

ECS Combination Motor Staters and Enclosures



A QUALITY PRODUCT

EXPLOSIONPROOF

For UL.60079-1 Standard Class I,II Div.1 and 2 Groups C,D,E,F and G

For IEC.60079-0/1 Standard Zone 1 and Zone 2



ISO9001:2008

Technical data

Type of Protection: Ex d IIA T6
 Conforming to : Standards IEC 60079-1 or UL 60079-0/1
 Marking for test : Ex II2G
 Degree of Protection : IP65/66 acc.To IEC 60529
 Ambient Temp. (Ta) : -20°C to + 55°C
 Type : ECS
 Protection class for UL. : Class I, Division 1 or 2 Group C,D
 Class II, Division 1 or 2 Groups E,F,G
 Class III
 Protection class for IEC : Zone 1 and Zone 2
 Magnetic Contactor: 0.37 to 132kw. For DOL starting
 3 to 110 kw. For Star-Delta starting
 Electrical Rating : Supply 3Phase 380/220V.AC. 50Hz.
 Circuit Breaker : 32,63,125,160,400 Ampere frame.
 Magnetic contactor ; 0.37 to 132 kw.
 Options : Silicone rubber for outdoor IP66 (Type S)
 O-Ring gasket.
 Drain fitting.
 Space heater, 220V.AC.20w.
 MAN.-AUTO. Selector switch.
 Other push buttons or pilot lights modification.
 Other control voltage or control transformer.

Features:

- Rectangular shape compact designed.
- Circuit breaker, magnetic contactor with overload relay and control equipment are combined in one enclosure.
- Components are mounted on steel plate.
- START/STOP push buttons and transformer-type pilot lights are mounted in the front of panel.
- Overload relay can be reset with an external button.
- Breaker handle can be locked in "OFF" position.
- Four mounting lugs and ground-point are provided.
- Optional O-Ring gasket is equipped at flange of the cover to protect against the ingress of moisture or liquid for outdoor use.
- Mitsubishi or ABB circuit breakers and Mitsubishi or Telemecanique magnetic contactor are supplied as standard.
- Remote control for START / STOP motor is optional provided on request.

Remark:

- Silicone rubber for cover on pushbutton Type *R* for IP66



Applications:

- The ECS Combination
- use in hazardous areas due to the presence of flammable gases or vapors, combustible dusts or ignitable fibers.
 - single speed, non-reversing starting and stopping of AC squirrel cage induction motors.
 - direct-on-line or star-delta starting method.
 - providing disconnecting means for motor branch circuit short-circuit protection.
 - providing motor overload protection.
 - indoor or outdoor in damp, wet or corrosive locations.



Standard Materials:

- Body, cover and operating handle : Copper-free aluminium
- Mounting plate : Sheet steel
- Lamp guard : Brass
- Gasket ★ : Neoprene

Standard Finishes:

- Copper-free aluminium : Epoxy-polyester powder
- Stainless steel : Natural
- Sheet steel : Zinc electro-plated
- Brass : Chromium plated



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● **Catalogue Number:**

Direct-on-line Motor Starters

3 - Phase 380/220 V.AC. 50 Hz. Single speed , Non-reversing

(Mitsubishi Circuit Breaker and Magnetic Contactor)

Max. KW.	Output HP.	Circuit Breaker Amp. Trip (AT.)	MC.Rating,AC3 Amp.	Overload Relay Amp.	Cat.,No.	Enclosure Only
0.37	1/2.	6	12	1 - 1.6	ECSC x37M	JBB 10209
0.55	3/4.	6	12	1.4 - 2	ECSD x55M	JBB 10209
0.75	1	6	12	1.7 - 2.5	ECSD x75M	JBB 10209
1.1	1 1/2	10	12	2 - 3	ECSD 1x1M	JBB 10209
1.5	2	10	12	2.8 - 4.4	ECSD 1x5M	JBB 10209
2.2	3	10	12	4 - 6	ECSC 2x2M	JBB 10209
3	4	16	12	5.2 - 8	ECSD 3M	JBB 10209
3.7	5	20	12	7 - 11	ECSD 3x7M	JBB 10209
4	5 1/2	20	12	7 - 11	ECSD 4M	JBB 10209
5.5	7 1/2	32	22	9 - 13.	ECSD 5x5M	JBB 13219
7.5	10	32	22	12 - 18.	ECSD 7x5M	JBB 13219
11	15	50	30	18 - 26.	ECSD 11M	JBB 16209
15	20	63	40	24 - 34.	ECSD 15M	JBB 16209
18.5	25	80	50	30 - 40	ECSD 18x5M	JBB 16209
22	30	100	62	34 - 50	ECSD 22M	JBB 16209
30	40	125	85	43 - 65	ECSD 30M	JBB 20209
37	50	150	85	54 - 80	ECSD 37M	JBB 20209
45	60	175	105	65 - 93	ECSD 45M	JBB 20209
55	75	200	120	85 - 125	ECSD 55M	JBB 20249
75	100	250	150	100-150	ECSD 75M	JBB 20249
90	125	300	180	120-180	ECSD 90M	JBB 203210
110	150	350	250	140-220	ECSD 110M	JBB 203611
132	180	400	300	200-300	ECSD 132M	JBB 284411

(ABB Circuit Breaker, Telemecanique Magnetic contactor)

Max. KW.	Output HP.	Circuit Breaker Amp. Trip (AT.)	MC.Rating,AC3 Amp.	Overload Relay Amp.	Cat.,No.	Enclosure Only
1.1	1.1/2	10	12	2.5 - 4	ECSD 1x1A	JBB 10209
1.5	2	10	12	2.5 - 4	ECSD 1x5A	JBB 10209
2.2	3	10	12	4 - 6	ECSD 2x2A	JBB 10209
3	4	16	12	5.5 - 8	ECSD 3A	JBB 10209
3.7	5	20	12	7 - 10	ECSD 3X 7A	JBB 10209
4	5.1/2	20	12	7 - 10	ECSD 4A	JBB 10209
5.5	7.1/2	25	22	9 - 13	ECSD 5X 5A	JBB 13219
7.5	10	32	22	12 - 18	ECSD 7X 5A	JBB 13219
11	15	50	30	17 - 25	ECSD 11A	JBB 13219
15	20	63	40	23 - 32	ECSD 15A	JBB 13219
18.5	25	80	50	30 - 40	ECSD 18X 5A	JBB 13219
22	30	100	62	37 - 50	ECSD 22A	JBB 13219
30	40	125	85	48 - 65	ECSD 30A	JBB 20209
37	50	160	85	63 - 80	ECSD 37A	JBB 20209
45	60	160	105	80 - 93	ECSD 45A	JBB 20209
55	75	200	120	80 - 125	ECSD 55A	JBB 202410
75	100	250	150	100 - 160	ECSD 75A	JBB 202410
90	125	320	180	125 - 200	ECSD 90A	JBB 203210
110	150	320	250	160 - 250	ECSD 110A	JBB 203611
132	180	400	300	200 - 315	ECSD 110A	JBB 284411

✦ Enclosure dimensions, refer on page 7



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For UL.60079-1 Standard Class I,II Div.1 and 2 Groups C,D,E,F and G

For IEC.60079-0/1 Standard Zone 1 and Zone 2



Catalogue Number:

Star-Delta Starter

3 - Phase 380/220 V.AC. 50 Hz. Single speed , Non-reversing

(Mitsubishi Circuit Breaker and Magnetic Contactor)

Max.	Output	Circuit Breaker	MC.Rating,AC3		Overload Relay	Cat.,No.	Enclosure Only
KW.	HP.	Amp. Trip (AT.)	Main & Delta	Star	Amp.		
3	4	16	12	12	2.8-4.4	ECSS 3M	JBB 16209
3.7	5	20	12	12	4.-6	ECSS 3X7M	JBB 16209
4	5.1/2	20	12	12	4.-6	ECSS 4M	JBB 16209
5.5	7.1/2	32	12	12	5.2-8	ECSS 5X5M	JBB 16209
7.5	10	32	12	12	7.-11	ECSS 7X5M	JBB 16209
11	15	50	22	12	12.-18	ECSS 11M	JBB 16209
15	20	63	22	12	16-22	ECSS 15M	JBB 16209
18.5	25	80	30	22	18-26	ECSS 18X5M	JBB 20209
22	30	100	40	22	24-34	ECSS 22M	JBB 20209
30	40	125	50	22	30-40	ECSS 30M	JBB 162910
37	50	150	50	30	34-50	ECSS 37M	JBB 162910
45	60	175	62	30	43-65	ECSS 45M	JBB 203210
55	75	200	85	40	43-65	ECSS 55M	JBB 203611
75	100	250	105	50	65-93	ECSS 75M	JBB 203611
90	125	300	120	62	85-125	ECSS 90M	Consult Factory
110	150	350	150	62	100-150	ECSS 110M	Consult Factory

(ABB Circuit Breaker, Telemecanique Magnetic contactor)

Max.	Output	Circuit Breaker	MC.Rating,AC3		Overload Relay	Cat.,No.	Enclosure Only
KW.	HP.	Amp. Trip (AT.)	Main & Delta	Star	Amp.		
3	4	16	9	9	2.5 - 4	ECSS 3A	JBB 16209
3.7	5	20	9	9	4. - 6	ECSS 3x7A	JBB 16209
4	5.1/2	20	9	9	4. - 6	ECSS 4A	JBB 16209
5.5	7.1/2	25	9	9	5.5 - 8	ECSS 5x5A	JBB 16209
7.5	10	32	12	9	7. - 10	ECSS 7x5A	JBB 16209
11	15	50	18	9	12. - 18	ECSS 11A	JBB 16209
15	20	63	25	12	17. - 25	ECSS 15A	JBB 20209
18.5	25	80	25	12	17. - 25	ECSS 18x5A	JBB 20209
22	30	100	32	18	23. - 32	ECSS 22A	JBB 20209
30	40	125	40	25	30. - 40	ECSS 30A	JBB 162910
37	50	160	50	32	37. - 50	ECSS 37A	JBB 162910
45	60	160	65	32	48. - 65	ECSS 45A	JBB 203210
55	75	200	80	40	48. - 65	ECSS 55A	JBB 203611
75	100	250	95	50	80. - 93	ECSS 75A	JBB 203611
90	125	320	115	65	80. - 125	ECSS 90A	Consult Factory
110	150	400	150	65	100- 160	ECSS 110A	Consult Factory



Enclosure dimensions, refer on page 7





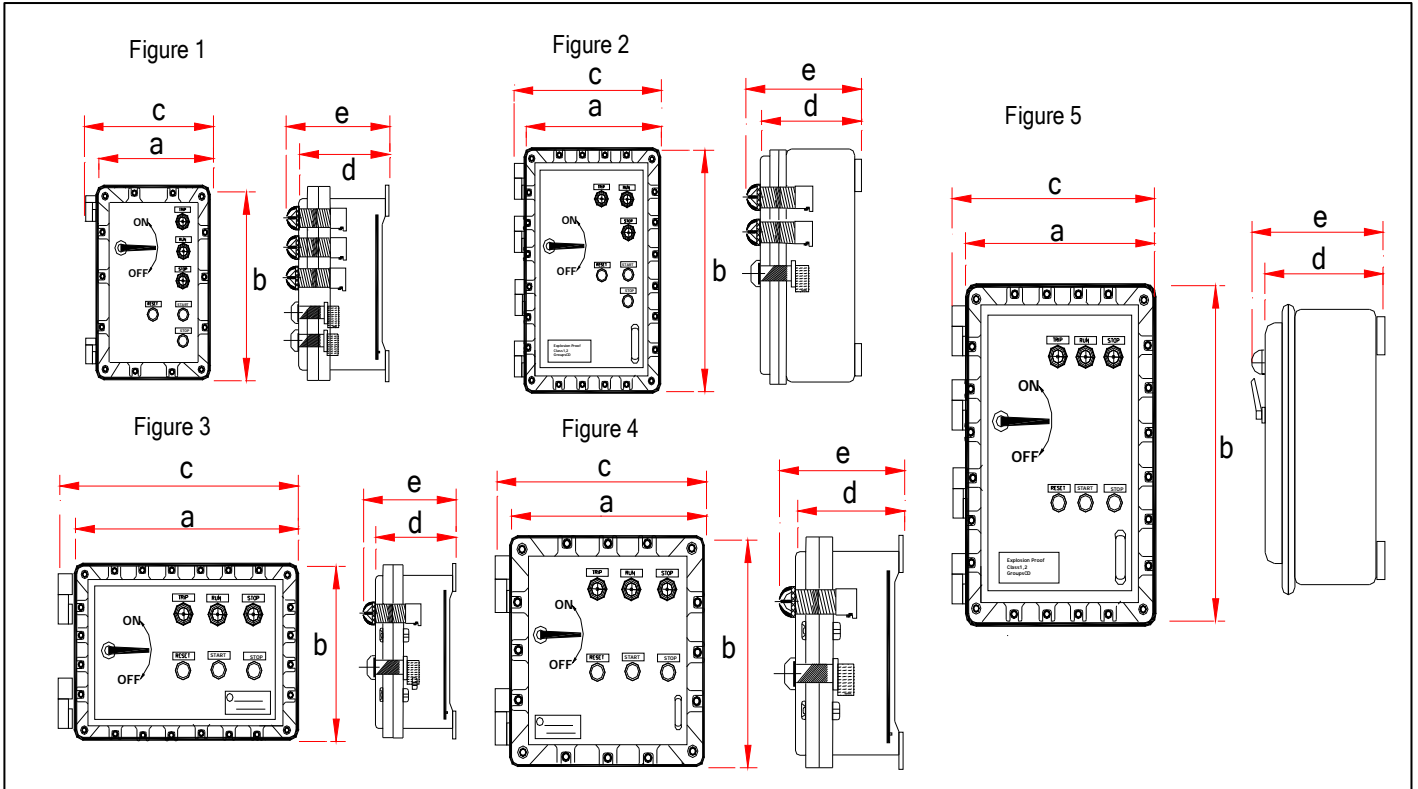
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Dimensions:



Enclosure	Dimension in mm.					Figure	Enclosure	Dimension in mm.					Figure
	a	b	c	d	e			a	b	c	d	e	
Direct-on-line							Star-Delta						
JBB 10209	254	508	274	222	267	1	JBB 16209	507	405	527	230	275	3
JBB 13219	332	535	352	245	290	1	JBB 20209	505	505	525	230	275	4
JBB16209	405	507	425	230	275	2	JBB 162910	725	405	745	260	305	3
JBB 20209	556	556	576	230	275	4	JBB 203210	810	508	830	260	305	3
JBB 20249	500	664	520	220	265	2	JBB 203611	924	519	944	302	347	3
JBB 203210	508	810	528	260	305	5							
JBB 203611	519	924	539	302	347	5							
JBB 284411	700	1100	720	285	330	5							

ECS Combination Motor Staters and Enclosures



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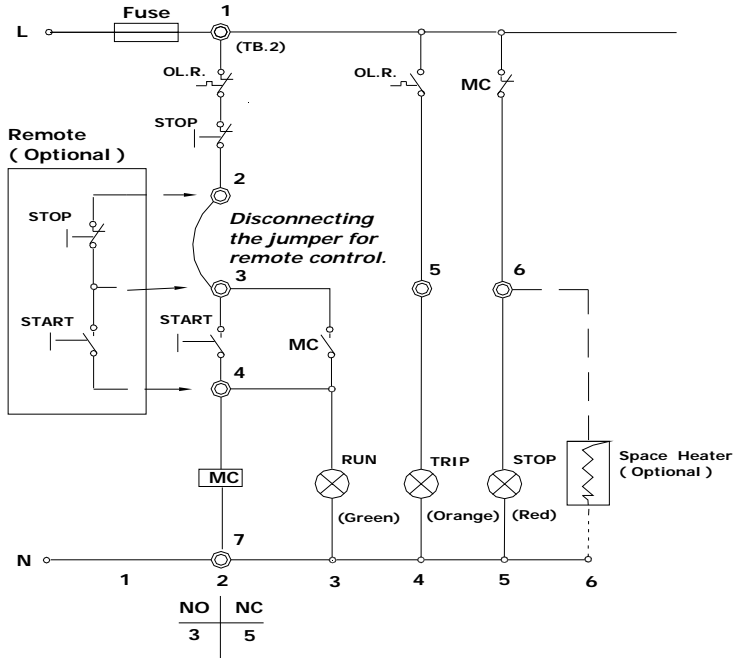
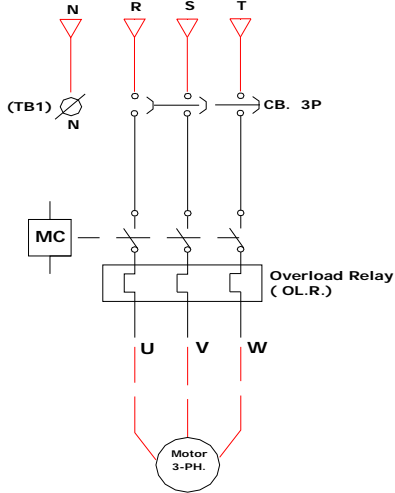
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For IEC.60079-0/1 Standard Zone 1 and Zone 2

Schematic Diagram

Direct-on-line Starter

380/220V.AC. 50Hz. 3-Phases 4-Wires



Star-Delta Starter

380/220V.AC.50Hz. 3-Phases 4-Wires

