

Panelboards & Motor Starters

MS Series: Motor Starters – Flameproof



Ex d Version



Ex de Version

Compliance Data:

ATEX - IECEx:



Zone 1 & 2, 21 & 22	ATEX	II 2 GD	IECEx	CE
Ex d IIB/Ex de IIB	T6	Ex tD A21	T80°C	IP66 – IK10

Type, Power, Voltage:

Type	Power	Rated Voltage	Frequency
Direct On Line (D.O.L.)	0.37 kW to 75 kW	400/415 V	50/60 Hz

Operating Temperature:

- 50°C to 55°C (CF 60)
- 40°C to 55°C (CF 20, 40, 50)
- 20°C to 55°C (CF 30)

Panelboards & Motor Starters

MS Series: Motor Starters – Flameproof

Zone 1 & 2 - 21 & 22

Ex II 2 GD

ATEX / IECEx

IP66 - IK10

Applications:

- These motor starters are used in areas where hazardous material are handled or stored. These units provide disconnecting means, under-voltage protection, circuit protection, motor running protection and thermal time delay overload protection.

Features:

- Magnetic circuit breaker protects equipment and personnel and eliminates replacement of fuses.
- Three pole contactor.
- Thermal overload relay with manual reset push button.
- Green pilot light "Running/ON".
- Rated voltage 400/415 V 50/60 Hz AC-3 category.
- Control circuit supplied via a transformer fed between phases.
- Direct entries or indirect entries with Ex e box allows use of cable gland with elastomer seal.
- Type 2 coordinated protection (IEC 60947-4-1) has the following benefits:
 - Safety - limiting the energy delivered to the short circuit ensures the safest applications for personnel, facilities and equipment.
 - Reduced costs - preventing short circuit damage to components minimizes labor and replacement costs.
 - Increased productivity - as component replacement due to short circuits is minimized, so are interruptions to production.
- Direct ammeter for 0.37 kW to 2.2 kW versions.
Ammeter with current transformer for 3 kW to 75 kW versions.

Standard Material of Fixtures:

- Body and cover:
 - Gray painted marine grade aluminum alloy (RAL 7038).
 - Cover bolts: stainless steel.
 - Hinges: stainless steel.
- Ex e box for indirect entries:
 - Gray (RAL 7038) painted aluminum alloy (size 2 & 6) or stainless steel (size 8 & 11).
 - Cover bolts: stainless steel.

Standard Finish:

- Corrosion resistant gray powder coat epoxy.

Options:

- Available up to 300Kw - consult factory.

Catalog Number Logic:

MS T	X	XXX T	X	X T	X	X
Series: MS = Motor Starters Zone 1 ATEX / IEC Ex Certified		Power: 003 = 0.37 kW 005 = 0.55 kW 007 = 0.75 kW 011 = 1.1 kW 015 = 1.5 kW 022 = 2.2 kW 030 = 3 kW 040 = 4 kW 055 = 5.5 kW 075 = 7.5 kW		Rated Voltage: 4 = 400/415 V 50/60 Hz		Control Circuit Voltage: 2 = 230 V 50/60 Hz via Transformer
		090 = 9 kW 110 = 11 kW 150 = 15 kW 185 = 18.5 kW 220 = 22 kW 300 = 30 kW 370 = 37 kW 450 = 45 kW 550 = 55 kW 750 = 75 kW				Options: A = Ammeter B = Indirect entries with Ex e Box E = Local emergency Stop H = Anti-condensation (Heater, Thermostat, Blue pilot light) S = Selector switch H-OFF-A T = Fault trip signal with yellow pilot light F = Full Options (A,B,E,H,S,T)
		Classification: B = Ex dIIB H = Ex d IIB + H2		Type: D = D.O.L. Direct On Line		

Ordering Information:

Standard Version:

Fitted with magnetic circuit breaker, contactor with overload relay, Start/Stop buttons and green pilot light. (1 x M20 plugged).

Motor Capacity AC-3 to 415 V	Size	Terminals Cross-section (mm ²)	Cable Entries at Bottom	Catalog Number	Weight (kg)	Volume (dm ³)
0.37 kW	1	2.5	2 x M20 + 1 M20	MSB003D42	16	25
0.55 kW	1	2.5	2 x M20 + 1 M20	MSB005D42	16	25
0.75 kW	1	2.5	2 x M20 + 1 M20	MSB007D42	16	25
1.1 kW	1	2.5	2 x M20 + 1 M20	MSB011D42	16	25
1.5 kW	1	2.5	2 x M20 + 1 M20	MSB015D42	16	25
2.2 kW	1	2.5	2 x M20 + 1 M20	MSB022D42	16	25
3 kW	1	2.5	2 x M20 + 1 M20	MSB030D42	16	25
4 kW	1	2.5	2 x M20 + 1 M20	MSB040D42	16	25
5.5 kW	5	4	2 x M25 + 1 M20	MSB055D42	56	126
7.5 kW	5	6	2 x M25 + 1 M20	MSB075D42	56	126
9 kW	5	10	2 x M25 + 1 M20	MSB090D42	56	126
11 kW	5	10	2 x M25 + 1 M20	MSB110D42	56	126
15 kW	5	16	2 x M32 + 1 M20	MSB150D42	56	126
18.5 kW	7	25	2 x M32 + 1 M20	MSB185D42	72	236
22 kW	7	25	2 x M32 + 1 M20	MSB220D42	72	236
30 kW	7	35	2 x M40 + 1 M20	MSB300D42	72	236
37 kW	9	50	2 x M40 + 1 M20	MSB370D42	132	370
45 kW	9	70	2 x M50 + 1 M20	MSB450D42	132	370
55 kW	9	95	2 x M50 + 1 M20	MSB550D42	132	370
75 kW	9	120	2 x M63 + 1 M20	MSB750D42	132	370

Panelboards & Motor Starters

MS Series: Motor Starters – Flameproof

Zone 1 & 2 - 21 & 22

⊕ II 2 GD

ATEX / IECEx

IP66 - IK10

Ordering Information - Continued:

Full Options Version:

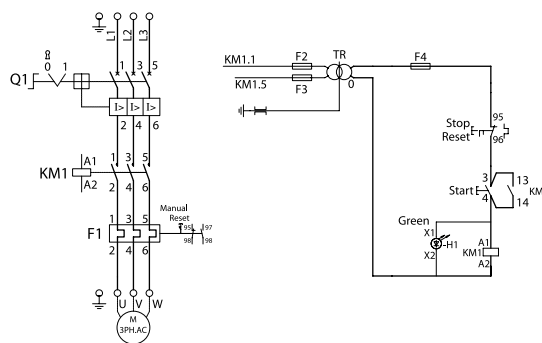
Standard version + HOA selector switch, local emergency stop, fault trip signal, ammeter, anti-condensation and indirect entries. (1 x M20 plugged.)

Capacity AC-3 to 415 V	Size	Cross-section (mm ²)	Cable Entries at Bottom	Catalog Number	Weight (kg)	Volume (dm ³)
0.37 kW	4	2.5	2 x M20 + 1 x M20	MSB003D42F	51	700
0.55 kW	4	2.5	2 x M20 + 1 x M20	MSB005D42F	51	700
0.75 kW	4	2.5	2 x M20 + 1 x M20	MSB007D42F	51	700
1.1 kW	4	2.5	2 x M20 + 1 x M20	MSB011D42F	51	700
1.5 kW	4	2.5	2 x M20 + 1 x M20	MSB015D42F	51	700
2.2 kW	4	2.5	2 x M20 + 1 x M20	MSB022D42F	51	700
3 kW	4	2.5	2 x M20 + 1 x M20	MSB030D42F	51	700
4 kW	4	2.5	2 x M20 + 1 x M20	MSB040D42F	51	700
5.5 kW	6	4	2 x M25 + 1 x M20	MSB055D42F	62	700
7.5 kW	6	6	2 x M25 + 1 x M20	MSB075D42F	62	700
9 kW	6	10	2 x M25 + 1 x M20	MSB090D42F	62	700
11 kW	6	10	2 x M25 + 1 x M20	MSB110D42F	62	700
15 kW	6	16	2 x M32 + 1 x M20	MSB150D42F	62	700
18.5 kW	8	25	2 x M32 + 1 x M20	MSB185D42F	81	700
22 kW	8	25	2 x M32 + 1 x M20	MSB220D42F	81	700
30 kW	8	35	2 x M40 + 1 x M20	MSB300D42F	81	700
37 kW	10	50	2 x M40 + 1 x M20	MSB370D42F	145	700
45 kW	10	70	2 x M50 + 1 x M20	MSB450D42F	145	700
55 kW	10	95	2 x M50 + 1 x M20	MSB550D42F	145	700
75 kW	10	120	2 x M63 + 1 x M20	MSB750D42F	145	700

Compliances:

Hazardous Area	Gas	Dust
Certified Type	CF	
Zones	1-2	21-22
Conforming to ATEX 94/9/CE	CE 0081 ⊕ II 2 G	CE 0081 ⊕ II 2 D
Symbol of Protection ATEX	Ex d IIB	
Symbol of Protection IEC	Ex tD A21	
T Rating	T6	
Surface Temperature	—	
Ambient Temperature	-50°C to 55°C (CF 60) -40°C to 55°C (CF 20, 40, 50) -20°C to 55°C (CF 30)	
CE Declaration of Conformity	50229	
ATEX Certificate	LCIE 02 ATEX 6057X	
IECEx Certificate	IECEx LCI 08.0023X	
Other Certifications	GOST	
Index of Protection (solid and liquid)	IP66	
Impact Resistance (shock)	IK10	
Internal Volume	> 2 dm ³ (2 liters)	

Wiring Diagram:



Panelboards & Motor Starters

MS Series: Motor Starters – Flameproof

Zone 1 & 2 - 21 & 22

⊕ II 2 GD

ATEX / IECEx

IP66 - IK10

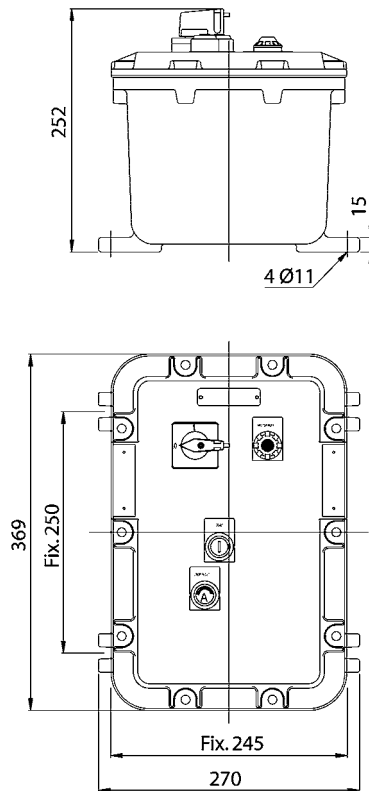
Standards:

Ex Standards	EN / IEC 60079-0; 60079-1; 60079-7; 61241-0; 61241-1
Product Standards	/
EMC Standards	/
Other Standards	EN / IEC 60529 (IP); 62262 (IK)

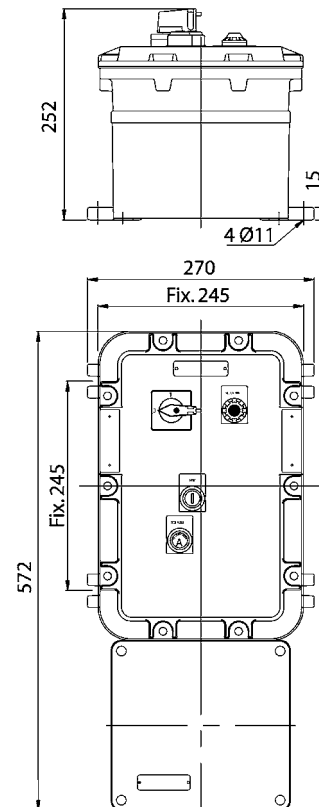
Dimensions (mm):

Flameproof Motor Starters

Enclosure Layout
Size 1: CF20B



Enclosure Layout
Size 2: CF20B + CAe1



Panelboards & Motor Starters

MS Series: Motor Starters – Flameproof

Zone 1 & 2 - 21 & 22

II 2 GD

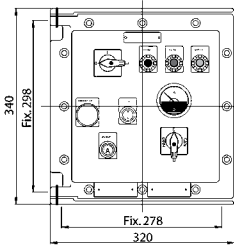
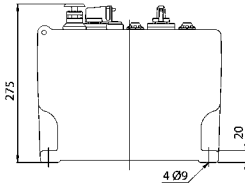
ATEX / IECEx

IP66 - IK10

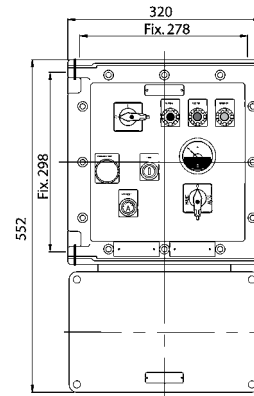
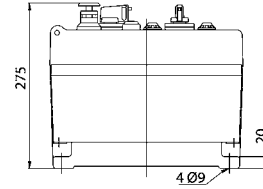
Dimensions (mm) – Continued:

Flameproof Motor Starters

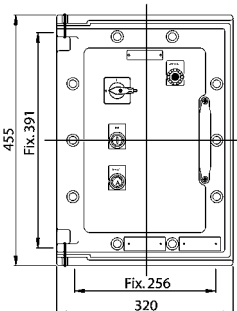
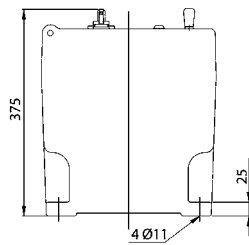
Enclosure Layout
Size 3: CF30B



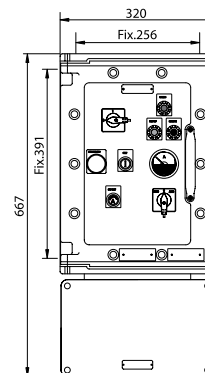
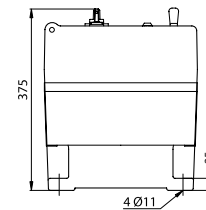
Enclosure Layout
Size 4: CF30B + CAe2



Enclosure Layout
Size 5: CF40B



Enclosure Layout
Size 6: CF40B + CAe2



Panelboards & Motor Starters

MS Series: Motor Starters – Flameproof

Zone 1 & 2 - 21 & 22

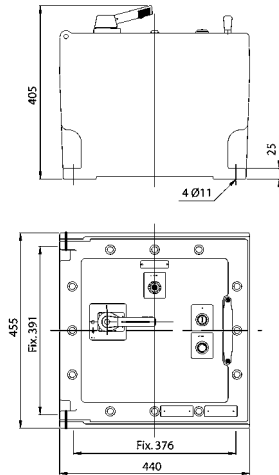
Ⓜ II 2 GD

ATEX / IECEx

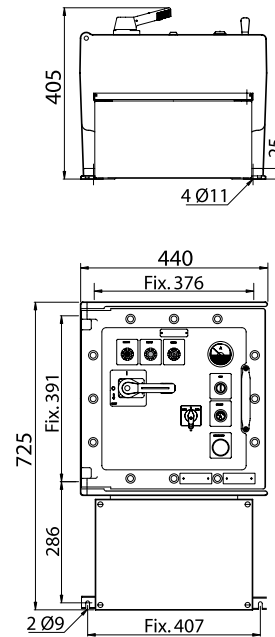
IP66 - IK10

Dimensions (mm) – Continued:

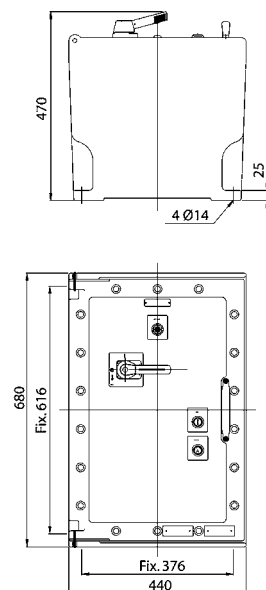
Enclosure Layout
Size 7: CF50B



Enclosure Layout
Size 8: CF50B + JBe47



Enclosure Layout
Size 9: CF60B



Enclosure Layout
Size 10: CF60B + JBe55

