



JSL INDUSTRIES LTD.

“Jyoti” Oil-Immersed Star Delta Starters

Introduction

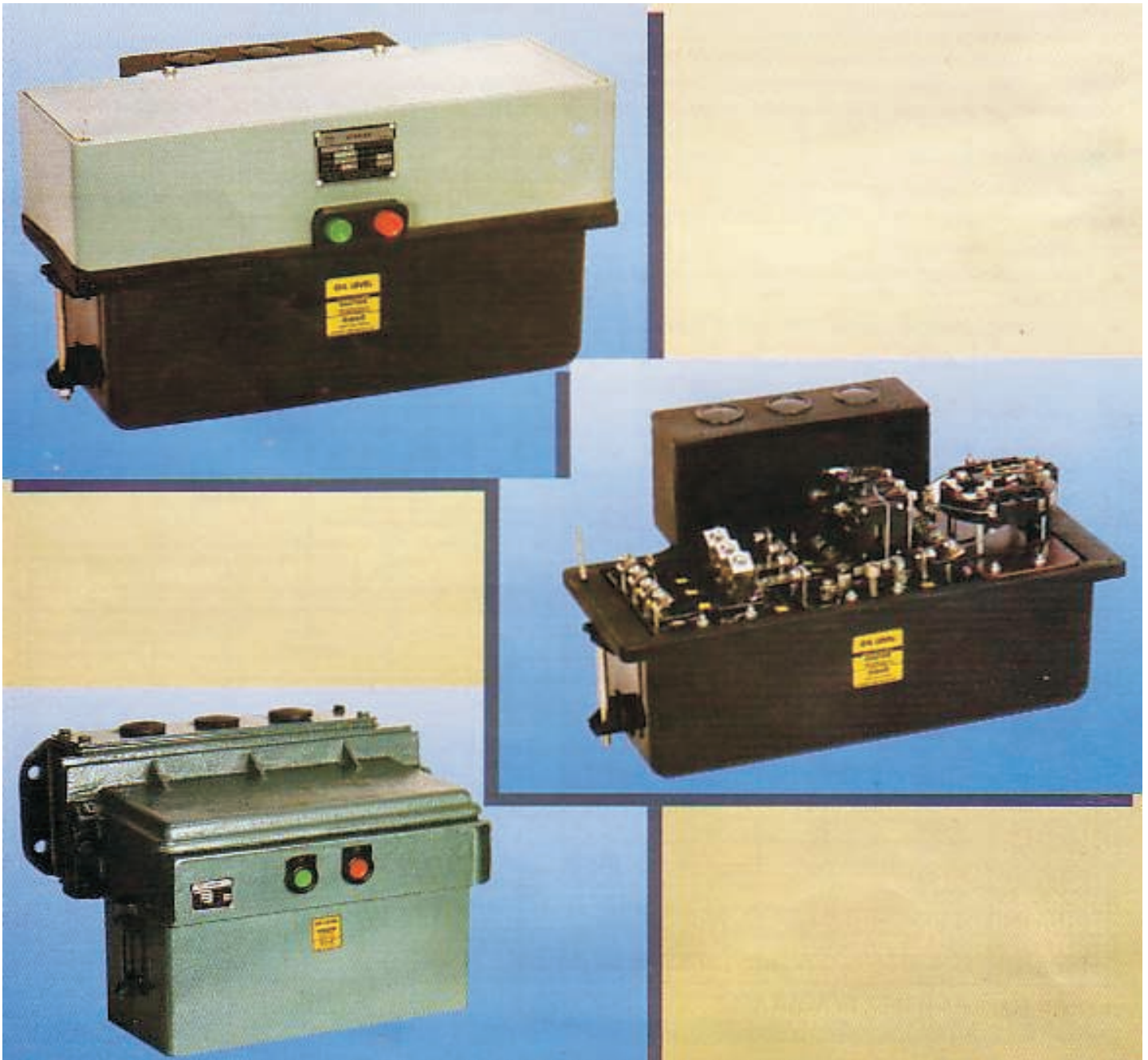
Features & Technical Specification

Drawings

Dimensional Details

Ensures Low Starting
Current and Uniform Motor
Speed

'Jyoti' Oil-Immersed Star Delta Starters



'Jyoti' Oil-Immersed Star Delta Starters Upto 150 kW/200 HP at 415 V Complies with IS : 13947 (Part - 4) : 1993 and IEC - 947 - 4 - 1

'JYOTI' Oil Immersed Contactor Starters continue to grow in demand because of the following advantages :

- Provide life time assurance
- Ensure fail-safe working in corrosive, dusty, fluffy, shaggy, moist, powdery atmosphere
- Use of oil media results in cool operation
- Continuous lubrication results in less wear and tear.

The Standard induction motor is run-up star connected at a reduced voltage. Its current intake and torque go down to one-third of those which would be registered with direct on-line starting in delta connection. Once motor runs upto speed, the motor windings switch over into delta and motor goes into normal operation with its winding carrying full voltage.

The change-over takes place close to rated speed. The current-less interval is so short that it hardly causes a drop in motor speed.

STANDARD FEATURES

- Push Button Operation for ON-OFF
- Operational range-20% to + 15% of Rated coil voltage
- Suitable for intermittent duty class 0.1.
- Starting time in star condition adjustable between 3 secs. To 12 secs.
- Undervoltage protection below 40% of rated Voltage.
- Adequate space and staggered terminations for recommended conductors of either copper or aluminium.

U3 DNZT - Upto 18.5 kW / 25 HP 415 V.
P3DA - Upto 45.0 kW / 60 HP 415 V.
P1DA - Upto 150 kW / 200 HP 415 V.

- Top or bottom entry for external connections.
- Easy to install and maintain.
- Enamel Paint for weather resistance.
- Starter enclosures classified under IP-50

OPTIONAL FEATURES :

Manual reset arrangement for thermal overload relay.

Provision for remote control arrangement.

Starting time in star condition adjustable between 5 secs. To 20 secs.

CONSTRUCTION :

The Star-delta starters have three contactor inserts, (Main,delta and star), mounted on cast iron frame. The thermal overload relay is connected in phase circuit and mounted on contactor terminals. The thermal timer located on base plate is pre-set for desired changeover operation. The timings can be adjusted between 3 to 12 seconds, The contacts and magnet system are immersed in oil tank and terminals are covered.

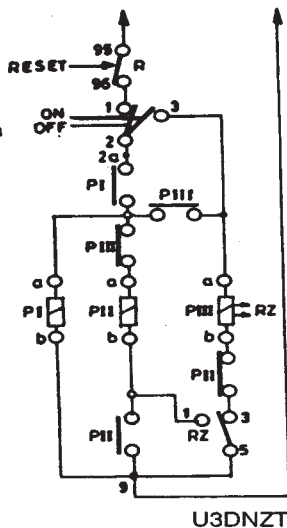
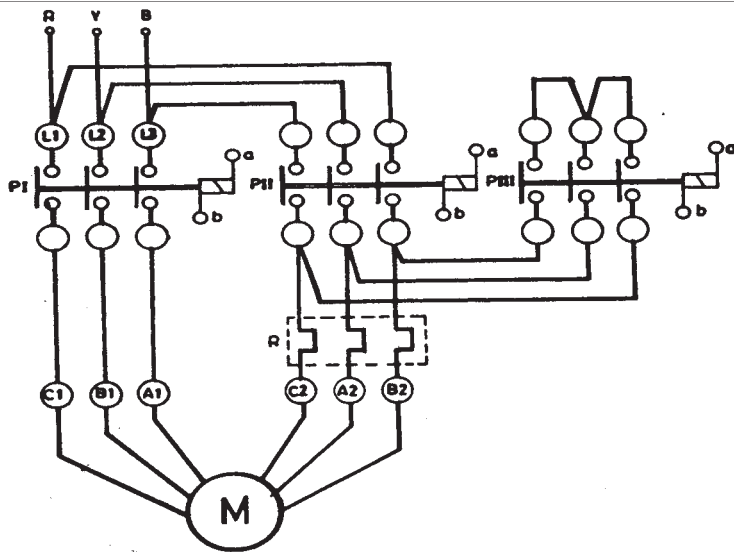
PROTECTION :

Thermal overload relay of suitable range protects motor from overloads. The relay is conneted in phase circuit for close protection during starting and running condition.

SELECTION TABLE : OIL IMMERSED FULLY AUTOMATIC STAR DELTA STARTERS

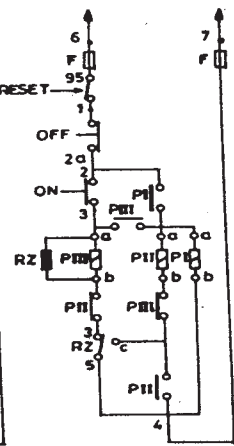
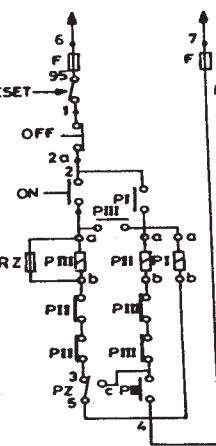
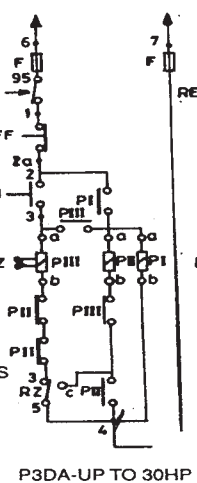
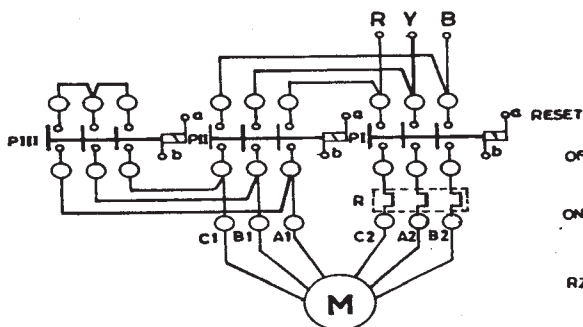
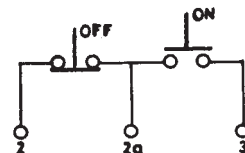
TYPE	Rating kW / HP	Full Load Current In Amps.	Relay Range In Amps.	Recommended Cable Size for Supply Side In mm ²		Recommended Cable Size for Motor Side In mm ²		Recommended HRC Fuse Rating In Amps.	Quantity of Oil required In liters
				Aluminium	Copper	Aluminium	Copper		
U3DNZT-10	3.7/5	7.5	3.6-6	2.5	1.5	1.5	1.5	16	3
U3DNZT-10	5.5/7.5	11	6-10	2.5	2.5	1.5	1.5	20	3
U3DNZT-10	7.5/10	14	6-10	4	2.5	2.5	1.5	25	3
U3DNZT-15	11/15	21	9-15	6	4	4	2.5	35	3
U3DNZT-20	15/20	28	12-20	10	6	6	2.5	35	3
U3DNZT-25	18.5/25	34	15-25	16	10	6	4	50	3
P3DA-20	15/20	28	12-20	10	6	6	2.5	35	8.5
P3DA-25	18.5/25	34	15-25	16	10	6	4	50	8.5
P3DA-30	22/30	39	18-30	16	10	10	6	50	8.5
P3DA-40	30/40	55	24-40	25	16	16	6	63	8.5
*P3DA-50	37/50	66	24-40	35	25	25	10	80	8.5
*P3DA-60	45/60	80	36-60	50	35	35	16	100	8.5
*P1DA-75	55/75	99	48-80	70	35	50	35	125	16.5
P1DA-100	75/100	135	60-100	95	50	70	50	160	16.5
P1DA-125	90/125	165	60-100	150	70	70	50	200	16.5
P1DA-150	110/150	200	90-150	185	95	95	70	200	16.5
P1DA-175	130/175	230	90-150	185	95	95	70	200	16.5
P1DA-200	150/200	260	120-200	240	150	150	120	250	16.5

* ONLY MANUAL RESET IS AVAILABLE



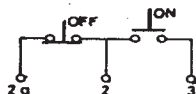
NOTE :

1. CONNECT 95R AND 9 TO THE SUPPLY VOLTAGE SAME AS COIL VOLTAGE
2. FOR REMOTE OPERATION REMOVE CONNECTION BETWEEN 2 & 2S AND CONNECT AS SHOWN BELOW



NOTES:

1. CONNECT 6 AND 7 TO THE SUPPLY VOLTAGE SAME AS COIL VOLTAGE
2. FOR REMOTE OPERATION, REMOVE CONNECTION BETWEEN 2S & 2 AND CONNECT AS SHOWN BELOW

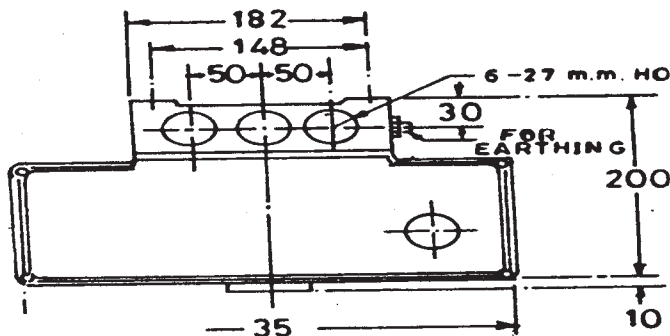
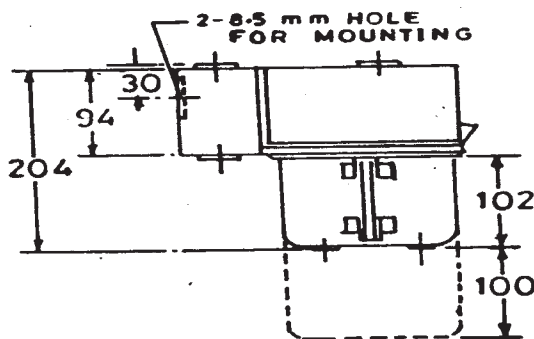
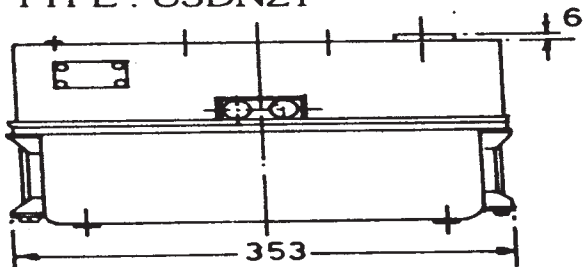


P3DA-UP TO 30HP

P3DA-ABOVE 20HP TO 60HP P1DA-75 HP TO 100 HP

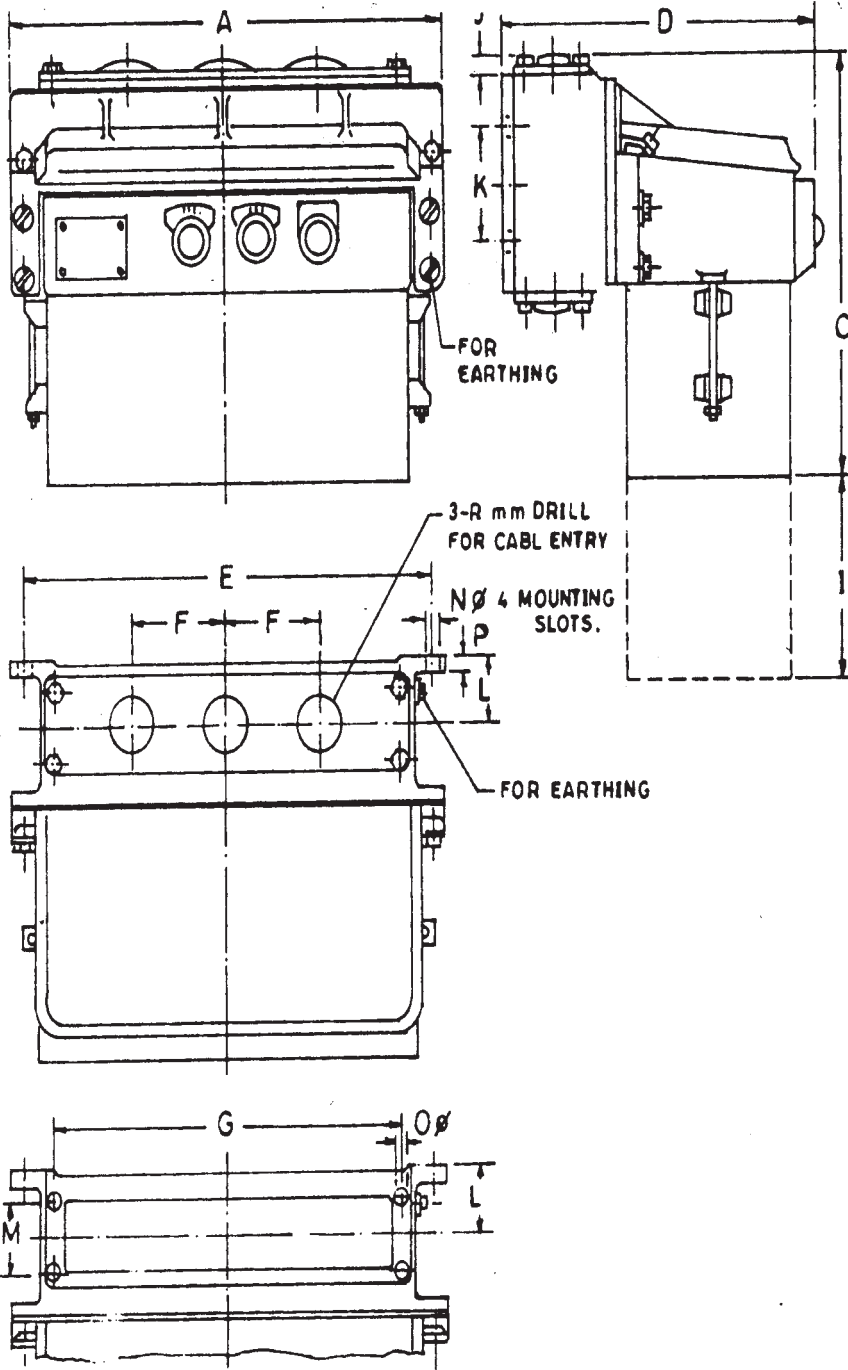
P1DA-UP TO 200 HP

TYPE : U3DNZT



ALL DIMENSIONS IN MM.

TYPE P3DA / P1DA



The relay knob should be set near to 0.58 times motor full load line current, for the satisfactory protection. Delayed action HRC fuses are recommended in Selection Table for short circuit protection, i.e. for current peaks more than 6 times full load current.

ORDERING CODE :

Type of Starter should be suffixed as following to complete specifications.

TYPE :

- Specify as per Selection Table
- Specify Maximum Relay Range
- Specify Coil Voltage Code
- A-110 V AC Coil
- B-230 V AC Coil
- C-380 V AC Coil
- D-415 V AC Coil
- No Code-Standard Auto-Reset Relay
- M-Manual-Reset Relay
- No Code-Standard Local Control
- R-Remote Control facility

For Illustration :

U3DNZT-20-20-D

Indicates Oil Immersed Star Delta Starter 15 kW / 20 HP with Relay Range, 12-20 Amp having coil voltage 415 Volts AC 50 Hz with Auto reset and Local Control as standard features.

TYPE	DIMENSIONS IN mm																	HP RATING	
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	FROM	TO
P3DA	460		348	326.5	434	100	368	466.5	160	10	95	55	60	17	11	12	42Ø	20	60
P1DA	644		400	444	600	135	505	200	17	180	75	75	100	37	11	25	65Ø	75	200