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Enclosed Motor Starters & Isolators
Short Form Catalogue



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Enclosed motor starters

Moeller's comprehensive range of enclosed starters has been designed to meet the specific needs of the UK market.

To satisfy the requirements of most operating environments, they are available in insulated and sheet steel enclosures in a variety of sizes, with and without isolators.

Features and benefits

- IP65 degree of protection for insulated enclosed starters and IP55 for sheet steel, making them suitable for almost every industrial environment.
- Capable of a high number of operations, the range offers proven reliability plus a long operating life.
- All starters are constructed from standard components, making them very easy to maintain.
- All starters are wired to accept Moeller thermal overload relays, which are purchased separately.

For other control voltages, other motor ratings and stainless steel versions, please enquire – Technical Support: 01296 397400.

		Motor rating AC-3, 400 V kW	Part number	Enclosure dimensions WxHxD (mm)	Overload relay required
Direct-on-line starters – compact – insulated enclosures – protection standard IP65					
	3-phase	4	D4E/I2/3P+N(230V50Hz)	100x180x100	ZE-…
		4	D4E/I2/3P(400V50Hz)	100x180x100	ZE-…
	Single-phase	0.75 max rating	D4E/I2/1P+N(230V50Hz)	100x180x100	ZE-… (see Note 2 below)

		Motor rating AC-3, 400 V kW	Part number (See Note 1 below)	Enclosure dimensions WxHxD (mm)	Overload relay required
Direct-on-line starters – insulated enclosures – protection standard IP65					
	Without isolator	4	XD4/I	120x222x125	ZB12-…
		5.5	XD5,5/I	120x222x125	ZB12-…
		7.5	XD7,5/I	120x222x125	ZB12-…
		11	XD11/I	160x240x160	ZB32-…
		15	XD15/I	160x240x160	ZB32-…
		18.5	XD18,5/I	187.5x250x175	ZB65-…
		22	XD22/I	187.5x250x175	ZB65-…
		30	XD30/I	187.5x250x175	ZB65-…
	With isolator	4	XDP4/I	120x222x160	ZB12-…
		5.5	XDP5,5/I	120x222x160	ZB12-…
		7.5	XDP7,5/I	160x240x160	ZB12-…
		11	XDP11/I	160x240x160	ZB32-…
		15	XDP15/I	160x240x160	ZB32-…
		18.5	XDP18,5/I	375x250x175	ZB65-…
		22	XDP22/I	375x250x175	ZB65-…
		30	XDP30/I	375x250x175	ZB65-…
Direct-on-line starters – sheet steel enclosures – protection standard IP55					
	Without isolator	4	XD4/ST	104x174x134	ZB12-…
		5.5	XD5,5/ST	104x174x134	ZB12-…
		7.5	XD7,5/ST	104x174x134	ZB12-…
		11	XD11/ST	184x184x149	ZB32-…
		15	XD15/ST	184x184x149	ZB32-…
		18.5	XD18,5/ST	300x300x200	ZB65-…
		22	XD22/ST	300x300x200	ZB65-…
		30	XD30/ST	300x300x200	ZB65-…
	With isolator	4	XDP4/ST	184x184x149	ZB12-…
		5.5	XDP5,5/ST	184x184x149	ZB12-…
		7.5	XDP7,5/ST	184x184x149	ZB12-…
		11	XDP11/ST	184x184x149	ZB32-…
		15	XDP15/ST	184x184x149	ZB32-…
		18.5	XDP18,5/ST	300x300x200	ZB65-…
		22	XDP22/ST	300x300x200	ZB65-…
		30	XDP30/ST	300x300x200	ZB65-…

Notes

1 Add control voltage, either "(230V50Hz)" or "(400V50Hz)".

2 For single-phase motors, always select the overload relay according to the exact full-load current on the motor rating plate. See page 8 for ZE overload relays.

		Motor rating AC-3, 400 V kW	Part number (See Note 1 below)	Enclosure dimensions WxHxD (mm)	Overload relay required
Direct-on-line reversing starters – insulated enclosures – protection standard IP65					
	Without isolator	4	XDR4/I	160x240x160	ZB12-…
		5.5	XDR5,5/I	160x240x160	ZB12-…
	With isolator	4	XDRP4/I	200x280x160	ZB12-…
		5.5	XDRP5,5/I	200x280x160	ZB12-…
Direct-on-line reversing starters – sheet steel enclosures – protection standard IP55					
	Without isolator	4	XDR4/ST	184x184x149	ZB12-…
		5.5	XDR5,5/ST	184x184x149	ZB12-…
	With isolator	4	XDRP4/ST	284x184x149	ZB12-…
		5.5	XDRP5,5/ST	284x184x149	ZB12-…

Notes
1 Add control voltage, either "(230V50Hz)" or "(400V50Hz)".

		Motor rating AC-3, 400 V kW	Part number (See Note 1 below)	Enclosure dimensions WxHxD (mm)	Overload relay required (See Note 2 below)
Star-delta starters – insulated enclosures – protection standard IP65					
	Without isolator	5.5	XSD5,5/I	200x280x160	ZB12-…
		7.5	XSD7,5/I	200x280x160	ZB12-…
		11	XSD11/I	200x280x160	ZB12-…
		15	XSD15/I	200x280x160	ZB32-…
		22	XSD22/I	250x375x175	ZB32-…
		30	XSD30/I	250x375x175	ZB32-…
		37	XSD37/I	250x375x225	ZB65-…
		45	XSD45/I	250x375x225	ZB65-…
		55	XSD55/I	375x375x225	ZB65-…
	With isolator	5.5	XSDP5,5/I	375x250x150	ZB12-…
		7.5	XSDP7,5/I	375x250x150	ZB12-…
		11	XSDP11/I	375x250x150	ZB12-…
		15	XSDP15/I	375x250x150	ZB32-…
		22	XSDP22/I	375x375x175	ZB32-…
		30	XSDP30/I	375x375x175	ZB32-…
		37	XSDP37/I	375x375x225	ZB65-…
		45	XSDP45/I	375x375x225	ZB65-…
		55	XSDP55/I	375x500x225	ZB65-…
Star-delta starters – sheet steel enclosures – protection standard IP55					
	Without isolator	5.5	XSD5,5/ST	284x184x149	ZB12-…
		7.5	XSD7,5/ST	284x184x149	ZB12-…
		11	XSD11/ST	284x184x149	ZB12-…
		15	XSD15/ST	284x184x149	ZB32-…
		22	XSD22/ST	300x300x200	ZB32-…
		30	XSD30/ST	300x300x200	ZB32-…
		37	XSD37/ST	300x300x200	ZB65-…
		45	XSD45/ST	300x300x200	ZB65-…
		55	XSD55/ST	300x400x200	ZB65-…
		75	XSD75/ST	400x500x200	ZB150-…
		90	XSD90/ST	400x500x200	ZB150-…
	With isolator	5.5	XSDP5,5/ST	284x184x149	ZB12-…
		7.5	XSDP7,5/ST	284x184x149	ZB12-…
		11	XSDP11/ST	284x184x149	ZB12-…
		15	XSDP15/ST	285x305x159	ZB32-…
		22	XSDP22/ST	400x400x200	ZB32-…
		30	XSDP30/ST	400x400x200	ZB32-…
		37	XSDP37/ST	400x400x200	ZB65-…
		45	XSDP45/ST	400x400x200	ZB65-…
		55	XSDP55/ST	400x400x200	ZB65-…
		75	XSDP75/ST	500x500x200	ZB150-…
		90	XSDP90/ST	500x500x200	ZB150-…
Star-delta starters – open chassis					
	Without isolator	5.5	SDAINLM12	158x68x117	ZB12-…
		7.5	SDAINLM16	158x68x117	ZB12-…
		11	SDAINLM22	158x68x117	ZB12-…
		15	SDAINLM30	158x85x138	ZB32-…
		22	SDAINLM45	158x85x138	ZB32-…
		30	SDAINLM55	158x85x138	ZB32-…
		37	SDAINLM70	188x115x147	ZB65-…
		45	SDAINLM90	188x115x147	ZB65-…
		55	SDAINLM115	188x115x147	ZB65-…
		75	SDAINLM140	308x314x183	ZB150-…
		90	SDAINLM165	308x314x183	ZB150-…
		110	SDAINLM200	308x314x183	ZB150-…
		132	SDAINLM260	308x314x183	ZB150-…

Notes
1 Add control voltage, either "(230V50Hz)" or "(400V50Hz)".
2 Star-delta selection based on overload relay being mounted directly below main or delta contactor. Set relay to 0.58 x rated motor current.

Guide to overload relay selection for starters

Motor rating at AC-3, 400 V		For starter types				
DOL kW	Star-Delta kW	D4E…	XD(P)4 – 7,5 XDR(P)4 – 5,5 XSD(P)5,5 – 11 SDAINLM12 – 22	XD(P)11 – 15 XSD(P)15 – 30 SDAINLM30 – 55	XD(P)18,5 – 30 XSD(P)37 – 55 SDAINLM70 – 115	XSD(P)75 – 90 SDAINLM140 – 260
0.25	–	ZE-1	ZB12-1	–	–	–
0.37	–	ZE-1,6	ZB12-1,6	–	–	–
0.55	1.1	ZE-1,6	ZB12-1,6	–	–	–
0.75	1.5	ZE-2,4	ZB12-2,4	–	–	–
1.1	2.2	ZE-4	ZB12-4	–	–	–
1.5	3	ZE-4	ZB12-4	–	–	–
2.2	4	ZE-6	ZB12-6	–	–	–
3	5.5	ZE-9	ZB12-10	–	–	–
4	7.5	ZE-9	ZB12-10	–	–	–
5.5	–	–	ZB12-12	–	–	–
7.5	11	–	ZB12-16	–	–	–
11	15	–	–	ZB32-24	–	–
–	18.5	–	–	ZB32-24	–	–
–	22	–	–	ZB32-24	–	–
15	30	–	–	ZB32-32	–	–
18.5	37	–	–	–	ZB65-40	–
22	45	–	–	–	ZB65-57	–
30	–	–	–	–	ZB65-57	–
–	55	–	–	–	ZB65-65	–
–	75	–	–	–	–	ZB150-100
–	90	–	–	–	–	ZB150-100
–	110	–	–	–	–	ZB150-125
–	132	–	–	–	–	ZB150-150

Notes

1 Always check motor rating plate for exact full load current.

2 Star-delta selection based on overload relay being mounted directly below main or delta contactor. Set the relay to 0.58 x rated motor current.

3 See page 8 for full range of overload relays.

Overload relays

For direct mounting on contactors







	For use with contactors				
	DILEM	DILM7 – DILM12	DILM17 – DILM32	DILM40 – DILM65	DILM80 – DILM150
Setting range of overload trip (A)	Part number	Part number	Part number	Part number	Part number
0.1 – 0.16	ZE-0,16	ZB12-0,16	ZB32-0,16	–	–
0.16 – 0.24	ZE-0,24	ZB12-0,24	ZB32-0,24	–	–
0.24 – 0.4	ZE-0,4	ZB12-0,4	ZB32-0,4	–	–
0.4 – 0.6	ZE-0,6	ZB12-0,6	ZB32-0,6	–	–
0.6 – 1	ZE-1	ZB12-1	ZB32-1	–	–
1 – 1.6	ZE-1,6	ZB12-1,6	ZB32-1,6	–	–
1.6 – 2.4	ZE-2,4	ZB12-2,4	ZB32-2,4	–	–
2.4 – 4	ZE-4	ZB12-4	ZB32-4	–	–
4 – 6	ZE-6	ZB12-6	ZB32-6	–	–
6 – 9	ZE-9	–	–	–	–
6 – 10	–	ZB12-10	ZB32-10	ZB65-10	–
9 – 12	–	ZB12-12	–	–	–
10 – 16	–	–	ZB32-16	ZB65-16	–
12 – 16	–	ZB12-16	–	–	–
16 – 24	–	–	ZB32-24	ZB65-24	–
24 – 32	–	–	ZB32-32	–	–
24 – 40	–	–	–	ZB65-40	–
25 – 35	–	–	–	–	ZB150-35
35 – 50	–	–	–	–	ZB150-50
40 – 57	–	–	–	ZB65-57	–
50 – 65	–	–	–	ZB65-65	–
50 – 70	–	–	–	–	ZB150-70
70 – 100	–	–	–	–	ZB150-100
95 – 125	–	–	–	–	ZB150-125
120 – 150	–	–	–	–	ZB150-150

Notes

1 All Moeller overload relays have phase failure sensitivity to IEC/EN 60947.

Enclosed isolators

The reliable and robust T and P isolators are quick and easy to install and, together with simple selection, offer savings in both time and cost. Current ratings are from 20 A to 100 A with AC-23 power ratings from 6.5 kW to 50 kW. They are suitable for main, maintenance and Emergency-Stop switches.

Features and benefits

- All switches to IEC/EN 60204 & IEC/EN 60947
- Padlockable in the OFF position (using up to three padlocks) for safe, secure maintenance.
- Available in insulated, sheet steel or stainless steel enclosures to meet all applications.
- With a high protection standard of up to IP65, they can be used in most environments including the food industry.

Ratings

			T0	T3	T5B	T5	P1		P3	
Three-phase motor ratings	AC-23, 400 V	kW	6.5	13	22	30	13	15	37	50
Three-phase motor ratings	AC-3, 400 V	kW	4	12	22	30	7.5	13	30	37
Rated operational current	AC-21, 400 V	A	20	32	63	100	25	32	63	100
Rated uninterrupted current (I_u)		A	20	32	63	100	25	32	63	100

	No of poles	Rated uninterrupted current I_u (A)	Part number	Enclosure dimensions WxHxD (mm)
Insulated enclosures – protection standard IP65				
	1	20	T0-1-8200/I1H/SVB	80x137x75
		32	T3-1-8200/I2H/SVB	100x180x80
		63	T5B-1-8200/I4/SVB	160x240x95
		100	T5-1-8200/I5/SVB	200x280x125
	2	20	T0-1-102/I1H/SVB	80x137x75
		32	T3-1-102/I2H/SVB	100x180x80
		63	T5B-1-102/I4/SVB	160x240x95
		100	T5-1-102/I5/SVB	200x280x125
	3	20	T0-2-1/I1H/SVB	80x137x75
		25	P1-25/I2H/SVB	100x180x80
		32	P1-32/I2H/SVB	100x180x80
		63	P3-63/I4/SVB	160x240x95
		100	P3-100/I5/SVB	200x280x125
	6 + 1NO & 1NC auxiliary contacts	20	T0-4-15682/I1H/SVB	80x137x95
		32	T3-4-15682/I2H/SVB	100x180x100
		63	T5B-4-15682/I4/SVB	160x240x160
		100	T5-4-15682/I5/SVB	200x280x160
Sheet steel enclosures – protection standard IP55				
	3	20	T0-2-1/ST/SVB	104x174x134
		25	P1-25/ST/SVB	104x174x134
		32	P1-32/ST/SVB	104x174x134
		63	P3-63/ST/SVB	184x184x149
		100	P3-100/ST/SVB	184x184x149
	6 + 1NO & 1NC auxiliary contacts	20	T0-4-15682/ST/SVB	104x174x134
		32	T3-4-15682/ST/SVB	184x284x149
		63	T5B-4-15164/ST/SVB	184x284x149
		100	T5-4-15164/ST/SVB	184x284x149
Stainless steel enclosures – protection standard IP65				
	3	20	T0-2-1/SS1/SVB	160x170x100
		25	P1-25/SS1/SVB	160x170x100
		32	P1-32/SS1/SVB	160x170x100
		63	P3-63/SS2/SVB	240x180x140
		100	P3-100/SS2/SVB	240x180x140
	6 + 1NO & 1NC auxiliary contacts	20	T0-4-15682/SS1/SVB	160x170x100
		32	T3-4-15682/SS3/SVB	285x245x150
		63	T5B-4-15164/SS3/SVB	285x245x150
		100	T5-4-15164/SS3/SVB	285x245x150

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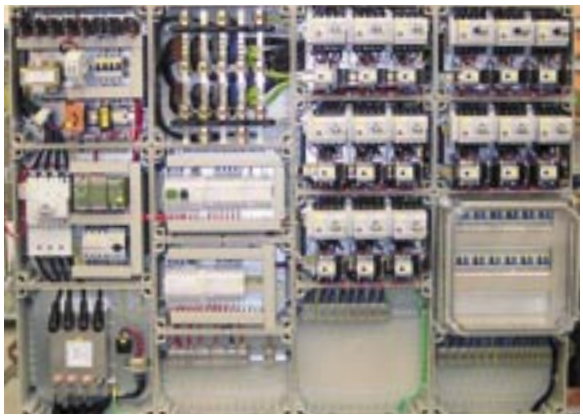
By partnering with others we are able to provide a broad package of engineered products. From a simple motor starter with an ammeter or hand-off-auto switch, right through to a fully designed and engineered power distribution system, KeyBuild offers Moeller's whole catalogue – in a box.

- Modified motor starters
- Custom-control panels
- Fully assembled distribution boards
- Complete design and support service

For more information about KeyBuild contact your local Moeller Sales Engineer, call Technical Support on 01296 397400 or visit our web site: www.moeller.co.uk







Technical data

Rated currents of three-phase motors (guidelines for normal AC induction motors)

Minimum fuse size for the protection of three-phase motors
The maximum size is governed by the requirements of the associated switchgear or overload relay

Motor rating			230 V			400 V			500 V			690 V		
			Rated motor current	Fuse		Rated motor current	Fuse		Rated motor current	Fuse		Rated motor current	Fuse	
				Starting direct	Y/Δ		Starting direct	Y/Δ		Starting direct	Y/Δ		Starting direct	Y/Δ
kW	cos φ	η (%)	A	A	A	A	A	A	A	A	A	A	A	A
0.06	0.7	58	0.37	2	–	0.21	2	–	0.17	2	–	0.12	2	–
0.09	0.7	60	0.54	2	–	0.31	2	–	0.25	2	–	0.18	2	–
0.12	0.7	60	0.72	4	2	0.41	2	–	0.33	2	–	0.24	2	–
0.18	0.7	62	1.04	4	2	0.6	2	–	0.48	2	–	0.35	2	–
0.25	0.7	62	1.4	4	2	0.8	4	2	0.7	2	–	0.5	2	–
0.37	0.72	66	2	6	4	1.1	4	2	0.9	2	2	0.7	2	–
0.55	0.75	69	2.7	10	4	1.5	4	2	1.2	4	2	0.9	4	2
0.75	0.79	74	3.2	10	4	1.9	6	4	1.5	4	2	1.1	4	2
1.1	0.81	74	4.6	10	6	2.6	6	4	2.1	6	4	1.5	4	2
1.5	0.81	74	6.3	16	10	3.6	6	4	2.9	6	4	2.1	6	4
2.2	0.81	78	8.7	20	10	5	10	6	4	10	4	2.9	10	4
3	0.82	80	11.5	25	16	6.6	16	10	5.3	16	6	3.8	10	4
4	0.82	83	14.8	32	16	8.5	20	10	6.8	16	10	4.9	16	6
5.5	0.82	86	19.6	32	25	11.3	25	16	9	20	16	6.5	16	10
7.5	0.82	87	26.4	50	32	15.2	32	16	12.1	25	16	8.8	20	10
11	0.84	87	38	80	40	21.7	40	25	17.4	32	20	12.6	25	16
15	0.84	88	51	100	63	29.3	63	32	23.4	50	25	17	32	20
18.5	0.84	88	63	125	80	36	63	40	28.9	50	32	20.9	32	25
22	0.84	92	71	125	80	41	80	50	33	63	32	23.8	50	25
30	0.85	92	96	200	100	55	100	63	44	80	50	32	63	32
37	0.86	92	117	200	125	68	125	80	54	100	63	39	80	50
45	0.86	93	141	250	160	81	160	100	65	125	80	47	80	63
55	0.86	93	173	250	200	99	200	125	79	160	80	58	100	63
75	0.86	94	233	315	250	134	200	160	107	200	125	78	160	100
90	0.86	94	279	400	315	161	250	200	129	200	160	93	160	100
110	0.86	94	342	500	400	196	315	200	157	250	160	114	200	125
132	0.87	95	401	630	500	231	400	250	184	250	200	134	250	160
160	0.87	95	486	630	630	279	400	315	224	315	250	162	250	200
200	0.87	95	607	800	630	349	500	400	279	400	315	202	315	250
250	0.87	95	–	–	–	437	630	500	349	500	400	253	400	315
315	0.87	96	–	–	–	544	800	630	436	630	500	316	500	400
400	0.88	96	–	–	–	683	1000	800	547	800	630	396	630	400
450	0.88	96	–	–	–	769	1000	800	615	800	630	446	630	630
500	0.88	97	–	–	–	–	–	–	–	–	–	491	630	630
560	0.88	97	–	–	–	–	–	–	–	–	–	550	800	630
630	0.88	97	–	–	–	–	–	–	–	–	–	618	800	630

Notes

1 The rated motor currents apply to normal, internally-ventilated and enclosed fan-cooled three-phase motors at 1500 rpm.
2 D.O.L. starting: Maximum starting current 6 x rated motor current. Maximum starting time 5 seconds.
3 Y/Δ starting: Maximum starting current 2 x rated motor current. Maximum starting time 15 seconds. Set the relay in the phase lead to 0.58 x rated motor current.
4 Rated fuse currents for Y/Δ starting also apply to three-phase motors with slip-ring rotors.
5 Use a larger fuse if the rated current or starting current is higher and/or if the starting time is longer.
6 The table applies to "slow" or "gL" fuses (VDE 0636).
7 LV h.b.c. fuses with aM characteristics, select fuse size to match rated current.

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