

This is Crompton Controls

Starters

Enclosures



Various Options Available

IP55 Enclosure



Features Include:

- Robust pressed steel enclosures to IP55 BS5420 (IEC 144)
- Epoxy paint finish with colour RAL 7032
- Triple Pole Double Break contacts
- Mechanical life 10×10^6 operations
- Electrical life 5×10^5 operations
- Triple Pole thermal overload
- Single phasing protection
- Ambient temperature compensation
- Hand Reset via Stop Button
- Overload separate Trip/Alarm contacts
- Under Voltage protection
- Built in Push Buttons
- Provision for Remote Control
- On-Load Isolators (where fitted)
- Isolators interlocked with cover
- Complies with: BS EN 60947-4-1: 2001
BS EN 60439-1: 1994 (IEC 439-1-1999)
BS EN 60529: 1992



**SERIES
2000**



The Series 2000 range of starters includes • Direct on Line to 55 amps with/without isolator • Star Delta to 55 amps • Reversing to 30 amps • Two Speed Dual Wound to 16 amps • Two Speed Pole Change to 26 amps • Duty Standby to 16 amps • Single Phase Series Parallel to 42 amps • Fan Shaker to 26 amps • D.O.L. Flush Mounted to 16 amps • DC Injection Brake Units • This range of enclosures will also incorporate custom built equipment to meet customer specifications.

Optional extras include • Enclosures to IP65 • Neon Indicator Lamps • Mushroom Head Stop Buttons • Self Resetting Overload Units • Interiors (DIN Rail/Chassis mounting) • Extra Auxiliary Contacts • Customised Variations • Isolator Padlocking • Line to Neutral Control Circuits • Separate Control Circuits • Ammeter • Hours Counter • Thermistor Protection, BS4999 Part 111:1987.

Please note: The following tables are colour coded to indicate enclosure sizes as follows:-

SIZE 0

SIZE 1

SIZE 2

SIZE 3

SIZE 4

For exact dimensions please see back page (colour code cross referenced)

Direct On Line - Surface Mounting Type: DL

Max. FLC @ 415V	Approximate kW (HP)	Without Isolator Type	With Isolator Type	With Isolator & Fuses Type
12	5.5 (7.5)	DL1- - C*		
15	7.5 (10)	DL2- - C*		
16	7.5 (10)	DL2- - C*		
12	5.5 (7.5)	DL1- - S	DL1- - I	DL1- - F
15	7.5 (10)	DL2- - S	DL2- - I	DL2- - F
16	7.5 (10)	DL2- - S	DL2- - I	DL2- - F
21	11 (15)	DL3- - S	DL3- - I	DL3- - F
26	11 (15)	DL4- - S	DL4- - I	DL4- - F
30	15 (20)	DL4- - S	DL4- - I	DL4- - F
48	26 (35)	DL5- - S	DL5- - I	DL5- - F
55	30 (40)	DL6- - S	DL6- - I	DL6- - F

*Please Note: C = Combination Plastic lid/Steel base enclosures. All other enclosures are Steel. Auxiliary Blocks cannot be fitted on 'C' type starters. Larger D.O.L. starters available up to 440kW.

Star Delta - Surface Mounting Type: SD

Max. FLC @ 415V	Approximate kW (HP)	Without Isolator Type	With Isolator Type	With Isolator & Fuses Type
22	11 (15)	SD1- - S	SD1- - I	SD1- - F
29	15 (20)	SD2- - S	SD2- - I	SD2- - F
40	18.5 (25)	SD3- - S	SD3- - I	
43	22 (30)	SD3- - S	SD3- - I	
55	30 (40)	SD4- - S	SD4- - I	

Please Note: Larger Star Delta starters available up to 750kW. For high inertia/long run up times, please refer to our design engineers.

Series Parallel - Surface Mounting Type: SP

Max. FLC @ 415V	Approximate kW (HP)	Without Isolator Type	With Isolator Type	With Isolator & Fuses Type
24	3.7 (5)	SP1- - S	SP1- - I	SP1- - F
32	5.5 (7.5)	SP2- - S	SP2- - I	SP2- - F

Please note: Overload setting range. Overload rated half full load current of motor. Please state Motor Connection Diagram. For Single Phase Series Parallel starters above 5.5kW - P.O.A. Motor frame size D160/180 require low amp torque starters, please consult our design engineers for details.

Direct On Line Reversing - Surface Mounting Type: DR

Max. FLC @ 415V	Approximate kW (HP)	Without Isolator Type	With Isolator Type	With Isolator & Fuses Type
12	5.5 (7.5)	DR1- - S	DR1- - I	DR1- - F
15	7.5 (10)	DR2- - S	DR2- - I	DR2- - F
16	7.5 (10)	DR2- - S	DR3- - I	DR2- - F
21	11 (15)	DR3- - S	DR3- - I	DR3- - F
30	15 (20)	DR4- - S	DR4- - I	DR4- - F

Please Note: Reversing starters are only available complete with overload fitted.

Two Speed Dual Wound - Surface Mounting Type: DW

Max. FLC @ 415V	Approximate kW (HP)	Without Isolator Type	With Isolator Type	With Isolator & Fuses Type
12	5.5 (7.5)	DW1- - S	DW1- - I	DW1- - F
15	7.5 (10)	DW2- - S	DW2- - I	DW2- - F
16	7.5 (10)	DW2- - S	DW3- - I	DW2- - F

Please note: Specify FLC for both high and low speeds at time of order.

Two Speed Pole Change - Surface Mounting Type: PC

Max. FLC @ 415V	Approximate kW (HP)	Without Isolator Type	With Isolator Type	With Isolator & Fuses Type
12	5.5 (7.5)	PC1- - S	PC1- - I	PC1- - F
15	7.5 (10)	PC2- - S	PC2- - I	PC2- - F
16	7.5 (10)	PC2- - S	PC2- - I	PC2- - F
21	11 (15)	PC3- - S	PC3- - I	PC3- - F
26	11 (15)	PC4- - S	PC4- - I	PC4- - F

Please Note: Overload setting range. High speed overload rated half full load current of motor.

Duty Standby - Surface Mounting Type: DS

Max. FLC @ 415V	Approximate kW (HP)	Without Isolator Type	With Isolator Type	With Isolator & Fuses Type
12	5.5 (7.5)	DS1- - S	DS1- - I	DS1- - F
15	7.5 (10)	DS2- - S	DS2- - I	DS2- - F
16	7.5 (10)	DS2- - S	DS2- - I	DS2- - F

Fan Shaker - Surface Mounting Type: FS

Max. FLC @ 415V	Approximate kW (HP)	Without Isolator Type	With Isolator Type	With Isolator & Fuses Type
12	5.5 (7.5)	FS1- - S	FS1- - I	FS1- - F
16	7.5 (10)	FS2- - S	FS2- - I	FS2- - F
21	11 (15)	FS3- - S	FS3- - I	FS3- - F
26	11 (15)	FS4- - S	FS4- - I	FS4- - F

Please Note: For other sizes consult our Sales/Design office.

D.O.L. Flush Mounted - Flush Mounting Type: DF

Max. FLC @ 415V	Approximate kW (HP)	Without Isolator Type
11	5.5 (7.5)	DF1- - S
15	7.5 (10)	DF2- - S
16	7.5 (10)	DF2- - S

Ordering Information - Starter Codes

Starter Type (First two digits)	Main Contactor (Third digit)	Coil Voltages (Fourth digit)	Overload Range (Fifth digit)	Variations (Sixth digit)
DL - Direct on Line DR - Direct on Line Reversing SD - Star Delta DW - Dual Wound PC - Pole Change SP - Series Parallel DS - Duty Standby FS - Fan Shaker EBS - Enclosures only	At 415V AC3 0 1 - HR09 5.5 kW 0 2 - HR13 7.5 kW 0 3 - HR17 11.0 kW 0 4 - HR25 15.0 kW 0 5 - HR40 22.0 kW 0 6 - HR55 30.0 kW	50Hz 60Hz A - 110V N - 110V C - 230V P - 208V D - 24V R - 220V E - 400V Q - 240V F - 440V T - 460V G - 480V V - 550V I - 48V W - 575V M - 500V X - 380V Y - 415V Z - 440V	Type: RF 25 Ref. D.O.L. Star Delta X 0.14/0.23 A 0.2-0.33 B 0.3-0.5 C 0.45-0.75 D 0.6-1 E 0.9-1.5 F 1.4-2.3 G 2-3.3 3.4-5.7 H 3-5 5.2-8.6 J 4.5-7.5 7.8-13 K 6-10 10-17 L 9-15 15-26 M 14-23 24-40 *N 17-26 30-45 Type: RF 95 *R 20-33 35-57 *S 28-42 48-72 *T 35-48 60-86 *V 46-65 80-112 *W 60-82 103-142 *P 70-95 121-164 Y Thermistor Protection Z Wired for O/L to be fitted, without overload unit.	S - Standard I - With Isolator F - With Isolator and Mains Fuses (Switch Fuse)† L - With Mains Fuses P - Plastic Enclosure C - Combination Plastic/Metal U - Unenclosed Non-standard starters are allocated a unique part number prefixed DZ

EG:
A Star Delta starter 415V/3ph50Hz, complete with isolator and ammeter, overload range 24-40 amps is: SD3EMI/04. Other example as photograph.

* Non Series 2000 - Overload reference prefixed by a letter (L or C)

† Non Series 2000 - Switch Fuse Fitted

STANDARDS: Starters fitted with HR type contactors and RF type overloads comply with IEC 947-4 and offer type 2 co-ordination.

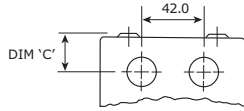
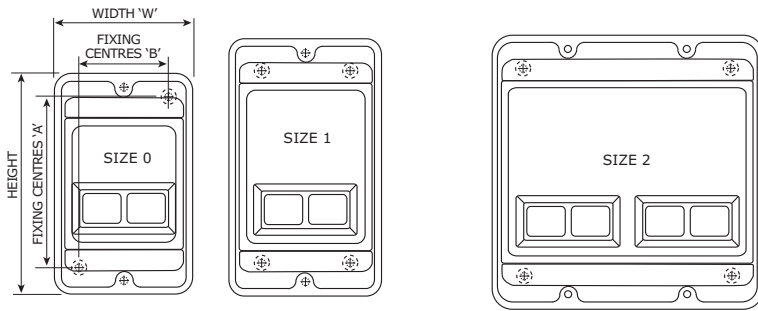


DL1EMS/04

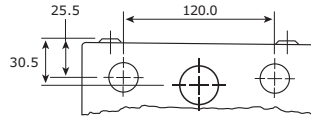
Suffix codes indicating standard extra features

01 Stop/Reset Only	08 Indicator Lamp - Motor Running	15 Single Phase & Separate Control Circuit
02 Press to Run	09 Anti-Condensation Heater	16 Single Phase & Control Circuit Transformer
03 Hand/Off/Auto Switch	10 Single Phase Mains Wiring	17 Single Phase & Indicator Lamp - Motor Running
04 Ammeter	11 Single Phase & Stop Reset	18 Single Phase & Anti-Condensation Heater
05 Separate Control Circuit	12 Single Phase & Press to Run	
06 Control Circuit Transformer	13 Single Phase & H.O.A.	
07 Line - Neutral Control	14 Single Phase & Ammeter	

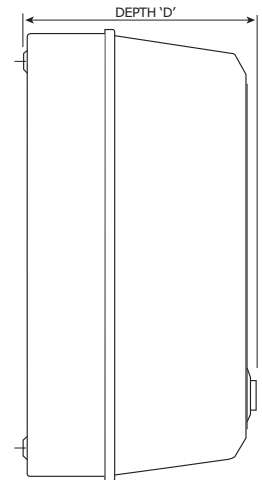
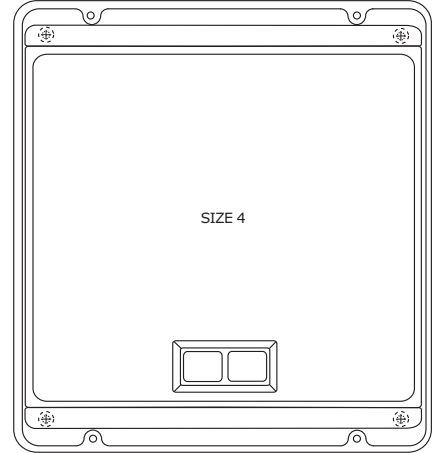
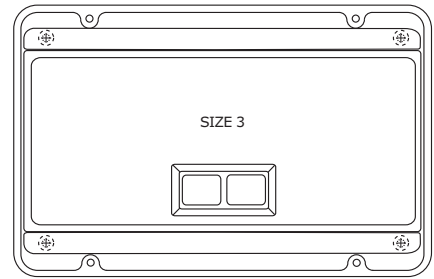
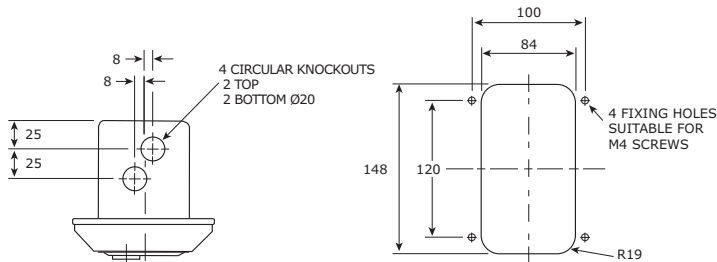
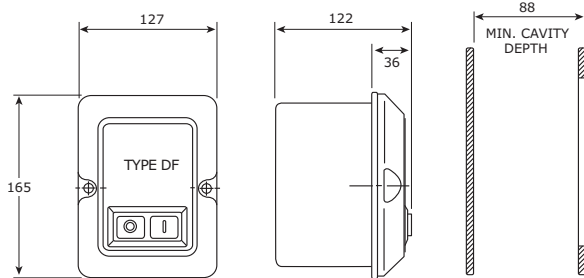
Dimensions



CONDUIT ENTRIES
ENCLOSURE SIZES 0 & 1
4 KNOCKOUTS Ø20



CONDUIT ENTRIES
ENCLOSURE SIZES 2 - - 4 KNOCKOUTS Ø20
2 KNOCKOUTS Ø25
ENCLOSURE SIZES 3 & 4 - 4 KNOCKOUTS Ø25
2 KNOCKOUTS Ø32



Enclosure	Dimensions			Fixing Dimensions			
	H	W	D	A	B	Holes	C
Size 0	140	94	122	115	60	2 Holes Ø4.5	21.5
Size 1	174	104	134	130	60	4 Holes Ø4.5	25.5
Size 2	184	184	149	140	140	4 Holes Ø4.5	
Size 3	184	284	149	140	240	4 Holes Ø4.5	
Size 4	305	285	159	260	240	4 Holes Ø4.5	

Please Note:

Representative drawings for dimensional purposes only. All dimensions in mm.

Please Note: Maximum cable size which should be used in conjunction with these enclosures is 25mm². If the installation requires a larger cable size, please consult us for suitable starter/enclosure.

Empty Box enclosures with plain lid for customer assembly

Ref	Size	Dimensions			Typical Components		Component Mounting
		H	W	D	Contactors	Aux Blocks	
EBS20	0	140	94	122	1 x HR09 or HR13	None	Din Rail
EBS21	1	174	104	134	1 x HR09 or HR13 1 x HR17 or HR25	2 Pole or 4 Pole None	Din Rail
EBS22	2	184	184	149	2 x HR17 or HR25 1 x HR40 or HR55	2 Pole or 4 Pole 2 Pole or 4 Pole	Din Rail or Chassis
EBS23	3	184	284	149	3 x HR17 or HR25	2 Pole or 4 Pole	Chassis
EBS24	4	305	285	159	3 x HR40 or HR55	2 Pole or 4 Pole	Chassis

For Contactor and Auxiliary Blocks see leaflet No. CC2716E



BS EN ISO 9001:2000
Q06357



AUTOMATION
INSTRUMENTATION & CONTROL
LABORATORY TECHNOLOGY



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