

Starters

Documents corresponding to the product:

Standard EN 60947-1
EN 60947-4-1

The products are in accordance with the directives of EC "Low voltage directives (LVD) no 73/23 EEC" and "Electromagnetic Compatibility Directives (EMC) no. 89/336 EEC".



Starters for direct start

The electromagnetic starters LT 5 Dxx series are devices designed for remote control, direct control and protection of induction motors or other electrical consumers. They are a combination of contactors LT 1 Dxx series and thermal protection LT 2 Exx factory cabled. The starters are offered on the market in metal or plastic boxes with the corresponding IP code from dust and moisture. At mounting there should be provided protection of the device from short circuit through breakers or disconnectors. If necessary, at client's order the factory mounted thermal protection in the pneumatic starter can be substituted. The choice of a suitable protection prevents motor's operation at unusual temperature conditions and guarantees maximum constant operation, increases the effectiveness and prolongs the term of exploitation.

Functions:

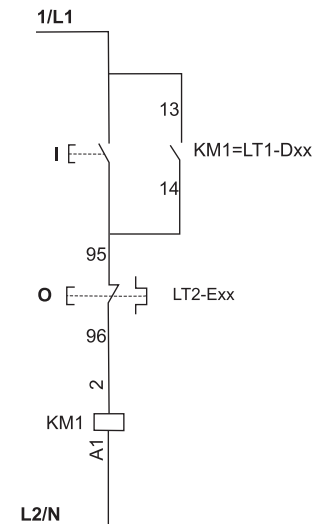
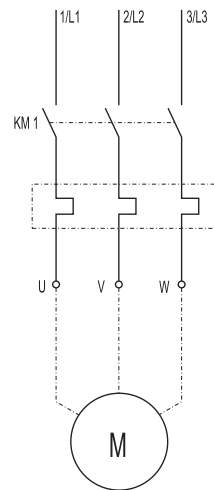
- switching on/off alternating current consumers
- does not allow secondary unwarranted switching on of the starter at transitory lowering of the voltage
- protects the motor from overload in the range of the corresponding thermal protection
- remarkable with high reliability of current characteristics

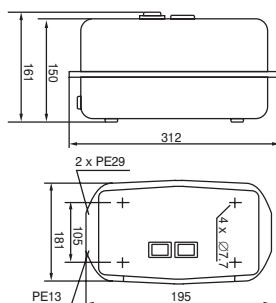
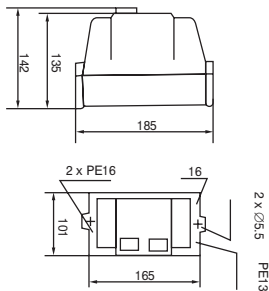
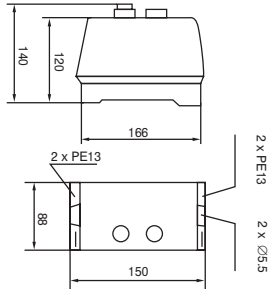
Technical data:

- Rated voltage of the controlling voltage: 230/400V AC; 50/60 Hz

Note: In case you need different controlling coils voltage of the starters you can turn to our regional representatives.

- Rated operating voltage: 690V
- Rated operating current range: from 7 to 93 A AC
- insulation voltage: 690V
- Surge voltage wear resistance: $\geq 6000V$
- Joining terminal: screw terminal
- Little power consumption and small dimensions
- Connecting:
 - flexible or rigid conductors with or without cable terminal for joining to the consumer and section according to the motor power
 - two by two inlets/outlets supplied with orifices for the cables
- Possibility for range adjustment of the protection activating
- IP code: IP 44
- Possibility for operation at higher frequency
- Mounting:
 - mounting to a flat surface (wall) with bolts/screws
 - mounting position: vertical gradient – maximum $\pm 5^\circ$
- Plastic: wear resistance of UV rays and non-flammable (self-extinguishing material)
- Metal corpus: corrosion-proof coating
- Ambient temperature: $-10^\circ C + 60^\circ C$
- Altitude: up to 2000m





Type	Rated capacity of motors 50/60Hz AC-3 category			Rated current (A)	Thermal relay adjustment range	Coil voltage (V)	Packing/Box (pcs)	Catalogue number
	220V 230V	380V 400V	415V 440V					
LT5 D093	2.2	4.0	4.0	9	7 .. 10A	230	1 / 16	43091
						400	1 / 16	43092
LT5 D123	3.0	5.5	5.5	12	9 .. 13A	230	1 / 16	43121
						400	1 / 16	43122
LT5 D185	4.0	7.5	9.0	18	12 .. 18A	230	1 / 16	43181
						400	1 / 16	43182

Note: Upon request the thermal relay will be replaced

Type	Rated capacity of motors 50/60Hz AC-3 category			Rated current (A)	Thermal relay adjustment range	Coil voltage (V)	Packing/Box (pcs)	Catalogue number
	220V 230V	380V 400V	415V 440V					
LT5 D255	5.5	11	11	25	17 .. 25A	230	1 / 16	43251
						400	1 / 16	43252
LT5 D325	7.5	15	15	32	23 .. 32A	230	1 / 16	43321
						400	1 / 16	43322

Note: Upon request the thermal relay will be replaced

Type	Rated capacity of motors 50/60Hz AC-3 category			Rated current (A)	Thermal relay adjustment range	Coil voltage (V)	Packing/Box (pcs)	Catalogue number
	220V 230V	380V 400V	415V 440V					
LT5 D405	11.0	18.5	22	40	30 .. 40A	230	1/6	43401
						400	1/6	43402
LT5 D655	18.5	30.0	37	65	48 .. 65A	230	1/6	43651
						400	1/6	43652
LT5 D955	25.0	45.0	45	95	80 .. 93A	230	1/6	43951
						400	1/6	43952

Note: Upon request the thermal relay will be replaced

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"Star/delta" starter

The electromagnetic starters LT 3 Dxx series are devices designed for remote control, direct control and protection of induction motors coiled and operating according to a starter scheme "star/delta". They are a combination of three contactors LT 1 Dxx series, time relay and a set of buttons "start" and "stop" factory cabled. They provide the easy motor unwinding giving possibility for setting the time for unwinding in "star" as the time for switching between "star" and "delta" is fixed to 0.5 seconds.

The starters are offered on the market in two types:

- closed type – metal boxes providing the corresponding IP code from dust and moisture (IP 54) as at mounting there should be provided protection of the device from short circuit through breakers or disconnectors
- open type – for mounting in distribution boxes as at mounting there should be provided protection of the device from short circuit through breakers or disconnectors

The starters are offered on the market without mounted thermal protection which is purchased separately according to the motor capacity. The choice of a suitable protection prevents motor's operation at unusual temperature conditions and guarantees maximum constant operation, increases the effectiveness and prolongs the term of exploitation.

If necessary, at client's order the power supply operating voltage of the pneumatic starter can be changed.

Functions:

- switching on/off alternating current three phase motors operating according to a scheme "star - delta"
- does not allow secondary unwarranted switching on of the starter at transitory lowering of the voltage
- protects the motor from overload in the range of the corresponding thermal protection

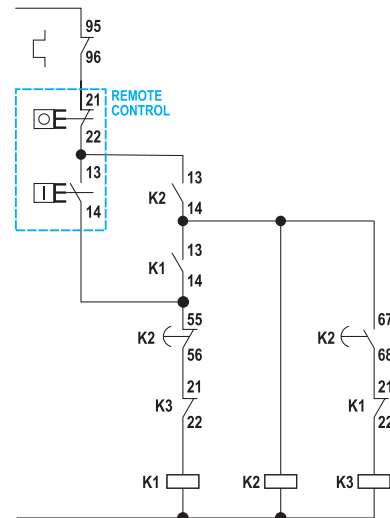
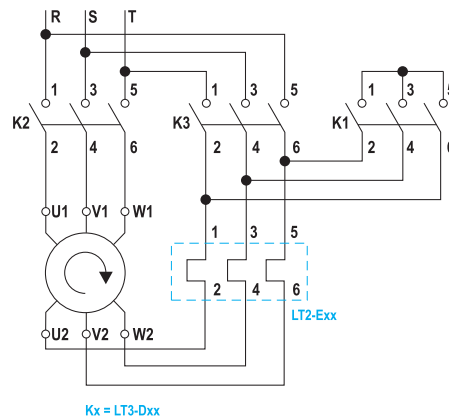
- indication of the operating condition through a valve indicator
- possibility for mounting of additional contacts (for the open type)
- remarkable with high reliability of current characteristics

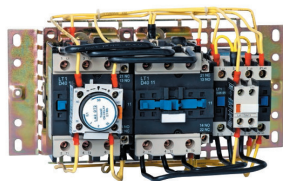
Technical data:

- Rated voltage of the controlling voltage: 400V AC; 50/60 Hz

Note: In case you need different controlling coils voltage of the starters you can turn to our regional representatives.

- Rated operating voltage: 690V
- Rated operating current range: from 7 to 93A AC
- insulation voltage: >690V
- Surge voltage wear resistance: ≥6000V
- Joining terminal: screw terminal
- Little power consumption and small dimensions
- Connecting:
 - flexible or rigid conductors with or without cable terminal for joining to the consumer and section according to the motor power
 - three by three inlets/outlets supplied with orifices for the cables
- Possibility for operation at higher frequency
- IP code: IP54
- Mounting:
 - mounting to a flat surface (wall) with bolts/screws
 - mounting position: vertical gradient – maximum ± 5°
- Plastic: wear resistance of UV rays and non-flammable (self-extinguishing material)
- The metal body is covered with corrosion-proof paint
- Ambient temperature: -10°C + 60°C
- Altitude: up to 2000m





Type designation (without a box)	Overall dimensions (mm)		
	height	width	depth
LT3-D25A	135	170	160
LT3-D32A	135	170	160
LT3-D40A	150	285	190
LT3-D65A	150	285	190
LT3-D95A	150	310	190

Type designation (without a box)	Rated capacity (kW)				Rated current (A)	Coil voltage (V AC)	Packing/Box (pcs)	Catalogue number
	220V 230V	380V 400V	415V	440V				
LT3-D25A	11	15	15	15	25	400	1 / 6	43253
LT3-D32A	15	18.5	18.5	18.5	32	400	1 / 6	43323
LT3-D40A	18.5	22	22	22	40	400	1 / 4	43403
LT3-D65A	30	55	55	55	65	400	1 / 4	43653
LT3-D95A	37	75	75	75	95	400	1 / 4	43953

Note: It is necessary that thermal protection with suitable range is mounted to protect the controlled motor.
The shown values of magnetic starters are for normal regimes for motor control, for hard operation regimes are chosen starters which correspond to the current rating of the motor.



Type designation (with box)	Overall dimensions (mm)		
	height	width	depth
LT 3 - B - D25A	370	240	160
LT 3 - B - D32A	370	240	160
LT 3 - B - D40A	470	265	160
LT 3 - B - D65A	470	265	160
LT 3 - B - D95A	470	265	160

Type designation (with box)	Rated capacity (kW)				Rated current (A)	Coil voltage (V AC)	Packing/Box (pcs)	Catalogue number
	220V 230V	380V 400V	415V	440V				
LT 3 - B - D25A	11	15	15	15	25	400	1 / 4	43254
LT 3 - B - D32A	15	18.5	18.5	18.5	32	400	1 / 4	43255
LT 3 - B - D40A	18.5	22	22	22	40	400	1 / 2	43256
LT 3 - B - D65A	30	55	55	55	65	400	1 / 4	43257
LT 3 - B - D95A	37	75	75	75	95	400	1 / 2	43258

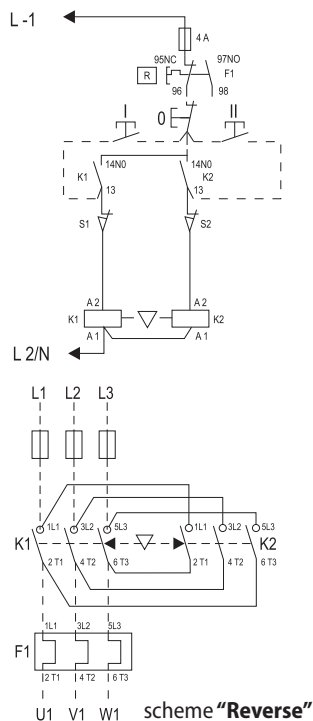
Note: It is necessary that thermal protection with suitable range is mounted to protect the controlled motor.
The shown values of magnetic starters are for normal regimes for motor control, for hard operation regimes are chosen starters which correspond to the current rating of the motor.

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Reverse starter

The electromagnetic starters LT4 Dxx series are devices used for direct start, reverse start and protection of induction motors with short connected rotor. They are a combination of two contactors LT1 Dxx series supplied with two buttons "start" and one "stop" factory cabled. They provide the unwinding of the motor in one of the directions with possibility for pushing the button "stop" and giving command from the other "start" for changing the motor winding direction. The two contactors are mechanically blocked and do not allow simultaneous start in both winding directions. The starters are offered – closed type in metal boxes providing the corresponding IP code from dust and moisture (IP54) as at mounting there should be provided protection of the device from short circuit through breakers or disconnectors. The starters are offered with mounted thermal protection which can be substituted according to the motor power. The choice of a suitable protection prevents motor's operation at unusual temperature conditions and guarantees maximum constant operation, increases the effectiveness and prolongs the term of exploitation. If necessary, at order the power supply operating voltage of the pneumatic starter can be changed.

Functions:

- switching on alternating current three phase motors in one winding direction, switching off and change of the winding direction at giving a signal
- does not allow secondary unwarranted switching on of the starter at transitory lowering of the voltage
- protects the motor from overload in the range of the corresponding thermal protection
- remarkable with high reliability of current characteristics

Technical data:

- Rated voltage of the controlling voltage: 400V AC; 50/60 Hz
- Note:** In case you need different controlling coils voltage of the starters you can turn to our regional representatives.
- Rated operating voltage: 690V
- Rated operating current range: from 7 to 93 A AC
- insulation voltage: 690V
- Surge voltage wear resistance: ≥6000V
- Joining terminal: screw terminal
- Little power consumption and small dimensions
- Connecting:
 - flexible or rigid conductors with or without cable terminal for joining to the consumer and section according to the motor power
 - three by three inlets/outlets supplied with orifices for the cables
- Possibility for operation at higher frequency
- IP code: IP 44
- Mounting:
 - mounting to a flat surface (wall) with bolts/ screws
 - mounting position: vertical gradient – maximum ± 5°
- Plastic: wear resistance of UV rays and non-flammable (self-extinguishing material)
- The metal body is covered with corrosion-proof paint
- Ambient temperature: -10°C + 60°C
- Altitude: up to 2000m

Type designation (with a box)	Rated capacity (kW)				Overall dimensions (mm)			Rated current (A)	Coil voltage (V AC)	Packing/Box (pcs)	Catalogue number
	220V 230V	380V 400V	415V	440V	height	width	depth				
LT 4 - B - D25A	11.0	15.0	15.0	15.0	240	240	160	25	400	1 / 8	43001
LT 4 - B - D32A	15.0	18.5	18.5	18.5	240	240	160	32	400	1 / 4	43002
LT 4 - B - D40A	18.5	22.0	22.0	22.0	270	265	160	40	400	1 / 2	43003
LT 4 - B - D65A	30.0	55.0	55.0	55.0	270	265	160	65	400	1 / 4	43004
LT 4 - B - D95A	37.0	75.0	75.0	75.0	270	265	160	95	400	1 / 4	43005
LT 4 - B - D25A	11.0	15.0	15.0	15.0	240	240	160	25	230	1 / 4	43006
LT 4 - B - D32A	15.0	18.5	18.5	18.5	240	240	160	32	230	1 / 4	43007
LT 4 - B - D40A	18.5	22.0	22.0	22.0	270	265	160	40	230	1 / 4	43008
LT 4 - B - D65A	30.0	55.0	55.0	55.0	270	265	160	65	230	1 / 4	43009
LT 4 - B - D95A	37.0	75.0	75.0	75.0	270	265	160	95	230	1 / 4	43010