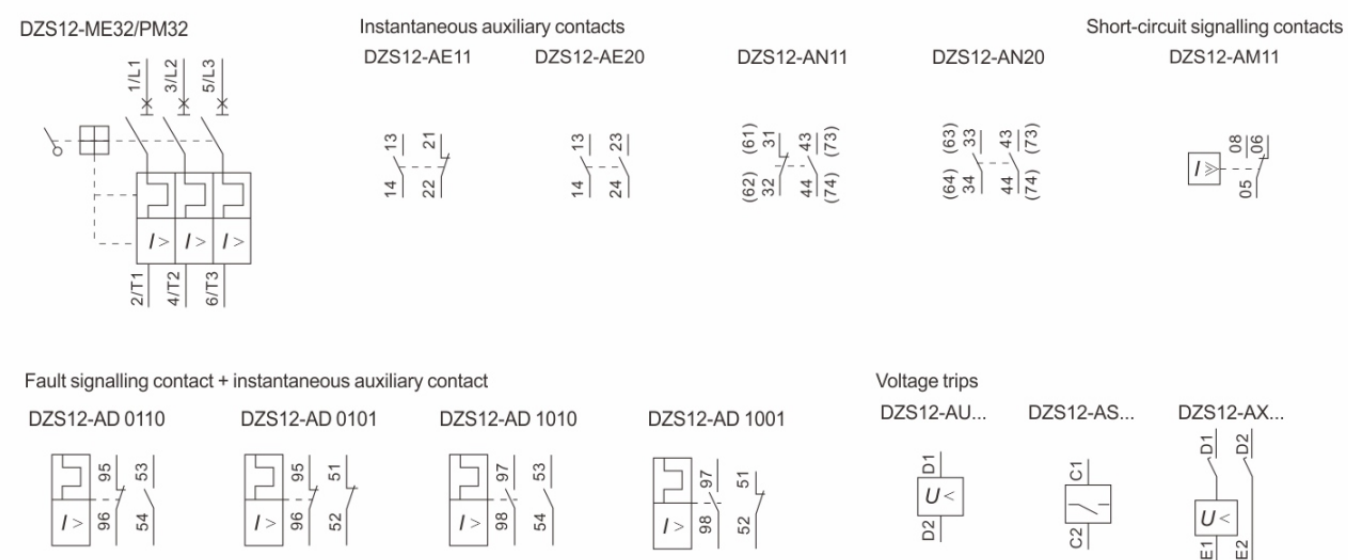
Full Range Motor Circuit Breaker

Characteristics of terminal blocks

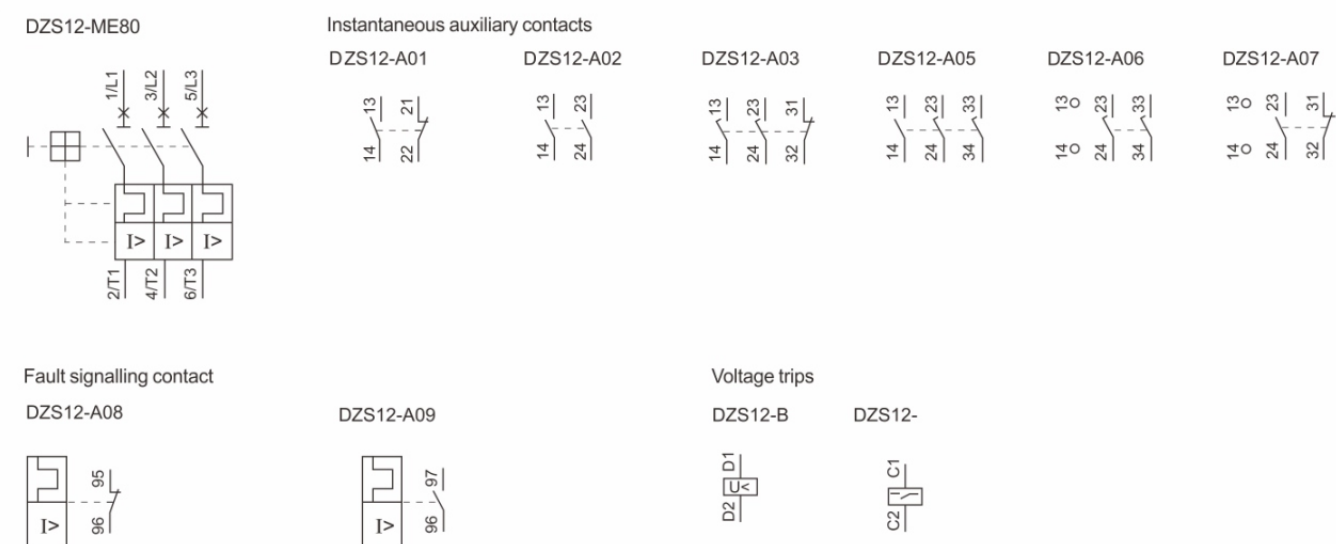
Circuit breaker type			DZS12-ME32/PM32		DZS12-ME80	
Connection to screw clamp terminals (Max. number of conductors x c.s.a.)			Min.	Max.	Min.	Max.
	Solid cable	mm ²	2x1	2x6	1x2.5	1x35
	Flexible cable without cable end	mm ²	2x1.5	2x6	1x2.5	2x16
	Flexible cable with cable end	mm ²	2x1	2x4	1x2.5	2x16
Tightening torque		N.m	1.7	1.7	5	5

Wiring diagram

DZS12-ME32/PM32



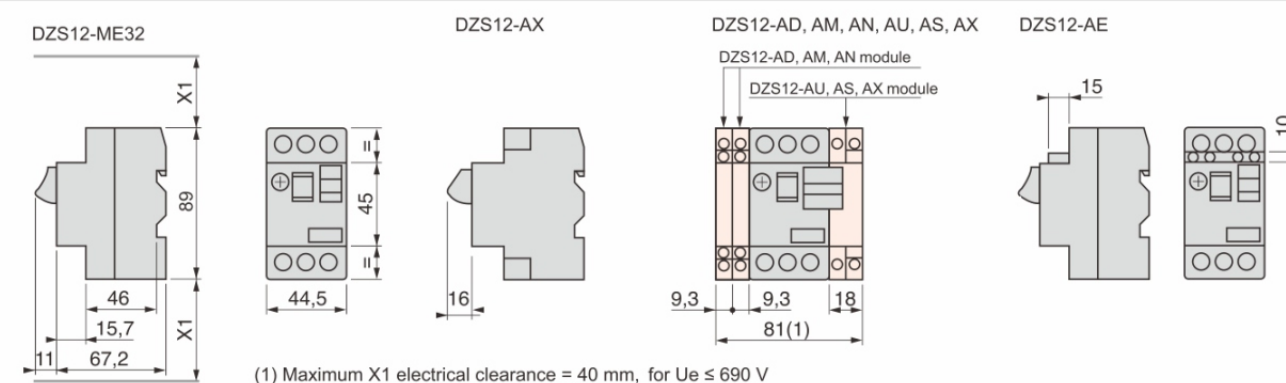
DZS12-ME80



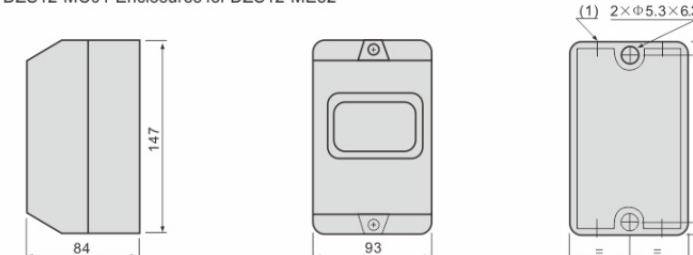
Full Range Motor Circuit Breaker

Dimensions

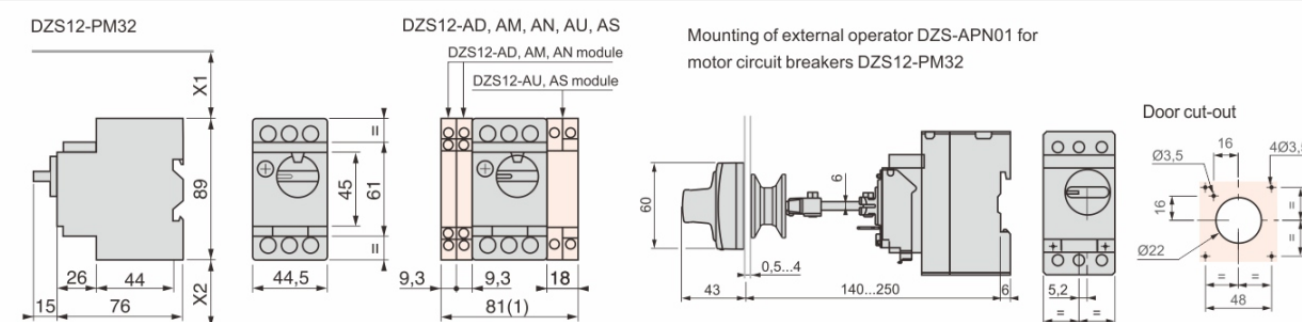
DZS12-ME32



DZS12-MC01 Enclosures for DZS12-ME32



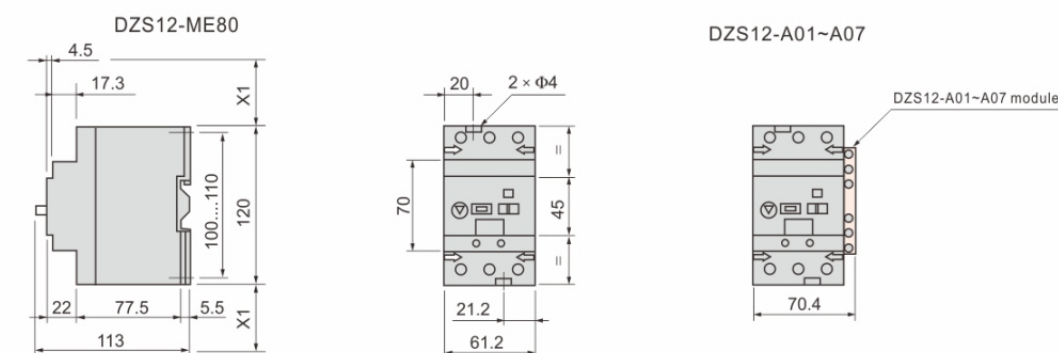
DZS12-PM32



(1) Maximum X2 = 40 mm

X1 electrical clearance = 40 mm for Ue ≤ 415 V; 80 mm for Ue = 440 V; 120 mm for Ue = 500 and 690 V

DZS12-ME80



X1 electrical clearance = 40 mm for Ue ≤ 415 V; 50 mm for Ue < 690 V