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Enclosed switch-disconnectors

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Enclosed Motor Starter Solution GuideThe software to help you to select intuitively
your enclosed motor starter solution.The new Enclosed Motor Starter Solution Guide
software is available for both PC and iPad.

TeSys

TeSys Vario enclosed switch-disconnectors

Introduction & selection table

Enclosed starters



Range of pre-assembled casings with handle and their rotary switch

They can be fixed on a wall, a panel, or on the chassis of a machine. For simple isolation and/or control of an electrical circuit. Red/yellow handle provides a clear indication of the device safety function ⁽¹⁾, while black handle is usually dedicated to ON/OFF control.

⁽¹⁾ Conforming to IEC 60947-4-1 and IEC 60204.

With numerous advantages to meet OEM's most common needs

- IEC or UL
- Multiple ratings and sizes
- IP65
- Additional poles
- Replaceable switch bodies

Selection in 2 steps

- 1 Identify your need (1 line one or more) in the **Selection criteria** area (example.: Load 5 kW– Emergency Stop - IEC)

Selection criteria							
Ithe (A)	Load power (kW)	Circuit isolation	Emergency stop	IP55	IP65	IEC	UL & CSA
10...140	4...45 (400 V)	●			●	●	
10...140	4...45 (400 V)	●	●		●	●	
10...32	4...15 (400 V)	●	●	●		●	
32...175 (Ithe IEC) 20...115 (Ith UL)	10...50 HP (480 V)	●	●		●	●	●

- 2 Choose your enclosed switch-disconnector in the **Solutions** area, note the radical of the product references

Solutions			
VBF			
	VCF		
		VCFN	
			VC•GUN

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VCF0GE



VCF3GE



VCF5GEN



VCFN12GE



VBF0GE



VBF6GEN

Control + Disconnection (IEC)

Enclosed switch-disconnectors, ready to be fixed on workshop wall or directly on the machine and wired to main supply circuit and to load.

Functions / Range / Specificities:

- Direct Control: ON/OFF of 3-phase motor (black handle) or ON/Emergency Stop (red handle)
- 23 IEC motor starters, for 3P motors from 4 to 45 kW (10 to 140 A)
- 6 UL motor starters for 3P motors from 5 to 30 HP (240 V)
- Padlockable handle (1 to 3 padlocks – not included)
- Sealable, lockable cover when handle in position 1 (up to 63 A rating).

Included:

- rotary switch-disconnector body
- handle.

Enclosures for ON / Emergency Stop – IP65 – conforming IEC 60947-4-1 IEC 60204 ⁽¹⁾

Operator	lthe	Power	Incorpor-	Possible	With	Reference ⁽³⁾	Weight	Overall
Handle	Front plate Dim.	AC-23 at 400 V	ated switch body	attach-ments ⁽²⁾	ground plate			dimensions ⁽⁴⁾
	mm	A	kW				kg	mm
Red, standard, padlockable with up to 3 padlocks (Ø 4 to Ø 8 shank)	Yellow 60 x 60	10	4	V02	2	No	VCF02GE	90x146x131
						Yes	VCF02GEGP	90x146x131
		16	5.5	V01	2	No	VCF01GE	90x146x131
						Yes	VCF01GEGP	90x146x131
		20	7.5	V0	2	No	VCF0GE	90x146x131
						Yes	VCF0GEGP	90x146x131
		25	11	V1	2	No	VCF1GE	90x146x131
						Yes	VCF1GEGP	90x146x131
Red, long, padlockable with up to 3 padlocks (Ø 4 to Ø 8 shanks)	Yellow 90 x 90	32	15	V2	2	No	VCF2GE	90x146x131
		50	22	V3	3	No	VCF3GE	157x180x152
		63	30	V4	3	No	VCF4GE	157x180x152
		100	37	V5	1	No	VCF5GEN	241x291x190.5
		140	45	V6	1	No	VCF6GEN	241x291x190.5

Protection of sensitive equipment: ground plate available for VCF02GE...VCF1GE – see page A1/5.

Enclosures for ON / Emergency Stop – IP65 - conforming IEC 60947-4-1 ⁽¹⁾

Operator	lthe	Power	Incorpor-	Possible	Reference ⁽³⁾	Weight	Overall
Handle	Front plate Dim.	AC-23 at 400 V	ated switch body	attach-ments ⁽²⁾			dimensions ⁽⁴⁾
	mm	A	kW			kg	mm
Red padlockable, either by 1 (Ø 8 shank) or by 3 padlocks (Ø 6 shank)	Yellow 60 x 60	10	4	VN12	2	VCFN12GE	82.5x131x106
		16	5.5	VN20	2	VCFN20GE	82.5x131x106
		20	7.5	V0	0	VCFN25GE	82.5x131x106
		25	11	V1	0	VCFN32GE	82.5x131x106
		32	15	V2	0	VCFN40GE	82.5x131x106

Enclosures for ON/OFF F– IP65 – conforming IEC 60947-4-1 IEC 60204 ⁽¹⁾

Operator	lthe	Power	Incorpor-	Possible	Reference ⁽³⁾	Weight	Overall
Handle	Front plate Dim.	AC-23 at 400 V	ated switch body	attach-ments ⁽²⁾			dimensions ⁽⁴⁾
	mm	A	kW			kg	mm
Black, standard, padlockable with up to 3 padlocks (Ø 4 to Ø 8 shank)	Black 60 x 60	10	4	V02	2	VBF02GE	90x146x131
		16	5.5	V01	2	VBF01GE	90x146x131
		20	7.5	V0	2	VBF0GE	90x146x131
		25	11	V1	2	VBF1GE	90x146x131
		32	15	V2	2	VBF2GE	90x146x131
		50	22	V3	3	VBF3GE	90x146x131
Black, long, padlockable with up to 3 padlocks (Ø 4 to Ø 8 shank)	Black 90 x 90	63	30	V4	3	VBF4GE	90x146x131
		100	37	V5	1	VBF5GEN	241x291x190.5
		140	45	V6	1	VBF6GEN	241x291x190.5

⁽¹⁾ For characteristics of switch-disconnectors, please consult your Regional Sales Office.

⁽²⁾ Number of add-on modules that can be attached.

⁽³⁾ Enclosure not suitable in atmosphere contaminated with harsh substances (detergents, chlorine solvents, ketones, alcohol, aromatic hydrocarbons).

⁽⁴⁾ Dimensions of standard versions, comprising (if any) handle, pushbutton, indicator light.

Note: For VCF and VBF enclosures from 02GE to 2GE, only one auxiliary contact block VZ7 or VZ20 can be mounted.





VC1GUN



VC3GUN



VC5GUN

Control + Disconnection (UL)

ON / Emergency Stop – IP65

Conforming UL508 CSA22.2 n° 14, IEC 60947-4-1, IEC 60204 ⁽¹⁾

Operator		Rating		Standard power ratings of UL motors			Incorporated switch body	Possible attachments	Reference ⁽²⁾	Weight	Overall dimensions ⁽¹⁾ WxHxD
Handle	Front plate Dim.	IEC (lth)	UL	600 V							
	mm	A	A	HP	HP	HP				kg	mm
Red, standard, padlockable with up to 3 padlocks (Ø 4 to Ø 8)	Yellow 60 x 60	32	20	5	10	10	V1	2	VC1GUN	0.500	121x164x132.1
		40	25	5	10	15	V2	2	VC2GUN	0.500	121x164x132.1
		63	45	10	20	30	V3	2	VC3GUN	0.930	164x193x132.1
		80	63	15	30	40	V4	2	VC4GUN	0.930	164x193x132.1
Red, long, padlockable with up to 3 padlocks (Ø 4 to Ø 8)	Yellow 90 x 90	125	100	25	50	50	V5	1	VC5GUN	2.190	241x291x190.5
		175	115	30	50	60	V6	1	VC6GUN	2.190	241x291x190.5

Additional modules for Vario switch bodies

Enclosed switches include a Vario VZ switch body. Additional modules can be plugged on 1 or 2 sides of the switch body to provide additional contacts or extra connectivity.

Common modules for enclosed switch disconnectors – with exceptions ⁽³⁾

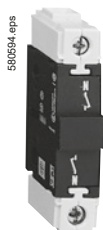
Description	Rating	Reference
	A	
Main pole module (mounted in enclosure)	10	VZ02 (not for VCxGUN starters)
	16	VZ01 (not for VCxGUN starters)
	20	VZ0 (not for VCxGUN starters)
	25	VZ1
	32	VZ2
	50	VZ3
	63	VZ4
Neutral pole modules with early make and late break contacts	10 to 32	VZ11
	50 and 63	VZ12
	100 and 140	VZ13
Earthing modules	10 to 32	VZ14
	50 and 63	VZ15
	100 and 140	VZ16
Description	Type of contacts	Reference
Auxiliary contact block modules with 2 auxiliary contacts	N/O + N/C ⁽⁴⁾	VZ7
	N/O + N/O	VZ20

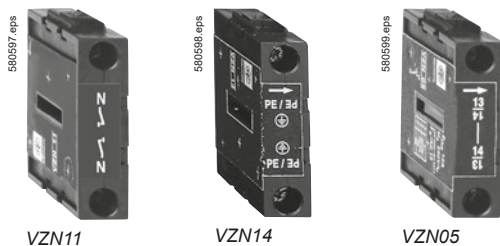
⁽¹⁾ For characteristics of switch-disconnectors, please consult your Regional Sales Office.

⁽²⁾ Enclosure not suitable in atmosphere contaminated with harsh substances (detergents, chlorine solvents, ketones, alcohol, aromatic hydrocarbons).

⁽³⁾ Not compatible with V●F5GEN, V●F6GEN, VC5GUN, VC6GUN, VCFN12GE, VCFN20GE.

⁽⁴⁾ Late make N/O, early break N/C contacts.

VZ0
Main poleVZ11
Neutral poleVZ15
Earthing terminalVZ20
Auxiliary contacts



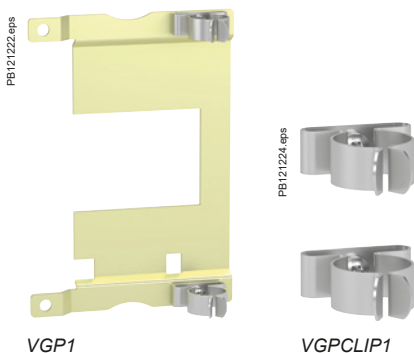
Additional modules for Vario switch bodies

Specific modules for VCFN12GE and VCFN20GE

Description	Rating	Reference
Main pole modules	A	
	10	VZN12
	16	VZN20
Neutral pole module with early make and late break contacts	10 and 16	VZN11
Earthing module	10 and 16	VZN14

Description	Type of contacts	Reference
Auxiliary contact block modules	1 N/O late make contact	VZN05
	1 N/C early break contact	VZN06

Enclosed starters



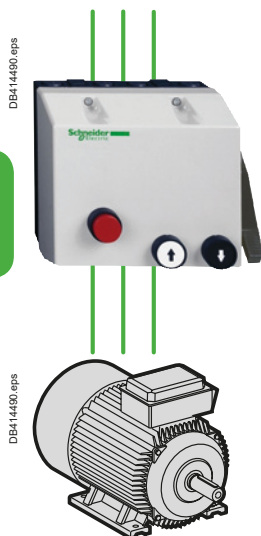
Accessories for Vario enclosed switch-disconnectors

Ground plate and accessories for VCF02GE, VCF01GE, VCF0GE, VCF1GE

Metallic ground plate, for shielded cables connection. To be installed between back of Vario enclosed switch-disconnectors, 2 fixing screws. Cable shield grounding ensured by 2 clamps, clamping from Ø11 to 14 mm

For switch body	Reference
Ground plate + 2 clamps + 2 screws	VGP1
2 clamps + 2 screws	VGPClip1





Range of pre-assembled motor starters, with pushbuttons, selectors, protection and control components in a robust casing

They can be fixed on a wall, on a panel, or on the chassis of a machine. They provide an operator with an easy access with visual simplicity

Numerous advantages to meet OEM's most common needs

- IEC
- Multiple ratings and sizes
- IP55, IP65
- IK08, IK09
- Totally or partially pre-wired

Standard starters

They are used to isolate a circuit, to protect and/or to control a motor

Customized protection

TeSys enclosed starter offer is available in fully pre-equipped and pre-wired enclosures, also in partially pre-equipped enclosures to be completed with protective components of the required rating

Accessories

Additional accessories provide reinforced sealing, padlock locking, additional contacts...

Selection in 2 steps

- 1 Identify your need (1 line one or more) in the **Selection criteria** area (example: Load 5 kW – ON/OFF control with overload protection)

- 2 Choose your starter in the **Solutions** area by adding column contents, note the radical of the product references (example: LE1D + LRD)

Selection criteria						
Load Power (kW) / 400V	Circuit isolation	Direct starter - ON/OFF	Reverser ON/REVERSE/OFF	Short circuit protection	Overload protection	Star - delta
0.25...7.5		●			●	
4 ... 30		●			●	
0.02... 30		●		●		
0.02... 30						
0.06... 11		●		●	●	
2.2 ... 15						
2.2 ... 30			●		●	
2.2 ... 15			●	●	●	
7.5...30		●			●	●
7.5...18.5		●	●	●	●	●

Solutions				
				Protection device to be added by customer (of appropriate rating)
LE1M35				
		LE1D		LRD
	GV2PC			GV2L
	GV3PC			GV2P
	GV2PC			
	GV3PC			
	GV2MC			GV2ME
	GV3MP			
			LE4K	LR2K
			LE4D	LRD
		LE2K		LR2K
		LE2D		LRD
			LE8K	LR2K
			LE8D	LRD
		LE3D		LRD
			LE6D	LRD

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LE1M35●●●●

Control + Protection against Overloads

- Direct Control: ON/OFF of 3-phase motor
- Motor protection: motor OFF in case of overload – manual reset with the red pushbutton.
- Indication: yellow light activated with the contactor coil.
- The LE1M35 starter, combined with short-circuit protection components, provides type 1 or type 2 coordination, depending on the type of devices used.

Range:

- 10 IEC motor starters, for 3P motors from 0.25 to 7.5 kW (400V AC)
- Configurable pushbuttons: impulse or latched
- Conforming to IEC 60947-4-1 standard
- Degree of protection IP65, according IEC 60529
- Ambient air temperature in operation -5 to +40°C
- Operating position: same as TeSys K series contactors
- Material: self extinguishing ABS.

Included (standard version):

- 1 TeSys contactor LC1 K●●⁽¹⁾
- 1 TeSys thermal overload relay LR2 K⁽²⁾
- 1 green Start button "I",
- 1 red Stop/Reset button "O/R",
- 1 yellow operating indicator
- earth + neutral terminals at bottom of enclosure.

For supply voltages between 380 and 440 V (codes Q7, V7, N7 or R7) the control circuit is pre-wired between phases. For other supply voltages, the control circuit must be wired by the customer.

Direct-on-line starters

Standard power ratings of 3-phase motors 50-60 Hz in category AC-3				Setting range of thermal overload relay LR2K	Basic reference, to be completed by adding the voltage code ⁽³⁾	Overall dimensions ⁽⁴⁾ WxHxD
220 V	240 V	380 V	415 V			
230 V		400 V				
kW	kW	kW	kW	A		mm
0.12	0.12	0.25	0.25	0.54...0.8	LE1M35●●05	78x160x108
0.18	0.18	0.37	0.37	0.8...1.2	LE1M35●●06	78x160x108
0.25	0.25	0.55	0.55	1.2...1.8	LE1M35●●07	78x160x108
0.37	0.37	1.1	0.75	1.8...2.6	LE1M35●●08	78x160x108
0.55	0.55	1.5	1.5	2.6...3.7	LE1M35●●10	78x160x108
1.1	0.75	2.2	2.2	3.7...5.5	LE1M35●●12	78x160x108
1.5	1.1	3	3	5.5...8	LE1M35●●14	78x160x108
2.2	2.2	4	4	8...11.5	LE1M35●●16	78x160x108
3	3	5.5	5.5	10...14	LE1M35●●21	78x160x108
3.7	4	7.5	7.5	12...16	LE1M35●●22	78x160x108
Replacement contactor					LC1K●●A80	-

Coil voltage codes

Volts ~ 50/60 Hz	24	110	220	230	240	380	400	415	440
Code	B7	F7	M7	P7	U7	Q7	V7	N7	R7

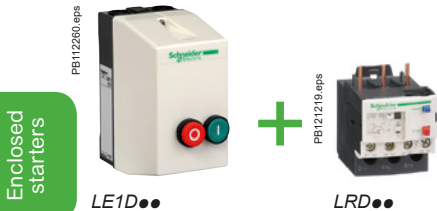
⁽¹⁾ TeSys K contactor characteristic: refer to chapter B8.

⁽²⁾ TeSys LR2K overload relay characteristics: refer to chapter B11.

⁽³⁾ Remove the 2 last numbers if the thermal overload relay is not required.
Example: LE1M35B7 instead of L1M35B714.

⁽⁴⁾ Dimensions of standard versions, comprising (if any) handle, pushbutton, indicator light.





Control + Protection against Overloads

- ON/OFF motor starters: 1-way rotation control of 3-phase motor, by green & red pushbuttons
- Motor protection against overload: manual reset with the red pushbutton or remotely.

Range:

- 8 direct-on-line starters for 3P motors from 4 to 30 kW (9 to 65 A AC-3)
- Choice of up to 12 AC coil voltages for control supply circuit (depending on starter rating).

Enclosures characteristics:

- Conforming to IEC 60947-4-1 standard
- Degree of protection according IEC 60529:
 - IP65,
 - IK07 for LE1D09...D35,
 - IK09 for LE1D40A...D65A
- Ambient air temperature in operation -5 to +40°C
- Operating position: same that as contactors
- Material: LE1D09... D35 polycarbonate ⁽²⁾
- LE1D40A... D65A steel sheet.

Included:

- 1 pre-wired LC1D contactor
- 2 Harmony XB5 pushbuttons.

An LRD overload relay of the required rating must be ordered separately and wired at bottom of the contactor.

Direct on-line starters

Standard power ratings of 3-phase motors 50-60 Hz in category AC-3						Max. current	Basic reference, Weight	Overall dimensions ⁽³⁾
220 V	380 V	415 V	440 V	500 V	660 V	I the up to	to be completed by adding the voltage code	WxHxD
230 V	400 V				690 V			
kW	kW	kW	kW	kW	kW	A	kg	mm
2.2	4	4	4	5.5	5.5	9	LE1D09●●	0.920 88x166x128.5
3	5.5	5.5	5.5	7.5	7.5	12	LE1D12●●	0.920 88x166x128.5
4	7.5	9	9	10	10	18	LE1D18●●	1.015 101x201x153.5
5.5	11	11	11	15	15	25	LE1D25●●	1.015 101x201x153.5
7.5	15	15	15	18.5	18.5	35	LE1D35●●	4.320 101x201x153.5
11	18.5	22	22	22	30	40	LE1D40A●●	4.820 200x300x158.5
15	22	25	30	30	33	50	LE1D50A●●	4.850 200x300x158.5
18.5	30	37	37	37	37	65	LE1D65A●●	4.850 200x300x158.5

Variants (pre-assembled)

Description	Available variants for starter	Suffix to be added to the starter reference ⁽⁴⁾
No pushbuttons on cover	LE1D09...D65A●●	A04
1 blue Reset button "R"	LE1D09...D65A●●	A05
1 3-position stay put selector switch ("I"- "O"- "II") ("I": Automatic Start; "O": Stop; "II": Manual Start) 1 blue Reset button "R"	LE1D09...D25●●	A09
1 2-position stay put selector switch "O"- "I" ("O": Stop; "I": Manual Start) 1 blue Reset button "R"	LE1D09...D25●●	A13
Mounting of an LC1D09 contactor in an enclosure identical to LE1D18	LE1D09P7 LE1D09P7A13	T

Coil voltage codes ⁽⁴⁾

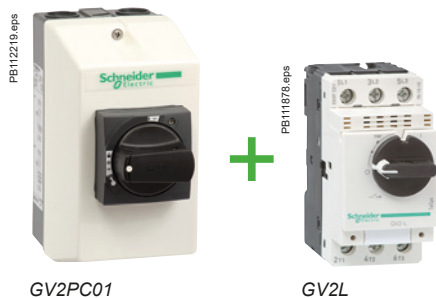
Volts	24	48	110	115	120	220	230	240	380	400	415	440
~ 50/60 Hz												
LE1D09 to D35	B7	E7	F7	FE7	G7	M7	P7	U7	Q7	V7	N7	R7
LE1D40A to D65A	-	-	-	FE7	-	-	P7	-	Q7	-	-	-

⁽¹⁾ TeSys LRD overload relay selection: product reference page A1/33, more details in chapter B11.

⁽²⁾ Avoid placing this material in contact with harsh substances (detergents, chlorine solvents ketones, alcohol, aromatic hydrocarbons).

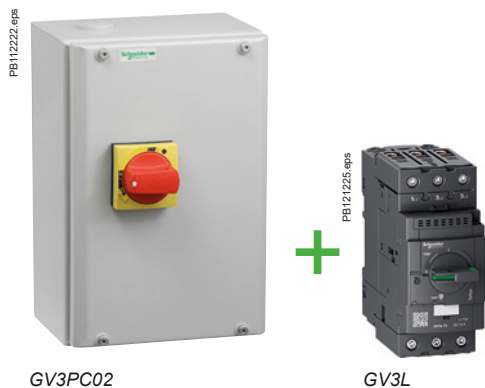
⁽³⁾ Dimensions of standard versions, comprising (if any) handle, pushbutton, indicator light.

⁽⁴⁾ Some combinations of variants / control voltage may not be available. Please consult us.



GV2PC01

GV2L



GV3PC02

GV3L

Control + Isolation + Protection against Short circuits

2 solutions according to the required current rating.

GV2PC + GV2L > up to 23 A (Ithe)

GV3PC + GV3L > up to 55 A (Ithe)

The GV2L or GV3L circuit breaker of the required rating must be ordered separately.

- Circuit isolation
- ON/OFF motor starters: 1-way rotation control of 3-phase motor
- Padlocking:
 - in ON or OFF position (PGV2PC01, GV3PC01),
 - in OFF position (GV2PC02, GV3PC02).

Suitable circuit breakers:

- GV2L - 12 ratings (3P motors from 0.09 to 11 kW - 400/415 V AC)
- GV3L - 3 ratings (3P motors from 18.5 to 30 kW - 400/415 V AC).

Enclosures characteristics:

- Conforming to IEC 60947-2
- Degree of protection according IEC 60529:
 - IP65, IK08 (for GV2PC),
 - IK09 (for GV3PC)
- Ambient air temperature in operation -5 to +40°C
- Operational voltage (Ue): 690V
- Material: GV2PC polycarbonate ⁽²⁾, GV3PC steel sheet.

Included:

- GV rotary handle.

Enclosures fitted with padlockable rotary handle

Composition	Type	Reference	Overall dimensions ⁽³⁾ WxHxD mm
■ Insulating enclosure ■ Black handle, padlockable in ON/OFF position	Surface mounting For GV2L	GV2PC01	88x166x163
■ Insulating enclosure ■ Red handle on yellow background, padlockable in OFF position	Surface mounting For GV2L	GV2PC02	88x166x163
■ Metal enclosure ■ Black handle, padlocking in ON/OFF position ■ Circuit breaker/handle adapter	Surface mounting For GV3L	GV3PC01	200x300x200
■ Metal enclosure ■ Red handle, padlocking in OFF position ■ Circuit breaker/handle adapter	Surface mounting For GV3L	GV3PC02	200x300x200

GV2L, GV3L product references: add code to product reference ⁽⁴⁾

Ithe (A)	0.4	0.63	1	1.6	2.5	4	6.3	9	13	17	21	23
GV2L codes	03	04	05	06	07	08	10	14	16	20	21	22
Ithe (A)	35	41	55									
GV3L codes	40	50	65									

⁽¹⁾ TeSys GV2, GV3 circuit breaker not included - characteristics: refer to chapter B6.

⁽²⁾ Avoid placing this material in contact with harsh substances (detergents, chlorine solvents, ketones, alcohol, aromatic hydrocarbons).

⁽³⁾ Dimensions of standard versions, comprising (if any) handle, pushbutton, indicator light.

⁽⁴⁾ Example: for Ithe 17 A, magnetic circuit breaker is GV2L20.



Enclosed starters



GV2PC01



GV2P



GV3PC02



GV3P



Control + Isolation + Protection against Short circuits and Overloads

For OEM, 2 solutions according to the required current rating.

GV2PC + GV2P > up to 23 A (Ithe)

GV3PC + GV3P > up to 55 A (Ithe)

The enclosure includes a rotary handle. The GV2P or GV3P circuit breaker of the required rating must be ordered separately.

- Circuit isolation
- ON/OFF motor starters: 1-way rotation control of 3-phase motor
- Padlocking:
 - in ON or OFF position (GV2PC01, GV3PC01),
 - in OFF position (GV2PC02, GV3PC02).

Suitable circuit breakers:

- GV2P - 14 ratings (3P motors from 0.06 to 11 kW - 400/415 V AC)
- GV3P - 2 ratings (3P motors from 18.5 to 30 kW - 400/415 V AC).

Enclosures characteristics:

- Conforming to IEC 60947-2
- Degree of protection according IEC 60529: IP65, IK08 (for GV2PC), IK09 (for GV3PC)
- Ambient air temperature in operation -5 to +40°C
- Operational voltage (Ue) 690V
- Material: GV2PC polycarbonate ⁽²⁾, GV3PC steel sheet.

Included:

- GV rotary handle.

Enclosures fitted with padlockable rotary handle

Composition	Type	Reference	Overall dimensions ⁽³⁾ WxHxD mm
■ Insulating enclosure ■ Black handle, padlockable in ON/OFF position	Surface mounting For GV2L	GV2PC01	88x166x163
■ Insulating enclosure ■ Red handle on yellow background, padlockable in OFF position	Surface mounting For GV2L	GV2PC02	88x166x163
■ Metal enclosure ■ Black handle, padlocking in ON/OFF position ■ Circuit breaker/handle adapter	Surface mounting For GV3L	GV3PC01	200x300x200
■ Metal enclosure ■ Red handle, padlocking in OFF position ■ Circuit breaker/handle adapter	Surface mounting For GV3L	GV3PC02	200x300x200

GV2P, GV3P product references: add code to product reference ⁽⁴⁾

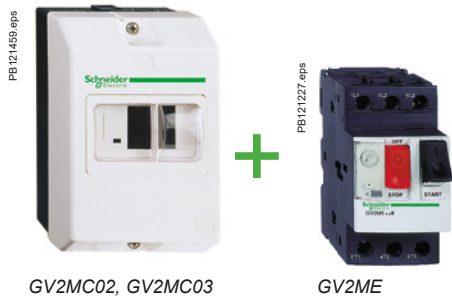
Ithe (A)	0.16	0.25	0.4	0.63	1	1.6	2.5	4	6.3	9	13	17	21	23
GV2P codes	01	02	03	04	05	06	07	08	10	14	16	20	21	22
Ithe (A)	35	41	55											
GV3P codes	40	50	65											

⁽¹⁾ TeSys GV2, GV3 circuit breaker not included - characteristics: refer to chapter B6.

⁽²⁾ Avoid placing this material in contact with harsh substances (detergents, chlorine solvents, ketones, alcohol, aromatic hydrocarbons).

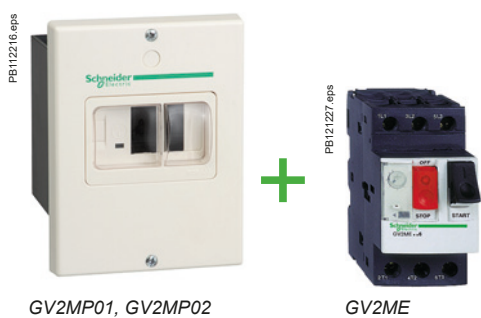
⁽³⁾ Dimensions of standard versions, comprising (if any) handle, pushbutton, indicator light.

⁽⁴⁾ Example: for Ithe 17 A, magnetic circuit breaker is GV2P20.



GV2MC02, GV2MC03

GV2ME



GV2MP01, GV2MP02

GV2ME

Control + Isolation + Protection against Short circuits and Overloads

For OEM, 2 solutions, according to the enclosure installation mode:

GV2MC surface mounting enclosure for GV2ME circuit breaker

GV2MP flush mounting enclosure for GV2ME circuit breaker.

The GV2ME circuit breaker of the required rating must be ordered separately.

- Circuit isolation
- ON/OFF motor starters: 1-way rotation control of 3-phase motor
- Short-circuit and adjustable overload protection
- Padlocking in OFF position.

Suitable circuit breakers:

- GV2ME - 14 ratings (3P motors from 0.06 to 11 kW - 400/415 V AC).

Enclosures characteristics:

- Conforming to IEC 60947-2; IEC 60947-4-1
- Degree of protection according IEC 60529: refer to selection chart
- Operational voltage (Ue) 690 V
- Material: polycarbonate ⁽²⁾.

Included:

- GV2E01 or GV2E02 sealing kit (fixed on the front plate).

Enclosures for thermal-magnetic circuit breakers GV2 ME

Type	Degree of protection	Possible no. of side mounting auxiliary contact blocks on GV2ME		Reference	Weight kg	Overall dimensions ⁽³⁾ WxHxD mm
		LH side	RH side			
Surface mounting, double insulated with protective conductor. Sealable cover	IP41	1	1	GV2MC01	0.290	93x147x84
	IP55	1	1	GV2MC02 or GV2MCK04 ⁽⁴⁾	0.300 0.420	93x147x84 93x147x145.5
	IP55 for temperature < +5 °C	1	1	GV2MC03	0.300	93x147x84
Flush mounting, with protective conductor	IP41 (front face)	1	1	GV2MP01	0.115	106.5x140x83
	IP41 (front face – reduced flush mounting)		1	GV2MP03	0.115	106.5x140x98
	IP55 (front face)	1	1	GV2MP02	0.130	106.5x140x83
	IP55 (front face – reduced flush mounting)		1	GV2MP04	0.130	106.5x140x98

GV2ME product references: add code to product reference ⁽⁵⁾

lthe (A)	0.16	0.25	0.4	0.63	1	1.6	2.5	4	6.3	9	13	17	21	23
GV2ME codes	01	02	03	04	05	06	07	08	10	14	16	20	21	22

GV2MC, GV2MP enclosures with complementary circuit breaker and mushroom head pushbutton allow the construction of safety direct-on-line starters conforming INRS and VDE0113.

Surface and flush mounting enclosures, mushroom heads, circuit breakers and undervoltage release cover a large number of applications.

⁽¹⁾ Characteristics of TeSys **GV2ME** circuit breakers and additives: refer to page A1/32.

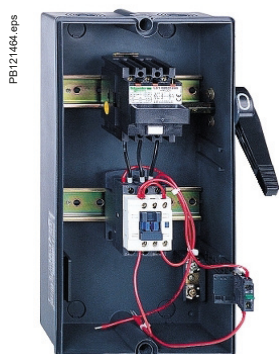
⁽²⁾ Enclosure not suitable in atmosphere contaminated with harsh substances (detergents, chlorine solvents, ketones, alcohol, aromatic hydrocarbons).

⁽³⁾ Dimensions of standard versions, comprising (if any) handle, pushbutton, indicator light

⁽⁴⁾ Enclosure **GV2MCK04** is fitted with a **GV2K04** mushroom head Emergency stop pushbutton as standard.

⁽⁵⁾ Example: for lthe 17 A, magnetic circuit breaker is **GV2ME20**.





Control + Isolation + Protection against Short circuits and Overloads

- ON/OFF motor starters: 1-way rotation control of 3-phase motor, by green & red pushbuttons
- Option: no pushbutton on cover
- Circuit disconnection by side black handle
- Protection against short circuits by NFC fuses type aM (to be ordered separately)
- Motor protection against overload – manual reset with the red pushbutton or remotely. Option: cover with just a “Reset” blue pushbutton.
- An LR2K or LRD overload relay of the required rating must be ordered separately and wired at bottom of the contactor ⁽¹⁾.

Ranges:

- 8 partially pre-equipped enclosures to build-up 3P motor starters from 2.2 to 15 kW (6 to 35 AAC-3)
- Choice of 5 coils for LE4K●●, 12 coils for LE4D●●, for control with different AC voltages.

Enclosures characteristics:

- Conforming to IEC 60947-4-1 standard
- Degree of protection according IEC 60529:
 - IP65, IK09 for LE4KIP65,
 - IK07 for LE4D,
- Ambient air temperature in operation -5 to +40°C
- Operating position: same that as contactors
- Material: LE4K and LE4D polycarbonate ⁽²⁾.

Included:

- 1 fuse carrier with external side handle
- 1 pre-wired LC1K or LC1D contactor
- 2 Harmony XB5 pushbuttons.

Direct-on-line starters

Standard power ratings of 3-phase motors 50-60 Hz in category AC-3							Max. current I _n the up to	Fuses to be fitted by the customer	Basic reference, to be completed by adding the voltage code ^{(3) (4)}		Weight	Overall dimensions ⁽⁵⁾ WxHxD
220 V	380 V	415 V	440 V	500 V	660 V	690 V	A	Size	Type aM	code ^{(3) (4)}	kg	mm
1.5	2.2	2.2	3	–	–	–	6	10 x 38	10	LE4K065●●	1.450	206x165x146
2.2	4	4	4	–	–	–	9	10 x 38	12	LE4K095●●	1.450	206x165x146
										or LE4D09●● ⁽⁶⁾	1.960	217x348x175.5
2.2	4	4	4	5.5	–	–	9	10 x 38	12	LE4D09●●	1.960	217x348x175.5
3	5.5	5.5	5.5	7.5	–	–	12	10 x 38	16	LE4D12●●	1.960	217x348x175.5
4	7.5	9	9	10	–	–	18	10 x 38	20	LE4D18●●	2.200	217x348x175.5
5.5	11	11	11	15	–	–	25	10 x 38	25	LE4D25●●	2.200	217x348x175.5
7.5	15	15	15	18.5	18.5	–	35	14 x 51	32	LE4D35●●	5.190	217x348x175.5

Voltages code ⁽⁴⁾

Volts	24	48	110	115	120	220	230	240	380	400	415	440
~ 50/60 Hz												
LE4D	B7	E7	F7	FE7	G7	M7	P7	U7	Q7	V7	N7	R7
LE4K	–	–	–	–	–	M7	P7	U7	Q7	V7	–	–

Supply voltages between 380 and 440 V (codes Q7, V7, N7 or R7): pre-wired control circuit between phases.

Other supply voltages: control circuit must be wired by the customer.

⁽¹⁾ TeSys LR2K, LRD overload relay selection: product references page A1/33, more details in chapter B11.

⁽²⁾ Avoid placing this material in contact with harsh substances (detergents, chlorine solvents, ketones, alcohol, aromatic hydrocarbons).

⁽³⁾ LE4D●●● (with P7 and V7 coil) with no pushbutton on cover: add “A04” to product reference (example: LE4D25V7A04).

LE4D●●● (with P7 and V7 coil) with overload “Reset” blue pushbutton only on cover: > add “A05” to full product reference.

⁽⁴⁾ Some combinations of variants / control voltage may not be available. Please consult us.

⁽⁵⁾ Dimensions of standard versions, comprising (if any) handle, pushbutton, indicator light.

⁽⁶⁾ Selection according to dimensions and the number of operating cycles, please consult your Regional Sales Office.



LE2K09●●●



LR2K●●



LE2D12●●●



LRD●●

Reverse Control + Isolation + Protection against Overloads

- ON/REVERSE/OFF motor starters: 2-way rotation control of 3-phase motor
 - by black I-II position spring return selector, red STOP/RESET pushbuttons for LE2K●● starters
 - by black ON ↑, ON ↓ pushbuttons, red STOP/RESET pushbutton for LE2D●● starters
 - Motor protection against overload: manual reset with the red pushbutton or remotely.
- An LR2K or LRD overload relay of the required rating must be ordered separately and wired at bottom of the contactor.

Ranges:

- for 3P motors from 4 to 30 kW (9 to 65 A AC-3), in 11 ranges of reverser starters
- Choice of up to 7 AC coils voltages (depending on starter) for control supply circuit.

Enclosures characteristics:

- Conforming to IEC 60947-4-1 standard
- Degree of protection according IEC 60529: IP65, IK07 for LE2D09●●●D35, IK09 for LE2K and LE●D40A●●●D65A,
- Ambient air temperature in operation -5 to +40°C
- Operating position: same that as contactors
- Material: LE2K and LE●D09●●●D35 polycarbonate ⁽²⁾
- LE●D40A●●● D65A steel sheet.

Included:

- 2 pre-wired LC1K or LC1D contactor
- 3 Harmony XB5 pushbuttons - or -1 Harmony XB5 pushbutton + 1 Harmony XB5 switch.

Reversing starters

Standard power ratings of 3-phase motors 50-60 Hz in category AC-3							Maximum current I the up to	Basic reference, to be completed by adding the voltage code ⁽³⁾	Weight	Overall dimensions ⁽⁴⁾ WxHxD
220 V	380 V	415 V	440 V	500 V	660 V	690 V				
230 V	400 V						A		kg	
1.5	2.2	2.2	3	—	—	—	6	LE2K065●●	1.080	175x165x146
2.2	4	4	4	—	—	—	9	LE2K095●●	1.080	175x165x146
—	—	—	—	5.5	5.5	—	9	LE2D09●● ⁽⁵⁾	2.100	101x201x153.5
—	—	—	—	5.5	5.5	—	9	LE2D09●●	2.100	101x201x153.5
3	5.5	5.5	5.5	7.5	7.5	—	12	LE2D12●●	2.100	101x201x153.5
4	7.5	9	9	10	10	—	18	LE2D18●●	2.410	101x201x153.5
5.5	11	11	11	15	15	—	25	LE2D25●●	2.570	101x201x153.5
7.5	15	15	15	18.5	18.5	—	35	LE2D35●●	4.100	101x201x153.5
11	18.5	22	22	22	30	—	40	LE2D40A●●	5.270	200x300x174
15	22	25	30	30	33	—	50	LE2D50A●●	5.470	200x300x174
18.5	30	37	37	37	37	—	65	LE2D65A●●	5.470	200x300x174

Coil voltage codes ⁽³⁾

Volts ~ 50/60 Hz	24	48	110	115	120	220	230	240	380	400	415	440
LE2D40A to D65A	—	—	—	FE7	—	—	P7	—	Q7	—	—	—
LE2D09 to D35	B7	—	—	—	—	M7	P7	U7	Q7	V7	N7	—
LE2K	—	—	—	—	—	M7	P7	U7	Q7	V7	—	—

⁽¹⁾ TeSys LR2K, LRD overload relay selection: product references page A1/33, more details in chapter B11.

⁽²⁾ Avoid placing this material in contact with harsh substances (detergents, chlorine solvents, ketones, alcohol, aromatic hydrocarbons).

⁽³⁾ Some combinations of variants / control voltage may not be available. Please consult us.

⁽⁴⁾ Dimensions of standard versions, comprising (if any) handle, pushbutton, indicator light.

⁽⁵⁾ Selection according to dimensions and the number of operating cycles, please consult your Regional Sales Office.





LE8K●●●●



LR2K●●



LE8D●●●●



LRD●●



LE8D●●●●

Reverse Control + Isolation + Protection against Short circuits and Overloads

- ON/REVERSE/OFF motor starters: 2-way rotation control of 3-phase motor
 - LE8K●●starters, by white ↑, black ↓, red Stop/Reset pushbuttons
 - LE8D●● starters, by black I-II position spring return selector, red Stop/Reset pushbutton
 - Option: no pushbutton on cover
 - Circuit disconnection by side black handle
 - Protection against short circuits by NFC fuses type aM (to be ordered separately)
 - Motor protection against overload: manual reset with the red pushbutton or remotely. LE8D option: cover with just a "Reset" blue pushbutton.
- An LR2K or LRD overload relay of the required rating must be ordered separately and wired at bottom of a the contactor.

Ranges:

- 8 partially pre-equipped enclosures to build-up 3P motor reversers from 2.2 to 15 kW (6 to 35 A AC-3)
- Choice of 3 coils for control with different AC voltages.

Enclosures characteristics:

- Conforming to IEC 60947-4-1 standard
- Degree of protection according IEC 60529: IP65, IK09 for LE8KIP65, IK07 for LE8D
- Ambient air temperature in operation -5 to +40°C
- Operating position: same that as contactors
- Material: LE8K and LE8D09●●●D35 polycarbonate ⁽²⁾.

Included:

- 1 fuse carrier with external side handle
- 2 pre-wired LC1K or LC1D contactors
- 3 Harmony XB5 pushbuttons - or -1 Harmony XB5 pushbutton + 1 Harmony XB5 switch.

Reversing starters

Standard power ratings of 3-phase motors 50-60 Hz in category AC-3							Maximum current I _b the up to	Fuses to be fitted by the customer		Basic reference, to be completed by adding the voltage code ^{(3) (4)}	Weight	Overall dimensions ⁽⁵⁾ WxHxD
220 V	380 V	415 V	440 V	500 V	660 V	690 V		Size	Type aM			
kW	kW	kW	kW	kW	kW	kW	A		A		kg	
1.5	2.2	2.2	3	—	—	—	6	10 x 38	10	LE8K065●●	1.600	206x165x146
2.2	4	4	4	—	—	—	9	10 x 38	12	LE8K095●●	1.600	206x165x146
—	—	—	—	5.5	—	—	9	10 x 38	12	or LE8D09●● ⁽⁶⁾	3.550	217x348x182
—	—	—	—	5.5	—	—	9	10 x 38	12	LE8D09●●	3.550	217x348x182
3	5.5	5.5	5.5	7.5	—	—	12	10 x 38	16	LE8D12●●	3.550	217x348x182
4	7.5	9	9	10	—	—	18	10 x 38	20	LE8D18●●	3.700	217x348x182
5.5	11	11	11	15	—	—	25	10 x 38	25	LE8D25●●	4.670	217x348x182
7.5	15	15	15	18.5	18.5	—	35	14 x 51	32	LE8D35●●	5.800	217x348x182

Voltage codes ⁽⁴⁾

Volts	24	48	110	115	120	220	230	240	380	400	415	440
~ 50/60 Hz												
LE8 K, LE8 D	—	—	—	—	—	—	P7	—	Q7	V7	—	—

⁽¹⁾ TeSys LR2K, LRD overload relay selection: product references page A1/33, more details in chapter B11.

⁽²⁾ Avoid placing this material in contact with harsh substances (detergents, chlorine solvents, ketones, alcohol, aromatic hydrocarbons).

⁽³⁾ LE8K●●●●, LE8D●●●● (with P7 and V7 coil) with no pushbutton on cover: add "A04" to product reference (example: LE8K095P7A04, LE8D25V7A04) LE4D●●●● (with P7 and V7 coil) with only one pushbutton on cover: overload "Reset" blue pushbutton > add "A05" to full product reference.

⁽⁴⁾ Some combinations of variants / control voltage may not be available. Please consult us.

⁽⁵⁾ Dimensions of standard versions, comprising (if any) handle, pushbutton, indicator light.

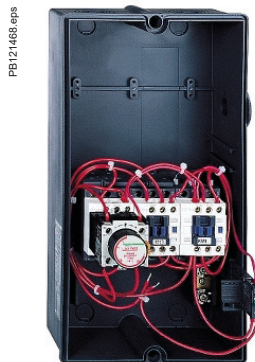
⁽⁶⁾ Selection according to dimensions and the number of operating cycles, please consult your Regional Sales Office.



LE3D



LRD●●



LE3D

Star-delta Control + Protection against Overload

- Star-delta starting of 3-phase motor: ON by green pushbutton, OFF by red pushbutton. Option: no pushbutton on cover
- Maximum operating rate: 30 starts/hour.
- Maximum starting time: 30 seconds.
- Delay of 40 ms ±15 ms at changeover by LAD S2 timer on delta contactor to provide sufficient time for star contactor to break.
- Motor protection against overload: manual reset with the red pushbutton or remotely.

An LRD overload relay of the required rating must be ordered separately and wired at bottom of the contactor.

Range:

- 4 partially pre-equipped enclosures to build-up 3P motor starters from 7.5 to 30 kW.
- Choice of 7 coils for control with different AC voltages.

Enclosures characteristics:

- Conforming to IEC 60947-4-1 standard
- Degree of protection according IEC 60529: IP65, IK07
- Ambient air temperature in operation -5 to +40°C
- Operating position: same that as contactors
- Material: polycarbonate ⁽²⁾.

Included:

- 3 pre-wired LC1D contactors
- 2 Harmony XB5 pushbuttons.

Star-delta starters

Standard power ratings of squirrel cage motors Mains voltage - delta connection				Basic reference, to be completed by adding the voltage code ⁽³⁾ ⁽⁴⁾	Weight	Overall dimensions ⁽⁵⁾ WxHxD
220 V	380/400 V	415 V	440 V			
V	V	V	V		kg	
kW	kW	kW	kW			
4	7.5	7.5	7.5	LE3D09●●	3.650	186x348x175.5
5.5	11	11	11	LE3D12●●	3.650	186x348x175.5
11	18.5	22	22	LE3D18●●	3.750	186x348x175.5
15	30	30	30	LE3D35●●	5.160	186x348x175.5

Voltage codes ⁽⁴⁾

Volts ~ 50/60 Hz	24	220	230	240	380	400	415
LE3 D	B7	M7	P7	U7	Q7	V7	N7

⁽¹⁾ TeSys LRD overload relay selection: product references page A1/33, more details in chapter B11 - Select appropriate overload relay for setting at 0.58 of the full load rated motor current.

⁽²⁾ Avoid placing this material in contact with harsh substances (detergents, chlorine solvents, ketones, alcohol, aromatic hydrocarbons).

⁽³⁾ LE3D●●●● (with P7 and V7 coil) with no pushbutton on cover: add "A04" to product reference (example: LE3D18P7A04).

⁽⁴⁾ Some combinations of variants / control voltage may not be available. Please consult us.

⁽⁵⁾ Dimensions of standard versions, comprising (if any) handle, pushbutton, indicator light.





LE6D●●●●



LRD●●

Star-delta Control + Disconnection + Protection against Short circuits and Overloads

- Star-delta starting of 3-phase motor: ON by green pushbutton, OFF by red pushbutton. Options: no pushbutton, "Reset" pushbutton only
- Maximum operating rate: 30 starts/hour.
- Maximum starting time: 30 seconds.
- Delay of 40 ms ±15 ms at changeover by LAD S2 timer on delta contactor to provide sufficient time for star contactor to break.
- Circuit disconnection by side black handle
- Protection against short circuits by NFC fuses type aM (to be ordered separately)
- Motor protection against overload: manual reset with the red pushbutton or remotely.

An LRD overload relay of the required rating must be ordered separately and wired at bottom of the contactor.

Range:

- 4 partially pre-equipped enclosures to build-up 3P motor starters from 7.5 to 30 kW choice of 7 coils for control with different AC voltages.

Enclosures characteristics:

- Conforming to IEC 60947-4-1 standard
- Degree of protection according IEC 60529: IP65, IK07
- Ambient air temperature in operation -5 to +40°C
- Operating position: same that as contactors
- Material: polycarbonate ⁽²⁾.

Included:

- 1 fuse carrier with external side handle
- 3 pre-wired LC1D contactors
- 2 Harmony XB5 pushbuttons.

Star-delta starters

Standard power ratings of squirrel cage motors				Fuses to be fitted by the customer		Basic reference, to be completed by adding the voltage code ⁽³⁾	Weight	Overall dimensions ⁽⁴⁾ WxHxD
Mains voltage - delta connection				Size	Type aM			
220 V	380/400 V	415 V	440 V					
kW	kW	kW	kW				kg	
4	7.5	7.5	7.5	10 x 38	20	LE6D09●●	3.900	217x348x175.5
5.5	11	11	11	10 x 38	25	LE6D12●●	3.900	217x348x175.5
11	18.5	22	22	14 x 51	40	LE6D18●●	4.850	217x348x175.5

Voltage codes			
Volts ~ 50/60 Hz	24	230	400
LE6 D	B7	P7	V7

⁽¹⁾ TeSys LRD overload relay selection: product references page A1/33, more details in chapter B11 - Select appropriate overload relay for setting at 0.58 of the full load rated motor current.

⁽²⁾ Avoid placing this material in contact with harsh substances (detergents, chlorine solvents, ketones, alcohol, aromatic hydrocarbons).

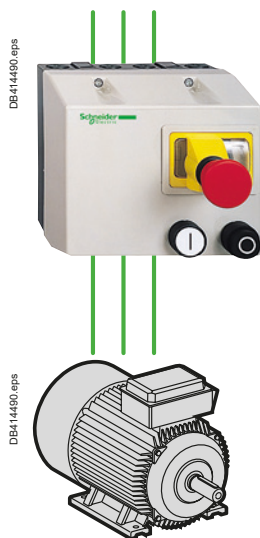
⁽³⁾ Some combinations of variants / control voltage may not be available. Please consult us.

⁽⁴⁾ Dimensions of standard versions, comprising (if any) handle, pushbutton, indicator light.

TeSys

TeSys enclosed safety starters

Introduction & selection table



Range of pre-assembled safety motor starters, with mushroom pushbuttons, protection and control components in a robust casing

They can be fixed on a wall, on a panel, or on the chassis of a machine. They provide the operator with safety machine controls complying with IEC 60204-1.

With numerous advantages to meet OEM's most common needs

- IEC
- Multiple ratings and sizes
- IP55
- IK07
- Pre-wired

Safety starters

They provide similar functions as standard starters but also include emergency stops to comply with IEC 60204-1 machine safety standards.

Enclosed starters

Selection in 2 steps

- 1 Identify your need (on a single line) in the **Selection criteria** area (example: Load 5 kW – Visible circuit isolation, ON/OFF control with short circuit / overload protection)

- 2 Choose your **Solutions** by adding column contents, note the radical of the product references (example: LG1D)

Selection criteria						
Load Power (kW) / 400 V supply	Direct starter ON/OFF	Reverser ON/REVERSE/OFF	Short circuit / overload protection	Power circuit isolation	Visible isolation by rotary switch	Isolated control circuit by transfo
0.06...4	●		●	●		
4 ... 9						
0.06... 4	●		●	●	●	
4... 9						
0.06... 4	●		●	●		●
0.06... 5.5		●	●	●		
0.06 ... 4		●	●	●		●
0.06 ... 15	●		●	●		

Solutions						
LG7K						
LG7D						
	LG1K					
	LG1D					
		LJ7K				
			LG8K			
				LJ8K		
					GV2MCK04 GV2ME GV2AX	

See page

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LG7K06



LG7K09, LG7D●●



For Control + Isolation + Short circuit / Overload Protection

Enclosed safety motor starters complying with IEC 60204-1 "Safety of machinery" standards.

- ON/OFF motor starters: 1-way rotation control of 3-phase motor
- Emergency stop
- Electrical circuit isolation, lockable (from LG7K09) with up to 3 padlocks
- Short circuit protection
- Overload protection
- Undervoltage protection (LG7K06: with additional undervoltage release module). Switching back on power supply after tripping must be a deliberate action.

Range:

- 12 pre-equipped enclosed safety starters from 0.06 to 9 kW.

Enclosures characteristics:

- Conforming to IEC 60947-1, IEC 60204-1
- Degree of protection according IEC 60529: IP55, IK07
- Ambient air temperature in operation -5 to +40°C
- Operational voltage (Ue) 690 V
- Operating position: same that as contactors
- Material: polycarbonate ⁽¹⁾.

Included:

- 1 GV2ME thermal magnetic circuit breaker (with mushroom emergency stop with LG7K06) ⁽²⁾
- 1 LC1K or LC1D pre-wired contactor
- 1 Harmony emergency stop pushbutton (from LG7K09)
- 2 Harmony XB5 pushbuttons.
- 1 GVAX undervoltage release module (from LG7K09).

Additional GVAX●● undervoltage release module for LG7K06 – to be ordered separately.

Additional GV2SN●● Indicator light – to be ordered separately.

Non-reversing starters (with pushbutton control of isolation)

Standard power ratings of 3-phase motors 50-60 Hz in category AC-3			Circuit breaker Setting range of thermal trips	Dust & damp protected starter Basic reference, to be completed by adding the voltage code ⁽³⁾	Weight	Overall dimensions ⁽⁴⁾ WxHxD
220/ 230 V	400/ 415 V	440 V			kg	
kW	kW	kW	A			
–	0.06	0.06	0.16...0.25	LG7K06●●02	1.300	175x165x177
0.06	0.09	0.12	0.25...0.40	LG7K06●●03	1.300	175x165x177
–	0.18	0.18	0.40...0.63	LG7K06●●04	1.300	175x165x177
0.12	0.25	0.37	0.63...1	LG7K06●●05	1.300	175x165x177
0.25	0.55	0.55	1...1.6	LG7K06●●06	1.300	175x165x177
0.37	0.75	1.1	1.6...2.5	LG7K06●●07	1.300	175x165x177
0.75	1.5	1.5	2.5...4	LG7K06●●08	1.300	175x165x177
1.1	2.2	3	4...6.3	LG7K06●●10	1.300	175x165x177
1.5	4	4	6...10	LG7K09●●14	1.450	175x165x177
3	5.5	5.5	9...14	LG7D12●●16	1.600	175x165x177
4	7.5	9	13...18	LG7D18●●20	1.630	175x165x177
4	9	9	17...23	LG7D18●●21	1.630	175x165x177

Voltage codes ⁽³⁾

Volts ~ 50/60 Hz	24	220/ 230	230	380/ 400	400	400/415 for LG7K)
LG7K, LG7D	B7	M7	P7	Q7	V7	N7

⁽¹⁾ Avoid placing this material in contact with harsh substances (detergents, chlorine solvents, ketones, alcohol, aromatic hydrocarbons).

⁽²⁾ LG7K09, D12, D18: the Emergency Stop function is performed by an undervoltage trip module acting on the circuit breaker. This circuit breaker is always pre-wired for use on 380/400/415 V 50 Hz supply.

For a 60 Hz supply, please consult your Regional Sales Office.

⁽³⁾ Some combinations of variants / control voltage may not be available. Please consult us.

⁽⁴⁾ Dimensions of standard versions, comprising (if any) handle, pushbutton, indicator light.



LG1K065

For Control + Visible Isolation + Short circuit / Overload Protection

Enclosed safety motor starters complying with IEC 60204-1 "Safety of machinery" standards.

- ON/OFF motor starters: 1-way rotation control of 3-phase motor
 - Emergency stop
 - Electrical circuit isolation, lockable with up to 3 padlocks
 - Short circuit protection
 - Overload protection
 - Undervoltage protection (with additional undervoltage release module).
- Switching back on power supply after tripping must be a deliberate action.

Range:

- 12 pre-equipped enclosed safety starters from 0.06 to 9 kW.

Enclosures characteristics:

- Conforming to IEC 60947-1, IEC 60204-1
- Degree of protection according IEC 60529 : IP55, IK07
- Ambient air temperature in operation -5 to + 40°C
- Operational voltage (U_e) 690 V
- Operating position: same that as contactors
- Material: polycarbonate ⁽¹⁾
- Enclosure cannot be opened when energized in position "I".

Included:

- 1 GV2ME thermal magnetic circuit breaker
- 1 LC1K (LG1K starters) or LC1D (LG1D starters) pre-wired contactor
- Switch with rotary red/yellow handle for isolation and emergency
- 2 Harmony XB5 pushbuttons.

Additional GVAX●● undervoltage release module – to be ordered separately.

Additional GV2SN●● indicator light – to be ordered separately.

Non-reversing starters (with rotary operator for control of isolation)

Enclosure cannot be opened when energised in position "I".

Standard power ratings of 3-phase motors 50-60 Hz in category AC-3			Circuit breaker Setting range of thermal trips	Dust & damp protected starter Basic reference, to be completed by adding the voltage code ⁽²⁾	Weight	Overall dimensions ⁽³⁾ WxHxD
220/ 230 V	400/ 415 V	440 V			kg	
kW	kW	kW	A			
–	0.06	0.06	0.16...0.25	LG1K065●●02	0.970	175x165x165
0.06	0.09	0.12	0.25...0.40	LG1K065●●03	0.970	175x165x165
–	0.18	0.18	0.40...0.63	LG1K065●●04	0.970	175x165x165
0.12	0.25	0.25	0.63...1	LG1K065●●05	0.970	175x165x165
0.25	0.55	0.55	1...1.6	LG1K065●●06	0.970	175x165x165
0.37	0.75	1.1	1.6...2.5	LG1K065●●07	0.970	175x165x165
0.75	1.5	1.5	2.5...4	LG1K065●●08	0.970	175x165x165
1.1	2.2	3	4...6.3	LG1K065●●10	0.970	175x165x165
1.5	4	4	6...10	LG1K095●●14	1.120	175x165x165
3	5.5	5.5	9...14	LG1D122●●16	1.270	175x165x165
4	7.5	9	13...18	LG1D182●●20	1.290	175x165x165
4	9	9	17...23	LG1D182●●21	1.290	175x165x165

Voltage codes ⁽²⁾

Volts ~ 50/60 Hz	220/ 230	230	380/ 400	400	400/415 (for LG1K)
LG1K, LG1D	M7	P7	Q7	V7	N7

⁽¹⁾ Avoid placing this material in contact with harsh substances (detergents, chlorine solvents, ketones, alcohol, aromatic hydrocarbons).

⁽²⁾ Some combinations of variants / control voltage may not be available. Please consult us.

⁽³⁾ Dimensions of standard versions, comprising (if any) handle, pushbutton, indicator light.





LJ7K06

Enclosed starters

For Control + Isolation + Short circuit / Overload Protection, with isolated 24 V control circuit

Enclosed safety motor starters complying with IEC 60204-1 "Safety of machinery" standards.

- ON/OFF motor starters: 1-way rotation control of 3-phase motor
 - Emergency stop ⁽¹⁾
 - Electrical circuit isolation, lockable on LJ7K09 with up to 3 padlocks
 - Short circuit protection
 - Overload protection
 - Protection against voltage drops for LJ7K09. For LJ7K06, a GVAX●● undervoltage trip may be added
 - Possible signaling with GV2SN●● indicator (to be ordered separately).
- Switching back on power supply after tripping must be a deliberate action.

Range:

- 9 pre-equipped enclosed safety starters from 0.06 to 4 kW.

Enclosures characteristics:

- Conforming to IEC 60947-1, IEC 60204-1
- Degree of protection according IEC 60529: IP55, IK07
- Ambient air temperature in operation -5 to +40°C
- Operational voltage (Ue) 690 V
- Operating position: same that as contactors
- Material: polycarbonate ⁽²⁾.

Included:

- 1 GV2ME thermal magnetic circuit breaker with mushroom emergency stop (release on ¼ turn),
 - 1 LC1K pre-wired contactor
 - 2 Harmony XB5 pushbuttons
 - 1 Integral transformer: 400/24 V, 25 VA
 - 1 GVAX undervoltage release module (with LJ7K09).
- Additional GVAX●● undervoltage release module for LJ7K06 - to be ordered separately.
- Additional GV2SN●● indicator light – to be ordered separately.
- Terminal allowing the connection of a volt-free contact, if required, in the control circuit.

Non-reversing motor starters with integral transformer, pre-wired for operation on a 3-phase 380 to 400 V 50 Hz supply (with pushbutton control of isolator function)

Standard power ratings of 3-phase motors 50 Hz in category AC-3	Circuit breaker	Dust and damp protected starter	Weight	Overall dimensions ⁽⁵⁾ WxHxD
380/400 V	Setting range of thermal trips	Reference ^{(3) (4)}	kg	
kW	A			
0.06	0.16...0.25	LJ7K06Q702	2.270	175x165x177
0.09	0.25...0.40	LJ7K06Q703	2.270	175x165x177
0.18	0.40...0.63	LJ7K06Q704	2.270	175x165x177
0.25	0.63...1	LJ7K06Q705	2.270	175x165x177
0.55	1...1.6	LJ7K06Q706	2.270	175x165x177
0.75	1.6...2.5	LJ7K06Q707	2.270	175x165x177
1.5	2.5...4	LJ7K06Q708	2.270	175x165x177
2.2	4...6.3	LJ7K06Q710	2.270	175x165x177
4	6...10	LJ7K09Q714	2.270	175x165x146

- (1)** LJ7K06: the mushroom head type Emergency Stop acts mechanically on the circuit breaker.
LJ7K09: the Emergency Stop function is performed by an undervoltage trip GVAX385, acting on the circuit breaker. This circuit breaker is always supplied pre-wired for use on 380/400 V 50 Hz.
- (2)** Avoid placing this material in contact with harsh substances (detergents, chlorine solvents, ketones, alcohol, aromatic hydrocarbons).
- (3)** In the reference, the voltage code **Q7 (380/400 V)** indicates the power supply voltage to which the starter will be connected, it being assumed that the contactor has a ~ 24 V coil (see control circuit scheme).
- (4)** Some combinations of variants / control voltage may not be available. Please consult us.
- (5)** Dimensions of standard versions, comprising (if any) handle, pushbutton, indicator light.
- (6)** Example: **LJ7K06Q705A04**.
- (7)** Delete the last 2 digits of the selected starter reference. Example: **LJ7K06Q705** becomes **LJ7K06Q7**.
- (8)** Circuit breaker to be ordered separately.
References GV2ME: see chapter B6 "Circuit breakers".

Variants (pre-assembled) ⁽⁴⁾

Description	Variants available for starter	Suffix to be added to the starter reference ⁽⁶⁾
With Emergency Stop No control pushbuttons	LJ7K06Q705...K09Q714	A04
With padlocking facility (fitted as standard on LJ7 K09)	LJ7K06Q705...K06Q710	A29
Without circuit breaker ⁽⁸⁾ (or undervoltage release voltage)	LJ7	⁽⁷⁾
Without circuit breaker ⁽⁸⁾ With Emergency Stop No control pushbuttons	LJ7K09Q7	A04
Without circuit breaker ⁽⁸⁾ Without Emergency Stop (if the emergency stop is on the machine)	LJ7K09Q7	A39
Without circuit breaker ⁽⁸⁾ Without Emergency Stop No control pushbuttons	LJ7K09Q7	A04A39



LG8K06



LG8K09

For Control + Isolation + Short circuit / Overload Protection

For OEM, the enclosed safety motor reverser starters comply with IEC 60204-1 "Safety of machinery" standards.

- ON/REVERSE/OFF motor starters: 2-way rotation control of 3-phase motor
- Emergency stop ⁽¹⁾
- Electrical circuit isolation, lockable on LG8K09 and LG8K12 with up to 3 padlocks
- Short circuit protection (switching back on power supply after tripping must be a deliberate action)
- Overload protection
- Protection against voltage drops for LG8K09, LG8K12. For LG8K06, a GVAX●● undervoltage trip may be added.
- Possible signaling with GV2SN●● indicator (to be ordered separately).

Range:

- 10 pre-equipped enclosed safety inverter starters from 0.06 to 5.5 kW.

Enclosures characteristics:

- Conforming to IEC 60947-1, IEC 60204-1 ⁽¹⁾
- Degree of protection according IEC 60529: IP55, IK07
- Ambient air temperature in operation -5 to +40°C
- Operational voltage (Ue) 690 V
- Operating position: same that as contactors
- Material: polycarbonate ⁽²⁾

Included:

- 2 LC1K prewired contactors
- 1 GV2ME thermal magnetic circuit breaker with mushroom emergency stop (release on ¼ turn)
- 1 "Stop" black pushbutton + 1 2-position spring return selector switch "I – II"
- 1 GVAX undervoltage release module with LG8K09, LG8K12 (to be ordered separately for LG8K06).

Reversing starters (with pushbutton control of isolation)

Standard power ratings of 3-phase motors 50-60 Hz in category AC-3			Circuit breaker Setting range of thermal trips	Dust & damp protected starter Basic reference, to be completed by adding the voltage code ⁽³⁾	Weight	Overall dimensions ⁽⁴⁾ WxHxD
220/ 230 V	400/ 415 V	440 V			kg	
kW	kW	kW	A			
–	0.06	0.06	0.16...0.25	LG8K06●●02	1.640	175x165x177
0.06	0.09	0.12	0.25...0.40	LG8K06●●03	1.640	175x165x177
–	0.18	0.18	0.40...0.63	LG8K06●●04	1.640	175x165x177
0.12	0.25	0.25	0.63...1	LG8K06●●05	1.640	175x165x177
0.25	0.55	0.55	1...1.6	LG8K06●●06	1.640	175x165x177
0.37	0.75	1.1	1.6...2.5	LG8K06●●07	1.640	175x165x177
0.75	1.5	1.5	2.5...4	LG8K06●●08	1.640	175x165x177
1.1	2.2	3	4...6.3	LG8K06●●10	1.640	175x165x177
1.5	4	4	6...10	LG8K09●●14	1.640	175x165x177
3	5.5	5.5	9...14	LG8K12●●16	1.640	175x165x177

Voltage codes ⁽³⁾

Volts ~ 50/60 Hz	220/ 230	380/ 400	400/ 415
	M7	Q7	N7

⁽¹⁾ LG8K06: the mushroom head type Emergency Stop acts mechanically on the circuit breaker. LG8K09, LG8K12: the Emergency Stop function is performed by an undervoltage trip, acting on the circuit breaker.

This circuit breaker is always supplied pre-wired for use on 380/400/415 V 50 Hz. For a 60 Hz supply, please consult your Regional Sales Office.

⁽²⁾ Avoid allowing the material to come into contact with strong bases (detergents, chlorine solvents, ketones, alcohol, aromatic hydrocarbons).

⁽³⁾ Some combinations of variants / control voltage may not be available. Please consult us.

⁽⁴⁾ Dimensions of standard versions, comprising (if any) handle, pushbutton, indicator light.





LJ8K06



LJ8K09



For Control + Isolation + Short circuit /Overload Protection, with isolated 24 V control circuit

For OEM, the enclosed safety motor reverser starters comply with IEC 60204-1 "Safety of machinery" standards.

- ON/REVERSE/OFF motor starters: 2-way rotation control of 3-phase motor
- Emergency stop ⁽¹⁾
- Electrical circuit isolation, lockable on LJ8K09 with up to 3 padlocks
- Short circuit protection (switching back on power supply after tripping must be a deliberate action)
- Overload protection
- Protection against voltage drops for LJ8K09. For LJ8K06, a GVAX●● undervoltage trip may be added
- Possible signaling with GV2SN●● indicator (to be ordered separately).

Range:

- 9 pre-equipped enclosed safety inverter starters from 0.06 to 4 kW.

Enclosures characteristics:

- Conforming to IEC 60947-1, IEC 60204-1
- Degree of protection according IEC 60529: IP55, IK07
- Ambient air temperature in operation -5 to +40°C
- Operational voltage (U_e) 690 V
- Operating position: same that as contactors
- Material: polycarbonate ⁽²⁾.

Included:

- 2 LC1K prewired contactors
- 1 GV2ME thermal magnetic circuit breaker with mushroom emergency stop (release on ¼ turn)
- 1 Integral transformer: 400/24 V, 25 VA
- 1 "Stop" black pushbutton + 1 2-position spring return selector switch "I – II"
- 1 GVAX undervoltage release module with LJ8K09 (to be ordered separately for LJ8K06).
- Terminal allowing the connection of a volt-free contact, if required, in the control circuit.

Reversing motor starters with integral transformer, pre-wired for operation on a 3-phase 380 to 400 V 50 Hz supply (with pushbutton control of isolator function)

Standard power ratings of 3-phase motors 50 Hz in category AC-3	Circuit breaker	Dust and damp protected starter	Weight	Overall dimensions ⁽⁵⁾ WxHxD
380/400 V	Setting range of thermal trips	Reference ^{(3) (4)}		
kW	A		kg	
0.06	0.16...0.25	LJ8K06Q702	2.650	175x165x177
0.09	0.25...0.40	LJ8K06Q703	2.650	175x165x177
0.18	0.40...0.63	LJ8K06Q704	2.650	175x165x177
0.25	0.63...1	LJ8K06Q705	2.650	175x165x177
0.55	1...1.6	LJ8K06Q706	2.650	175x165x177
0.75	1.6...2.5	LJ8K06Q707	2.650	175x165x177
1.5	2.5...4	LJ8K06Q708	2.650	175x165x177
2.2	4...6.3	LJ8K06Q710	2.650	175x165x177
4	6...10	LJ8K09Q714	2.650	175x165x146

Variants (pre-assembled) ⁽⁴⁾

Description	Variants available for starter	Suffix to be added to the starter reference
Without circuit breaker ⁽⁷⁾ (or undervoltage release voltage)	LJ8	⁽⁶⁾

⁽¹⁾ LJ8 K06: the mushroom head type Emergency Stop acts mechanically on the circuit breaker. LJ8K09: the Emergency Stop function is performed by an undervoltage trip GVAX385, acting on the circuit breaker. This circuit breaker is always supplied pre-wired for use on 380/400 V 50 Hz.

⁽²⁾ Avoid placing this material in contact with harsh substances (detergents, chlorine solvents, ketones, alcohol, aromatic hydrocarbons).

⁽³⁾ In the reference, the voltage code Q7 (380/400 V) indicates the power supply voltage to which the starter will be connected, it being assumed that the contactor has a ~ 24 V coil (see control circuit scheme).

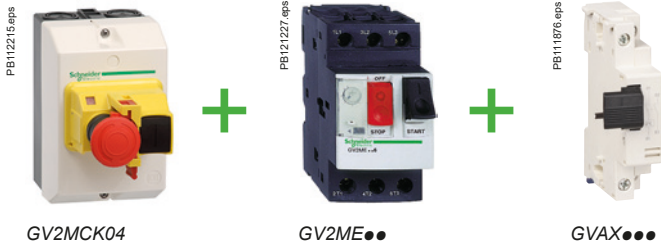
⁽⁴⁾ Some combinations of variants / control voltage may not be available. Please consult us.

⁽⁵⁾ Dimensions of standard versions, comprising (if any) handle, pushbutton, indicator light.

⁽⁶⁾ Delete the last 2 digits of the selected starter reference. Example: LJ8K06Q702 becomes LJ8K06Q7.

⁽⁷⁾ Circuit breaker to be ordered separately. References GV2ME: see chapter B6 "Circuit breakers".

TeSys
TeSys GV2MCK04 enclosure for safety starters / DOL / to be completed
with GV2ME, GVAX
Product references



GV2MCK04 enclosure is fitted with a mushroom pushbutton.
It allows, with addition of a circuit breaker and undervoltage trip, the construction of a safety direct-on-line starter conforming INRS and VDE0113.

- Enclosures characteristics:
- Conforming to IEC 60947-2; IEC 60947-4-1
 - Degree of protection according IEC 60529: refer to selection chart
 - Operational voltage (Ue) 690 V
 - Material : polycarbonate (1).

Enclosure						
Enclosure for thermal-magnetic circuit breakers GV2ME						
Type	Degree of protection	Possible no. of side mounting auxiliary contact blocks on GV2ME		Reference	Weight kg	Overall dimensions WxHxD
		LH side	RH side			
Surface mounting, double insulated with protective conductor. Sealable cover	IP55	1	1	GV2MCK04	0.420	93x147x145.5

GV2ME circuit beaker, GVAX undervoltage trip
Product references: page A1/32.

(1) Avoid placing this material in contact with harsh substances (detergents, chlorine solvents, ketones, alcohol, aromatic hydrocarbons).

Enclosed starters



TeSys

Enclosures, components,
for customer assemblies
Spare parts



Enclosed starters

PB121229.eps



VCFXGE4

PB121230.eps



VBFXGE2



PB121231.eps



V0

PB121232.eps



V4

Empty enclosures with rotary handle

IP65 enclosure with red padlockable handle operator and yellow front plate
(for mounting a main or Emergency Stop switch-disconnector)

Ithe	For switch body	Nb. of possible add. module attachments	Reference ⁽¹⁾	Weight
A	A			kg
10...32	VN12, VN20 V02...V2	2	VCFXGE1	0.340
10...32	V02...V2	4	VCFXGE4	0.660
50...63	V3 - V4	3	VCFXGE2	0.660
100... 140	V5 - V6	1	VCFXGE6	1.04

IP65 enclosure with black padlockable handle and black front plate
(for mounting a main switch-disconnector)

10...32	VN12, VN20 V02...V2	2	VBFXGE1	0.340
10...32	V02...V2	4	VBFXGE4	0.660
50...63	V3-V4	3	VBFXGE2	0.660
100... 140	V5 - V6	1	VBFXGE6	1.04

Switch bodies to fit VCFX, VBFX enclosures ⁽²⁾

Standard applications

Description	Rating	Reference	Weight
	A		kg
3-pole switch-disconnectors	10	VN12	0.110
	16	VN20	0.110

High performance applications

Description	Rating	Reference	Weight
	A		kg
3-pole switch-disconnectors	10	V02	0.200
	16	V01	0.200
	20	V0	0.200
	25	V1	0.200
	32	V2	0.200
	50	V3	0.500
	80	V4	0.500
	125	V5	0.900
	175	V6	0.900

⁽¹⁾ Enclosure not suitable in atmosphere contaminated with harsh substances (detergents, chlorine solvents, ketones, alcohol, aromatic hydrocarbons).

⁽²⁾ For characteristics of switch-disconnectors, please consult your Regional Sales Office.



LE1GVMEK, LE1GVMEKA59

Empty enclosures with sealing device

Composition	Reference
Insulating enclosure with GV2E01 sealing device	LE1GVMEK
Insulating enclosure with GV2E01 sealing device, neutral terminal	LE1GVMEKA59

Direct-on-line starters characteristics

(based on LE1GVMEK enclosure + GV2ME circuit breaker + LC1K contactor assemblies)

Functions / range / specificities:

- Circuit Isolation
- Protection against short circuit
- Motor protection: motor OFF in case of overload – manual reset with the black pushbutton.
- ON/OFF motor control
- Functions can be completed with optional components: remote control, signaling.

Enclosures characteristics:

- Conforming to IEC 60947-4-1 standard
- Degree of protection IP55, according IEC 60529
- Ambient air temperature in operation -5 to +40°C
- Operating position: same as TeSys K series contactors
- Material: polycarbonate ⁽¹⁾.

■ 6 ratings of direct-on-line starters from 0.37 to 5.5 kW (400 V AC) can be realized, based the combinations of circuit breaker + contactor to be ordered separately:

- GV2ME thermal magnetic circuit breaker, of the required rating (see below)
- LC1K contactor, of the required rating (see below)
- optional accessories (indicating light, On pushbutton, sealing kit...).

Circuit breakers + contactors - Type 1 coordination ⁽²⁾

Standard power ratings of 3-phase motors 50/60 Hz in AC-3			Setting range of thermal trips	Fixed magnetic current 13 Irth	For customer assembly	
400/415 V	440 V	500 V			Motor circuit breaker Reference	Contactor Reference to be completed with the coil voltage code
kW	kW	kW	A	A		
0.37	0.37	0.37	1...1.6	22.5	GV2ME06	LC1K0610●●
0.55	0.55	0.55				
-	-	0.75				
0.75	0.75	-	1.6...2.5	33.5	GV2ME07	LC1K0610●●
-	1.1	1.1				
1.1	-	1.5	2.5...4	51	GV2ME08	LC1K0610●●
1.5	1.5	2.2				
2.2	2.2	-	4...6.3	78	GV2ME10	LC1K0610●●
-	3	3				
3	-	4	6...10	138	GV2ME14	LC1K0910●●
4	4	5.5				
5.5	5.5	7.5	9...14	170	GV2ME16	LC1K1210●●

Coil voltage codes

Volts	24	110	220/230	230	230/240	380/400
~ 50/60 Hz	B7	F7	M7	P7	U7	Q7
---	BW3	-	-	-	-	-

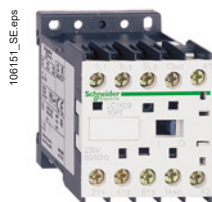
BW3 coil: low consumption (1.5 W), wide range (0.7...1.3 Uc) with integral suppression device as standard.

⁽¹⁾ Avoid placing this material in contact with harsh substances (detergents, chlorine solvents, ketones, alcohol, aromatic hydrocarbons).

⁽²⁾ Extract from Coordination tables see chapter A6.



GV2ME●●



LC1K0610●●



TeSys

TeSys DE1DS empty enclosures for standard starters

Product references

Enclosed starters

PB112204.eps



DE1DS1A04

PB112205.eps



DE1DS1A05

PB112259.eps



DE1DS1

PB112275.eps



DE1DS1A13

Empty enclosures for starters without isolating device		
Head(s) mounted on cover	Designed for use with	Reference
Without	LE1D09 and D12	DE1DS1A04
	LE1D18...D35	DE1DS2A04
	LE2D09...D35	DE1DS2A04
1 flush blue head "R"	LE1D09 and D12	DE1DS1A05
	LE1D18...D35	DE1DS2A05
	LE2D09...D35	DE1DS2A05
1 flush green head "I" 1 projecting red head "O"	LE1D09 and D12	DE1DS1
	LE1D18...D35	DE1DS2
1 flush blue head "R" 1 switch with 3 fixed positions	LE1D18...D35	DE1DS2A09
	LE1D09 and D12	DE1DS1A13
	LE1D18...D35	DE1DS2A13

TeSys

TeSys DE1KS empty enclosures for safety starters

Product references

PG11091 eps



DE1KS217A06

PG11096 eps



DE1KS217A06A37

Empty enclosures for security starters			
Designed for use with	Head(s) mounted on cover	Add-on blocks	Reference
LG7	Without		DE1KS217A04
	1 flush white head "I" 1 projecting black head "O"		DE1KS217A06
	1 flush white head "I" 1 projecting black head "O" 1 head emergency stop	Padlocking devices	DE1KS217A06A37

Enclosed starters



PB111915.eps



GV2V01

PB112390.eps



GV2K011

PG113130.eps



GV2K021

8274.eps



GV2K031

PB112393.eps



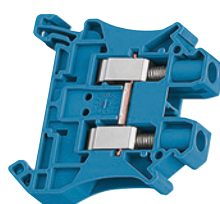
GV2K04

PB112128.eps



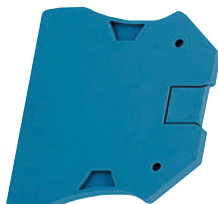
GV2E01 - GV2E02

PB502236.eps



NSYTRV62BL

PB502246.eps



NSYTRAC22BL

PB112218.eps



GV2CP21

Accessories					
Description		Sold in lots of	Unit reference	Weight kg	
Mushroom head pushbutton Ø 40 mm, red, IP55	Padlocking device ⁽⁶⁾ for GV2ME operator (padlocking is only possible in the "O" position)	1 to 3 padlocks Ø 4 to 8 mm	1	GV2V01	0.075
	Spring return ⁽²⁾		1	GV2K011	0.052
	Emergency stop Latching ⁽²⁾	Key release, key n° 455	1	GV2K021	0.160
		Turn to release	1	GV2K031	0.115
		Turn to release, padlockable	1	GV2K04 ⁽¹⁾	0.120
Sealing kit	For enclosures and front plate	IP 55 for temperature between +5 °C and +40 °C	10	GV2E01	0.012
		IP 55 for temperature between -20 °C and +40 °C	10	GV2E02	0.012
Linery passthrough neutral terminal block – 6 mm² 41 A single-level 1x1 screw		50	NSYTRV62BL	0.015	
End cover for Linery screw single-level terminal block		50	NSYTRAC22BL	0.003	

⁽¹⁾ Circuit breaker to be ordered separately. Commercial references of GV2ME01 to M22: see chapter B6 "Circuit breakers".

⁽²⁾ Supplied with IP55 GV2E01 sealing kit. To be fitted with enclosure GV2M●01.

⁽³⁾ Padlockable in "O" position using Ø 4 to 8 mm shank padlocks.

Separate front plate for GV2ME

Provides a sealing cover to GV2ME circuit breaker, on any kind of front panel.

Front plate			
Description		Reference	Weight kg
For direct control, through a panel, of a chassis mounted GV2ME	IP55	GV2CP21	0.800



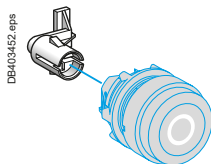
ZB5AA331



ZB5AL432



LAD9091



DB403452 eps



PF141188 eps

ZB5AD●



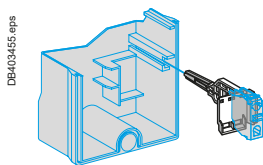
PB121236 eps

ZENL1111



PB121237 eps

LAD90909



DB403455 eps

Heads for Start and Stop/Reset pushbuttons

Description	For use on	Unit reference
Flush, green "I" ⁽¹⁾	LE1, LE3, LE4, LE6 D09...D35	ZB5AA331
Projecting, red "O" ⁽¹⁾	LE●D09...D35	ZB5AL432
Adaptation kit for head ZB5AL432	LE1D09 and D12	LAD9091
	LE1D18...D35, LE2D09...D35	LAD91810
	LE3, LE4, LE6 and LE8 D09...D35	LAD9T4

Heads for Reset pushbuttons

Flush, blue "R" ⁽²⁾	LE●D09...D35	ZB5AA0
		+ ZBA639 ⁽³⁾
Adaptation kit for head ZB5AA0 + ZBA639	LE1D09 and D12	LAD9092
	LE1D18...D35, LE2D09...D35	LAD91810
	LE3, LE6, LE4 and LE8D09...D35	LAD9T4

Heads for selector switches

3-position stay put	LE1D09...D35●●A09	ZB5AD3
2-position stay put	LE1D09...D35●●A13	ZB5AD2
3-position spring return to centre	LE2D09...D35 LE8D09...D35	ZB5AD5

Contact blocks

1 N/O spring return	LE●D09...D35	ZENL1111
1 N/C spring return	LE●D09...D35	ZENL1121
Mounting for contact block	LE1D09 and D12	LAD90909
	LE1D18...D35, LE2, LE3, LE4, LE6 and LE8D09...D35	LAD91809

⁽¹⁾ Remember to order adaptation kit LAD9091 or LAD91810 or LAD9T4, depending on size.

⁽²⁾ Remember to order adaptation kit LAD9092 or LAD91810 or LAD9T4, depending on size.

⁽³⁾ Sold in lots of 10.



GV2ME●●

Thermal magnetic circuit breakers, with screw clamp terminals

GV2ME with pushbutton control

Standard power ratings of 3-phase motors
50/60 Hz in category AC-3

400/415 V			500 V			690 V			Setting range of thermal trips (2)	Magnetic tripping current I _d ± 20 %	Reference
P	I _{cu}	I _{cs} (1)	P	I _{cu}	I _{cs} (1)	P	I _{cu}	I _{cs} (1)			
kW	kA	%	kW	kA	%	kW	kA	%	A	A	
—	—	—	—	—	—	—	—	—	0.1...0.16	1.5	GV2ME01
0.06	★	★	—	—	—	—	—	—	0.16...0.25	2.4	GV2ME02
0.09	★	★	—	—	—	—	—	—	0.25...0.40	5	GV2ME03
0.12	★	★	—	—	—	0.37	★	★	0.40...0.63	8	GV2ME04
0.18	★	★	—	—	—	—	—	—			
0.25	★	★	—	—	—	0.55	★	★	0.63...1	13	GV2ME05
0.37	★	★	0.37	★	★	—	—	—	1...1.6	22.5	GV2ME06
0.55	★	★	0.55	★	★	0.75	★	★			
—	—	—	0.75	★	★	1.1	★	★			
0.75	★	★	1.1	★	★	1.5	3	75	1.6...2.5	33.5	GV2ME07
1.1	★	★	1.5	★	★	2.2	3	75	2.5...4	51	GV2ME08
1.5	★	★	2.2	★	★	3	3	75			
2.2	★	★	3	50	100	4	3	75	4...6.3	78	GV2ME10
3	★	★	4	10	100	5.5	3	75	6...10	138	GV2ME14
4	★	★	5.5	10	100	7.5	3	75			
5.5	15	50	7.5	6	75	9	3	75	9...14	170	GV2ME16
—	—	—	—	—	—	11	3	75			
7.5	15	50	9	6	75	15	3	75	13...18	223	GV2ME20
9	15	40	11	4	75	18.5	3	75	17...23	327	GV2ME21
11	15	40	15	4	75	—	—	—	20...25	327	GV2ME22 (3)

GV2ME technical characteristics: see in chapter B6.

Undervoltage trip, INRS (can only be mounted on GV2ME)

Safety device for dangerous machines conforming to INRS and VDE0113

Side (1 block on RH side of circuit breaker GV2 ME)	110...115 V	50 Hz	GVAX115
		60 Hz	GVAX116
	127 V	60 Hz	GVAX115
	220...240 V	50 Hz	GVAX225
		60 Hz	GVAX226
	380...400 V	50 Hz	GVAX385
		60 Hz	GVAX386
	415...440 V	50 Hz	GVAX415
	440 V	60 Hz	GVAX385

GVAX technical characteristics: see in chapter B6.

(1) As % of I_{cu}.

(2) The thermal trip setting must be within the range marked on the graduated knob.

(3) Maximum rating which can be mounted in enclosures GV2MC or MP, please consult your Regional Sales Office.

★ > 100 kA.



GVAX●●●

TeSys

TeSys LR2K, LRD thermal overload relays

Product references



LR2K●●

Thermal overload relays - selection table

LR2K thermal overload relays can be mounted on all 3P LC1K contactors with screw clamp connectors.

Class 10 A (the standard specifies a tripping time of between 2 and 10 seconds at 7.2 In)

Relay setting range	Fuses to be used with selected relay			Reference
	Maximum rating Type	aM	gG	BS88
A	A	A	A	A
0.11...0.16	0.25	0.5	–	LR2K0301
0.16...0.23	0.25	0.5	–	LR2K0302
0.23...0.36	0.5	1	–	LR2K0303
0.36...0.54	1	1.6	–	LR2K0304
0.54...0.8	1	2	–	LR2K0305
0.8...1.2	2	4	6	LR2K0306
1.2...1.8	2	6	6	LR2K0307
1.8...2.6	4	8	10	LR2K0308
2.6...3.7	4	10	16	LR2K0310
3.7...5.5	6	16	16	LR2K0312
5.5...8	8	20	20	LR2K0314
8...11.5	10	25	20	LR2K0316
10...14	16	32	25	LR2K0321
12...16	20	40	32	LR2K0322

LRD thermal overload relays can only be mounted on LC1D contactors of same size ratio and with screw clamp connectors.

Relay setting range (A)	Fuses to be used with selected relay			For use with contactor LC1	Reference
	aM (A)	gG (A)	BS88 (A)		
Class 10 A ⁽¹⁾ for connection by screw clamp terminals or connectors					
0.10...0.16	0.25	2	–	D09...D38	LRD01
0.16...0.25	0.5	2	–	D09...D38	LRD02
0.25...0.40	1	2	–	D09...D38	LRD03
0.40...0.63	1	2	–	D09...D38	LRD04
0.63...1	2	4	–	D09...D38	LRD05
1...1.6	2	4	6	D09...D38	LRD06
1.6...2.5	4	6	10	D09...D38	LRD07
2.5...4	6	10	16	D09...D38	LRD08
4...6	8	16	16	D09...D38	LRD10
5.5...8	12	20	20	D09...D38	LRD12
7...10	12	20	20	D09...D38	LRD14
9...13	16	25	25	D12...D38	LRD16
12...18	20	35	32	D18...D38	LRD21
16...24	25	50	50	D25...D38	LRD22
23...32	40	63	63	D25...D38	LRD32
30...38	40	80	80	D32 and D38	LRD35



LRD●●

Enclosed starters

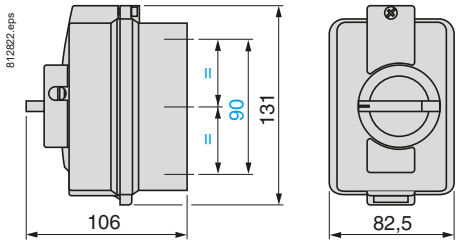
Technical Data for Designers

Contents

Switch-disconnectors	A1/36 to A1/38
Direct-on-line starters	A1/39, A1/41 to A1/47
.....and A1/49	
Star-delta starters	A1/40 and A1/48
Starters for safety applications	A1/50 to A1/53

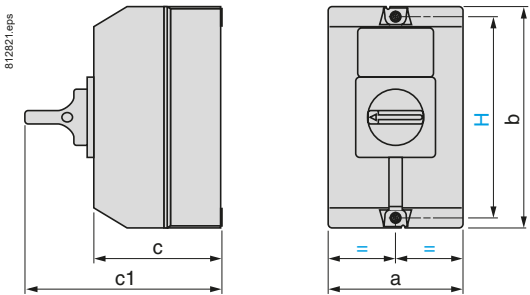
Dimensions

VCFN12GE to VCFN40GE



Cable glands: 2 x 16 P top and bottom.

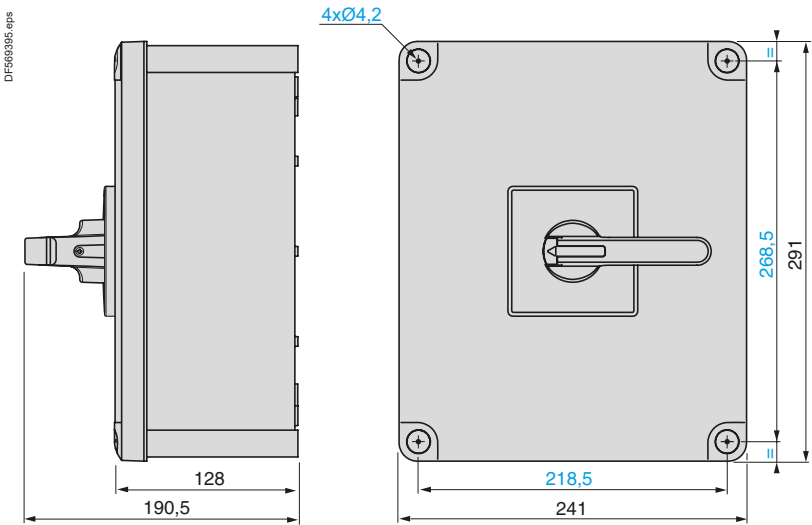
VCF or VBF02GE to 4GE, VCF●●GEGP and VCF●GEGP, VCFX or VBFXGE1 to GE4



	a	b	c	c1	H
V●F02GE to V●F2GE, V●FXGE1 VCF●●GEGP and VCF●GEGP ⁽¹⁾	90	146	85	131	130
V●F3GE and V●F4GE ⁽²⁾	157	180	107	152	164
V●FXGE2 and V●FXGE4 ⁽²⁾	157	180	107	152	164

- (1) Cable glands: 2x ISO 16 rear, 4x ISO 20/25 top and bottom.
- (2) Cable glands: 4x ISO 25/32 rear, 4x ISO 25/32 top and bottom.

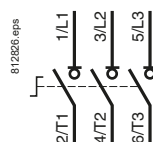
VCF or VBF5GEN and 6GEN



Schemes

Switch-disconnectors

Enclosed or switch bodies



Main pole module



Neutral pole module



Auxiliary contact blocks

VZ7



VZ20



VZN05



VZN06



Enclosed
starters

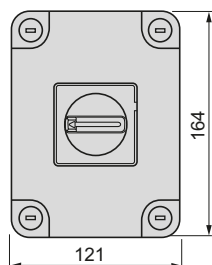
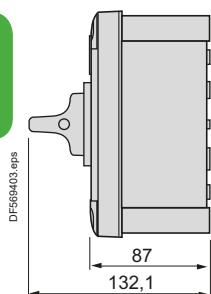
Ref.



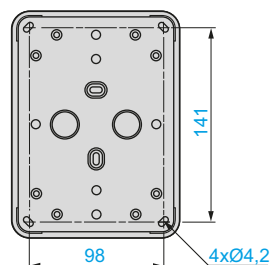
Dimensions

VC1GUN and VC2GUN

Enclosed starters

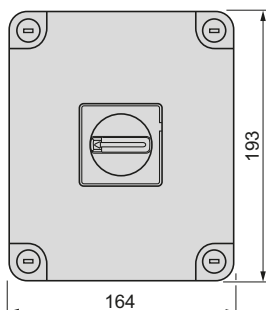
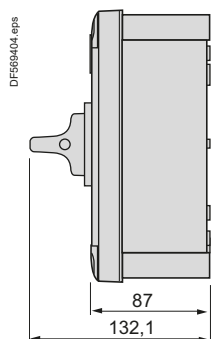


Fixing (rear view)

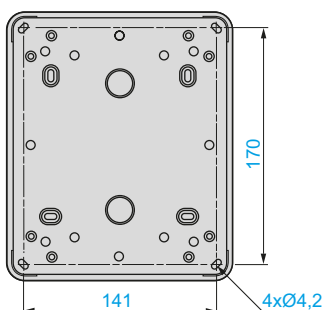


VC3GUN and VC4GUN

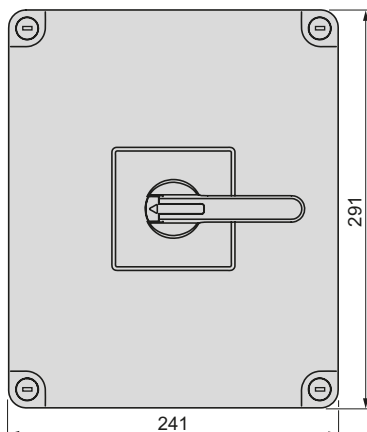
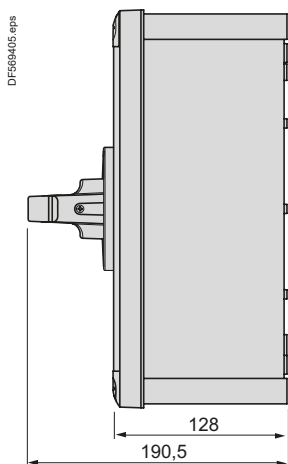
Ref.



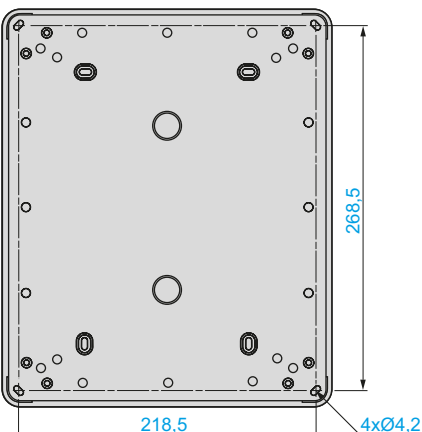
Fixing (rear view)



VC5GUN and VC6GUN



Fixing (rear view)



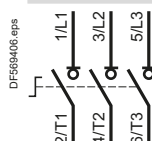
Schemes

Switch-disconnectors

Enclosed switch-disconnectors or switch bodies

Main pole module

Neutral pole module



Auxiliary contact block modules

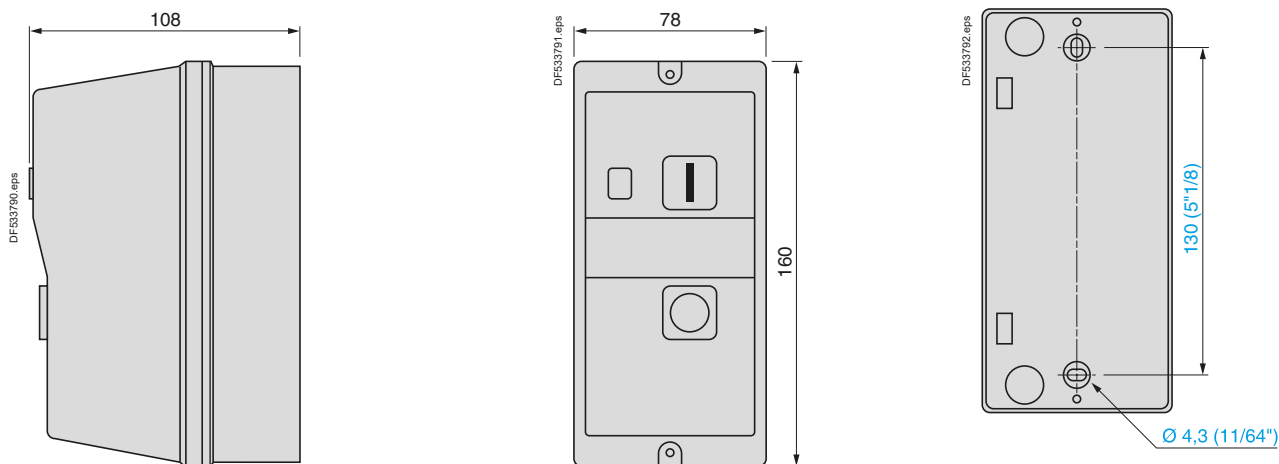
VZ7

VZ20



Dimensions

LE1M35 ⁽¹⁾



Knock-outs or blanking plugs for cable glands

Enclosure type	At top		At bottom	
	PG	ISO	PG	ISO
LE1 M	2 x 13 to 2 x 21	2 x 20 or 2 x 25	2 x 13 to 2 x 21	2 x 20 or 2 x 25

(1) Can be mounted on machine panel or frame. Knock-outs for 4 x 13 P cable glands.

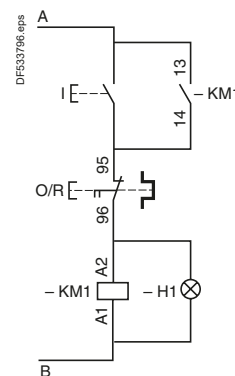
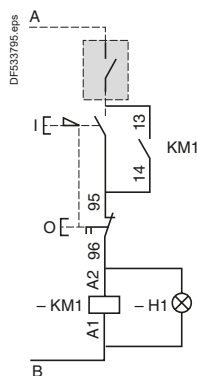
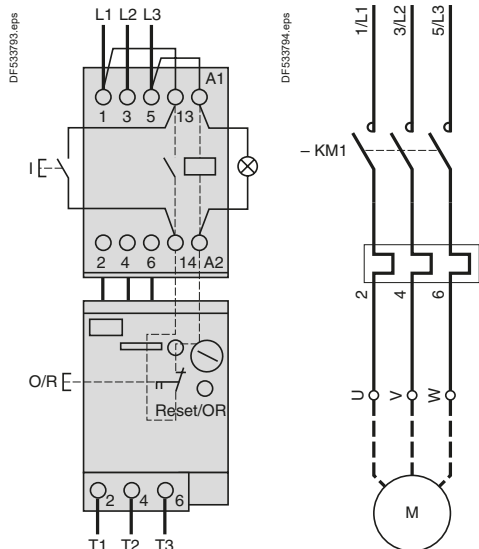
Schemes

LE1M35

Choice of type of control built into the product

Control by latching pushbuttons

Control by spring return pushbuttons

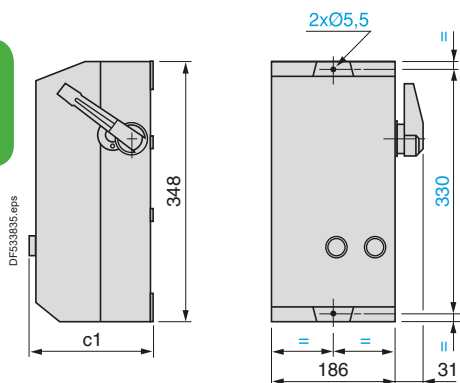


Connections

Power voltage	Control circuit voltage	A	B
380 V, 400 V, 415 V, 440 V	220 V, 230 V, 240 V	L3	Neutral
	380 V, 400 V, 415 V, 440 V	L3	L1
	Other voltages	For customer assembly	
Other voltages	All voltages (440 V max)	For customer assembly	

Dimensions

LE6D09...D18



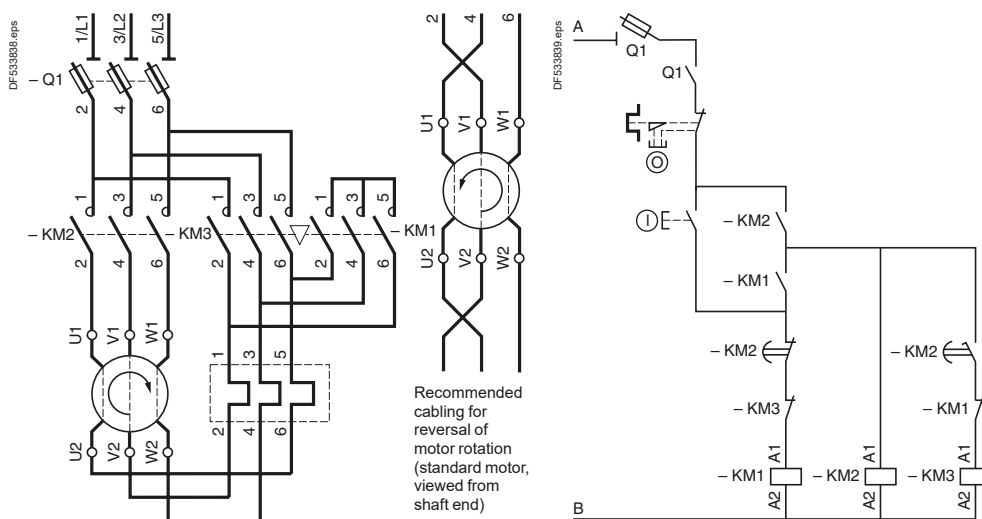
	c1
Standard version	175.5
Variant A04	167
Variant A05	175.5

Knock-outs or blanking plugs for cable glands

Type of enclosure	At top		At bottom	
	PG	ISO	PG	ISO
LE6D09...D18	—	2 x 20 or 2 x 25 or 2 x 32 or 2 x 40	—	2 x 20 or 2 x 25 or 2 x 32 or 2 x 40

Schemes

LE6D09...D18

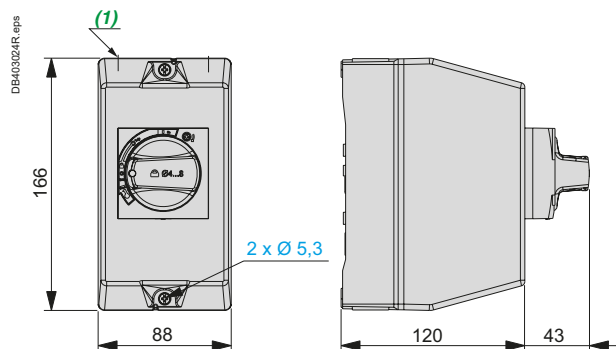


Connections

Power voltage	Control circuit voltage	A	B
380 V, 400 V, 415 V, 440 V	220 V, 230 V, 240 V	L3	Neutral terminal
	380 V, 400 V, 415 V, 440 V	L3	L1
	Other voltages	Terminal 1	Terminal 2
Other voltages	All voltages (600 V max)	For customer assembly	

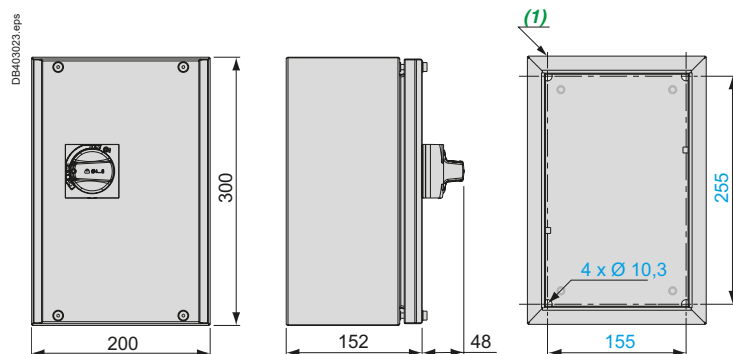
Dimensions

GV2PC●●



(1) Top face: 2 knock-outs for ISO20 cable glands.
Bottom face: 2 knock-outs for ISO20 cable glands.

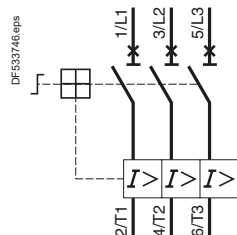
GV3PC●●



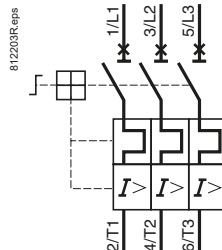
(1) Top face: 1 blanking plug for ISO32 cable gland.
Bottom face: 2 blanking plugs for ISO32 cable gland + 1 blanking plug for ISO20 cable gland.

Schemes

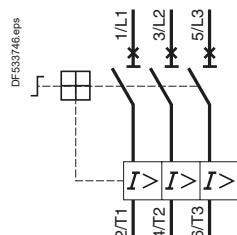
GV2L



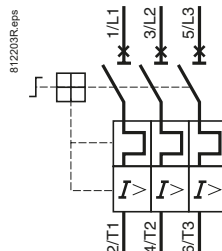
GV2P



GV3L

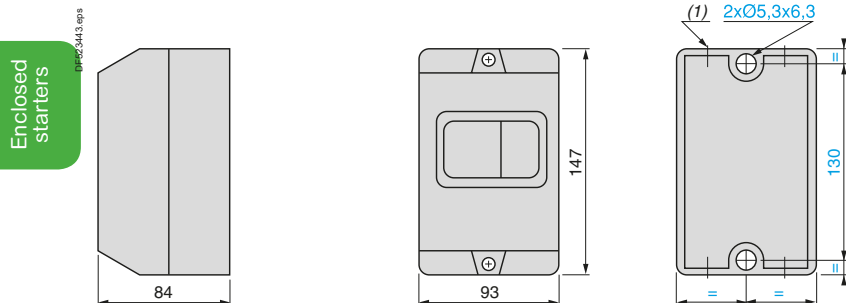


GV3P



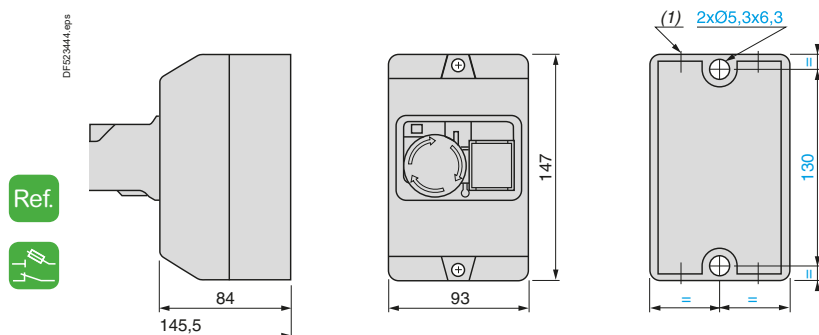
Dimensions

Surface mounting enclosure GV2MC0●



(1) Top face: 2 knock-outs for ISO20/25 cable glands or Pg16 or 16mm conduits.
Bottom face: 2 knock-outs for ISO20/25 cable glands or Pg16 or 16mm conduits.

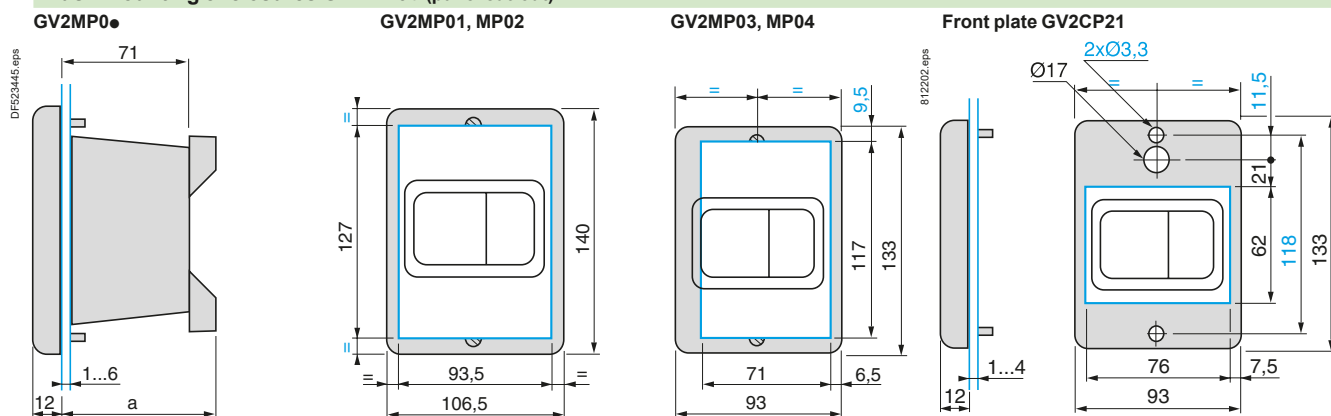
Surface mounting enclosure GV2MCK04



(1) Top face: 2 knock-outs for ISO20/25 cable glands or Pg16 or 16mm conduits.
Bottom face: 2 knock-outs for ISO20/25 cable glands or Pg16 or 16mm conduits.

Mounting

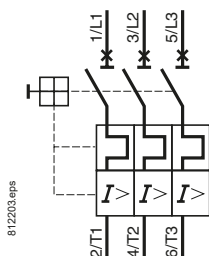
Flush mounting enclosures GV2MP0● (panel cut-out)



GV2	a
MP01, MP02	—
MP03, MP04	86

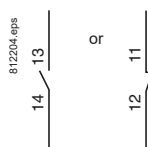
Schemes

GV2ME●●

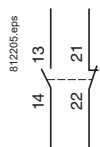


Instantaneous auxiliary contacts

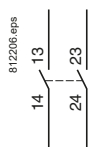
GVAE1



GVAE11

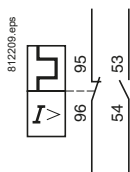


GVAE20

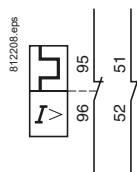


Instantaneous auxiliary contacts and fault signalling contacts

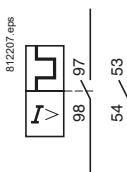
GVAD0110



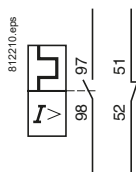
GVAD0101



GVAD1010

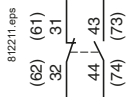


GVAD1001

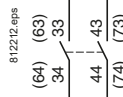


Instantaneous auxiliary contacts

GVAN11

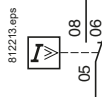


GVAN20



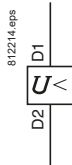
Short-circuit signalling contacts

GVAM11

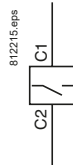


Undervoltage trips

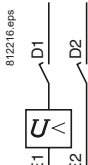
GVAU●●●



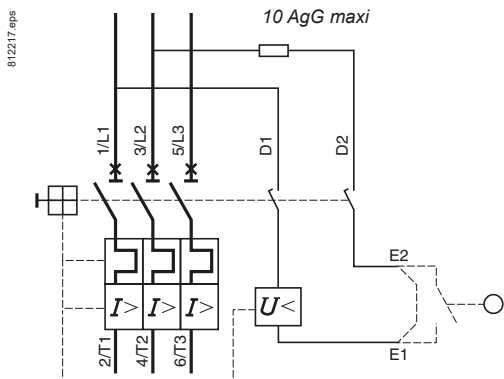
GVAS●●●



GVAX●●●

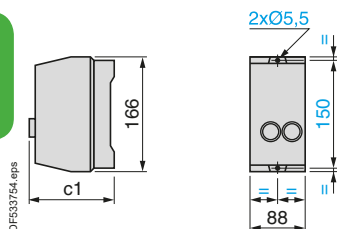


Wiring diagram for undervoltage trip used on potentially dangerous machines, conforming to INRS

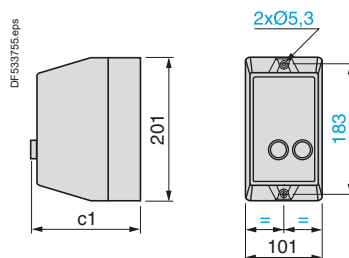


Dimensions

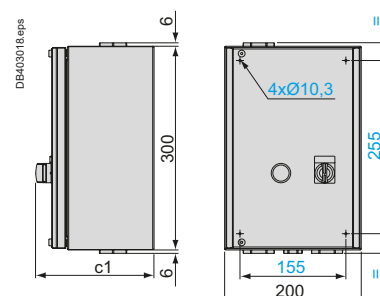
LE1D09 and D12



LE1D09...T LE1D18...D35 and LE2D09...D35



LE1D40A...D65A LE2D40A...D65A

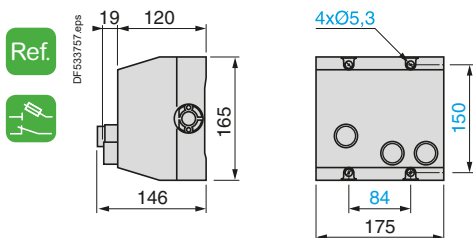


	c1
Standard version	128.5
Variant A04	120
Variant A05	128.5
Variant A09	120
Variant A13	120

	c1	LE1D	LE2D
Standard version		153.5	160
Variant A04		145	145
Variant A05		153.5	153.5
Variant A09		160	–
Variant A13		160	–

	c1	LE1D	LE2D
Standard version		158.5	174
Variant A04		150	150
Variant A05		158.5	158.5

LE2K06 and K09

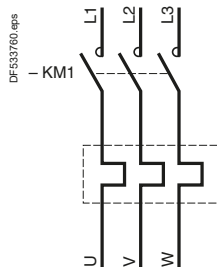


Knock-outs or blanking plugs for cable glands

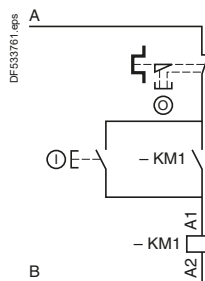
Type of enclosure	At top		At bottom	
	PG	ISO	PG	ISO
LE1D09 and D12	–	2 x 20	–	2 x 20
LE1D18...D35 and LE2D09...D35	–	2 x 20 or 2 x 25	–	2 x 20 or 2 x 25
LE1 and LE2D40A...D65A	–	1 x 32	–	1 x 20 and 2 x 32
LE2K06 and K09	2 x 13 and 2 x 16	4 x 20	2 x 13 and 2 x 16	4 x 20

Schemes

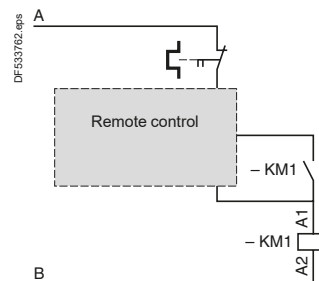
LE1D09...D65A



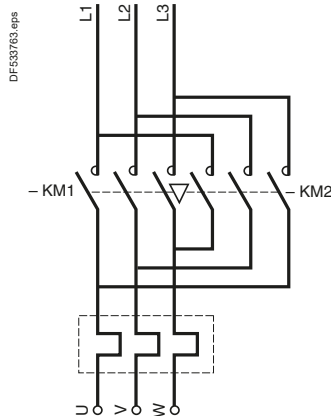
LE1D09...D65A



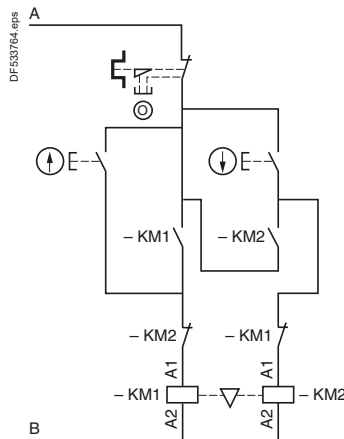
LE1D09...D65A with variant A04 or A05



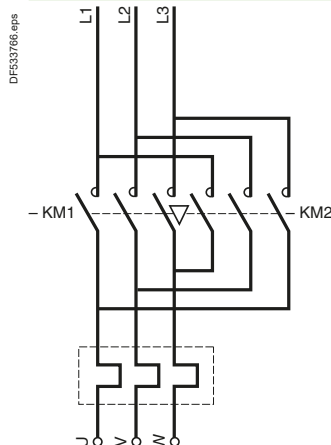
LE2K06, K09



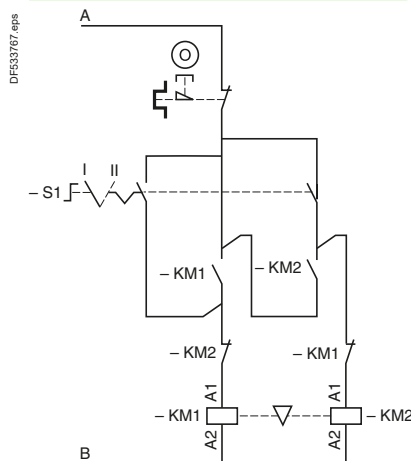
LE2K06, K09



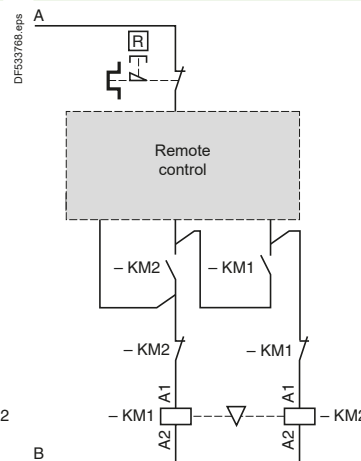
LE2D09...D65A



LE2D09...D65A



LE2D40A...D65A with variants A04 or A05



LE1D09...D65A, LE2D09...D65A Connections

Power voltage	Control circuit voltage	A	B
380 V, 400 V, 415 V, 440 V	220 V, 230 V, 240 V	L3	Neutral terminal
	380 V, 400 V, 415 V, 440 V	L3	L1
	Other voltages	Terminal 1	Terminal 2
Other voltages	Other voltages (600 V max)	For customer assembly	

LE2K06, K09 Connections

Power voltage	Control circuit voltage	A	B
380 V, 400 V, 415 V	220 V, 230 V, 240 V	L3	Neutral
	380 V, 400 V, 415 V	L3	L1
Other voltages	Other voltages (440 V max)	For customer assembly	

TeSys

TeSys LE4K, LE8K, LE4D, LE8D enclosed standard starters / DOL, reverser

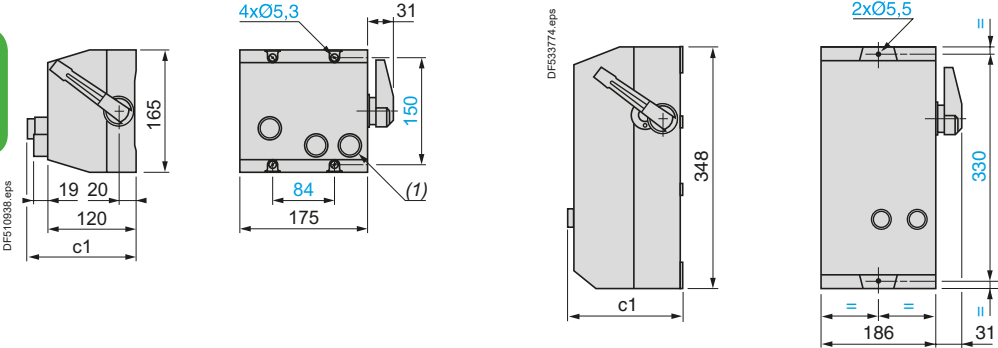
Dimensions

Dimensions

LE4K06 and K09, LE8K06 and K09

LE4D09...D35, LE8D09...D35

Enclosed starters



	c1	
	LE4K	LE8K
Standard version	146	146
Variant A05	–	139

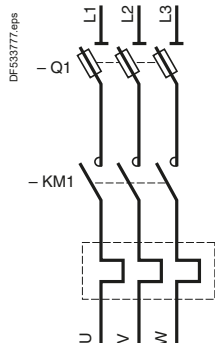
(1) For LE8 only.

	c1	
	LE4D	LE8D
Standard version	175.5	182
Variant A04	167	167
Variant A05	175.5	175.5

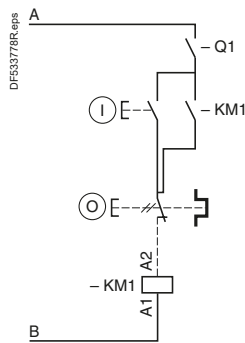
Knock-outs or blanking plugs for cable glands				
Type of enclosure	At top		At bottom	
	PG	ISO	PG	ISO
LE4 and LE8D09...D35	–	2 x 20 or 2 x 25 or 2 x 32 or 2 x 40	–	2 x 20 or 2 x 25 or 2 x 32 or 2 x 40
LE4 and LE8K06 and K09	2 x 13 and 2 x 16	4 x 20	2 x 13 and 2 x 16	4 x 20

Schemes

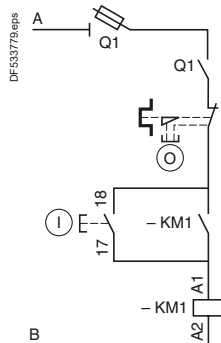
LE4K06, K09 LE4D09...D35



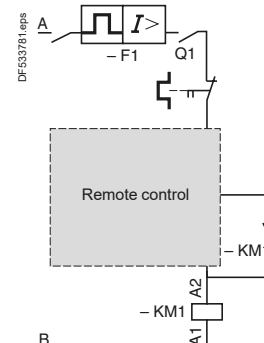
LE4K06, K09



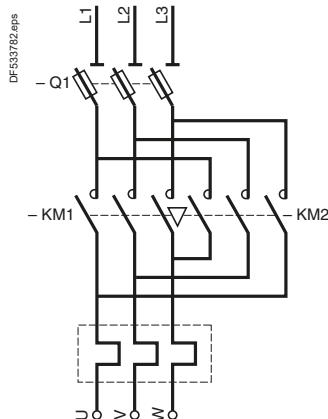
LE4D09...D35



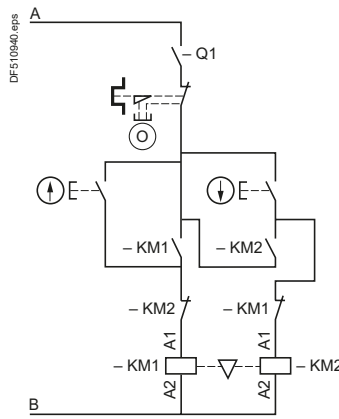
LE4D09...D35 with variant A04 or A05



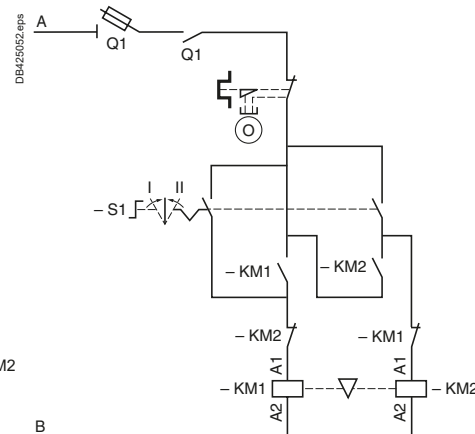
LE8K06, K09 LE8D09...D35



LE8K06, K09



LE8D09...D35



LE4D09 and D12, LE8D09 and D12 Connections

Power voltage	Control circuit voltage	A	B
380 V, 400 V, 415 V, 440 V	220 V, 230 V, 240 V	L3	Neutral
	380 V, 400 V, 415 V, 440 V	L3	L1
	Other voltages	Terminal 1	Terminal 2
Other voltages	Other voltages (600 V max)	For customer assembly	

LE4D18...D35, LE8D18...D35 Connections

Power voltage	Control circuit voltage	A	B
380 V, 400 V, 415 V, 440 V	220 V, 230 V, 240 V	L3	Neutral terminal
	380 V, 400 V, 415 V, 440 V	L3	L1
	Other voltages	Terminal 1	Terminal 2
Other voltages	Other voltages (600 V max)	For customer assembly	

LE4K06, K09, LE8K06, K09 Connections

Power voltage	Control circuit voltage	A	B
380 V, 400 V, 415 V	220 V, 230 V, 240 V	L3	Neutral
	380 V, 400 V, 415 V	L3	L1
Other voltages	Other voltages (440 V max)	For customer assembly	

TeSys

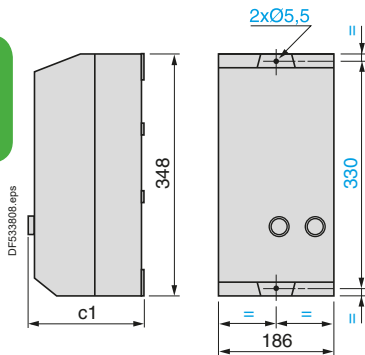
TeSys LE3D enclosed standard starters / Star-delta

Dimensions, schemes

Dimensions

LE3D09...D35

Enclosed starters



	c1
Standard version	175.5
Variant A04	167
Variant A05	175.5

Knock-outs or blanking plugs for cable glands

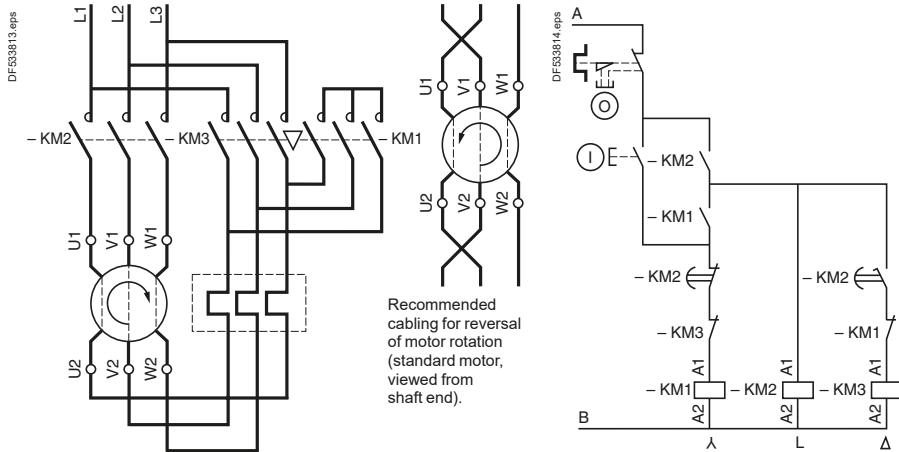
Type of enclosure	At top		At bottom	
	PG	ISO	PG	ISO
LE3D09...D35	–	2 x 20 or 2 x 25 or 2 x 32 or 2 x 40	–	2 x 20 or 2 x 25 or 2 x 32 or 2 x 40

Ref.

Schemes

LE3D09...D35

LE3D09...D35



Note: in accordance with current installation regulations, short-circuit protection must be provided by fuses or a circuit breaker.

Connections

Power voltage	Control circuit voltage	A	B
380 V, 400 V, 415 V, 440 V	220 V, 230 V, 240 V	L3	Neutral terminal
	380 V, 400 V, 415 V, 440 V	L3	L1
	Other voltages	Terminal 1	Terminal 2
Other voltages	All voltages (600 V max)	For customer assembly	

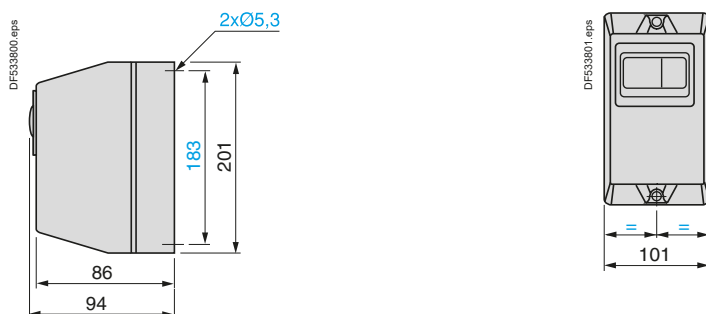
TeSys

TeSys LE1GVMEK enclosures for DOL starters

Dimensions, schemes

Dimensions

LE1GVMEK

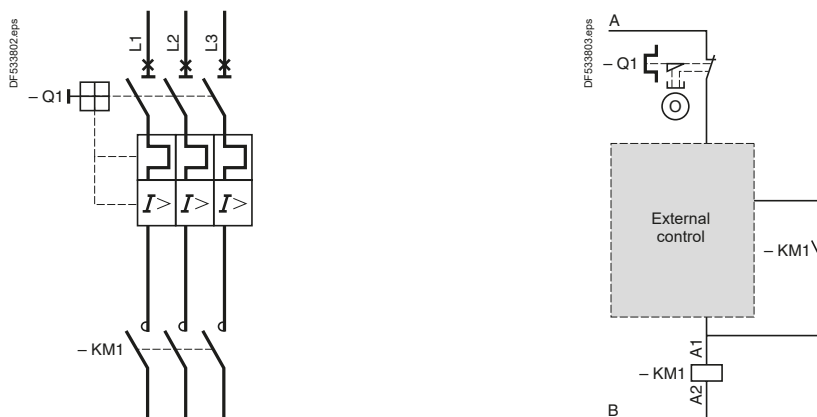


Knock-outs or blanking plugs for cable glands

Enclosure type	At top	At bottom
LE1GV	ISO	ISO
	2 x 20 or 2 x 25	2 x 20 or 2 x 25

Schemes

LE1GVMEK



Connections

Power voltage	Control circuit voltage	A	B
380 V, 400 V, 415 V, 440 V	220 V, 230 V, 240 V	L3	Neutral
	380 V, 400 V, 415 V, 440 V	L3	L1
	Other voltages	For customer assembly	
Other voltages	All voltages (440 V max)	For customer assembly	

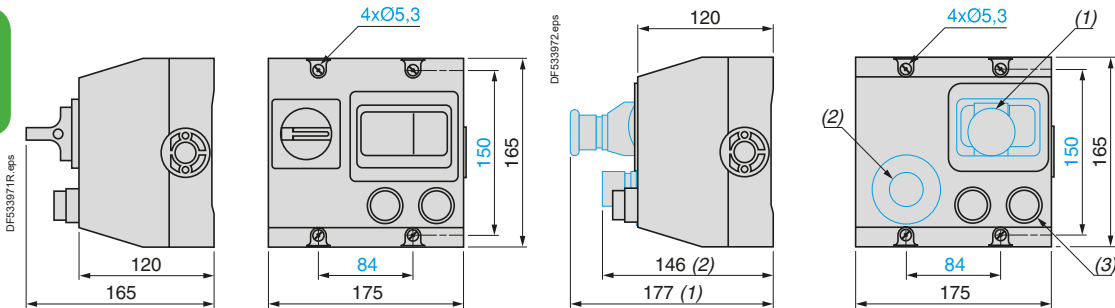
TeSys

TeSys LG1K, LG7K, LG8K, LG1D, LG7D enclosed safety starters / DOL

Dimensions

Dimensions		
LG1K06, K09 LG1D12, D18		LG7K06, K09, LG7D12, D18 LG8K06, K09, K12

Enclosed starters



- (1) Emergency Stop for starters LG●K06.
- (2) Emergency Stop for starters LG●K09, K12, D12 et D18.
- (3) Only for LG7.

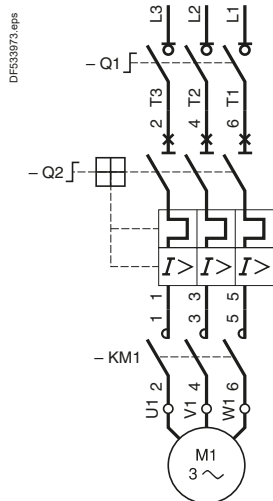
Knock-outs or blanking plugs for cable glands		
Type of enclosure	At top	At bottom
LG1K and LG1D	2 x 13 P and 2 x 16 P	2 x 13 P and 2 x 16 P
LG7K and LG7D	2 x 13 P and 2 x 16 P	2 x 13 P and 2 x 16 P
LG8K	2 x 13 P and 2 x 16 P	2 x 13 P and 2 x 16 P

Ref.



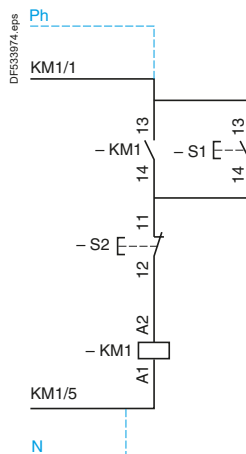
Schemes

LG1K06, K09, D12, D18

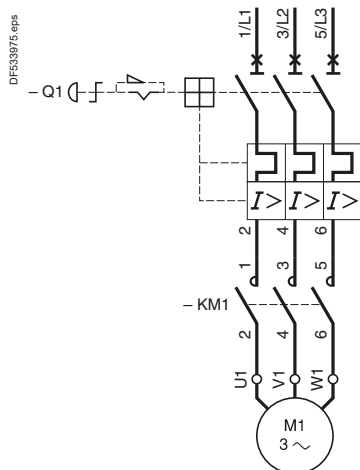


LG1K06, K09, D12, D18

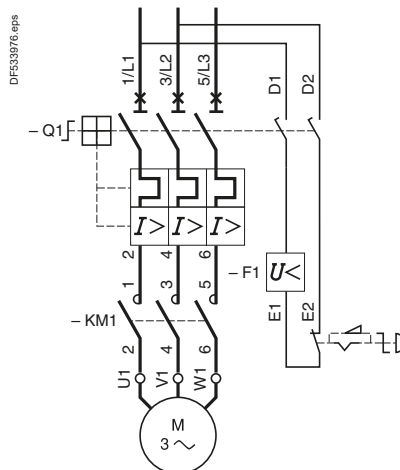
380/400 V, code Q7 or 400/415 V, code N7
220/230 V, code M7



LG7K06

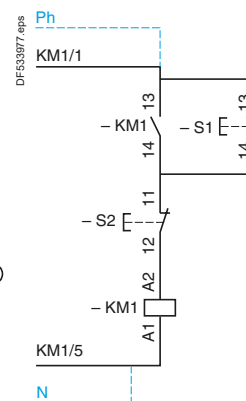


LG7K09, D12, D18

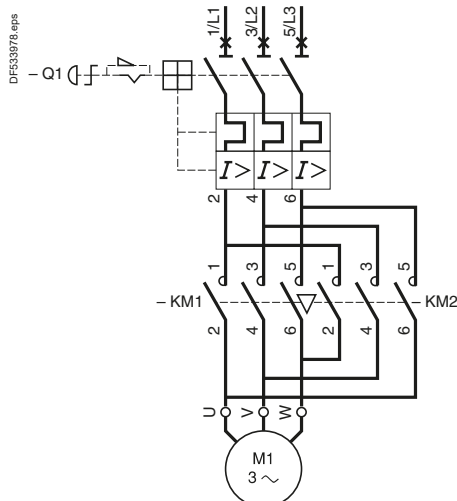


LG7K06, K09, D12, D18

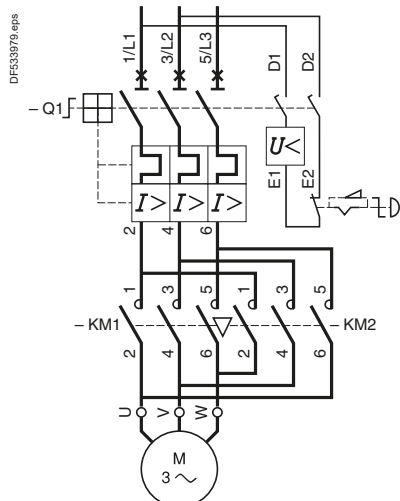
380/400 V, code Q7 or
400/415 V, code N7
220/230 V, code M7



LG8K06

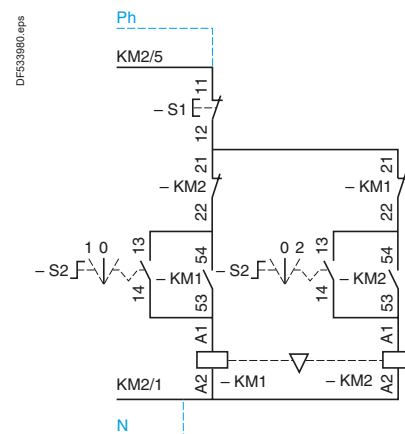


LG8K09, K12



LG8K06, K09, K12

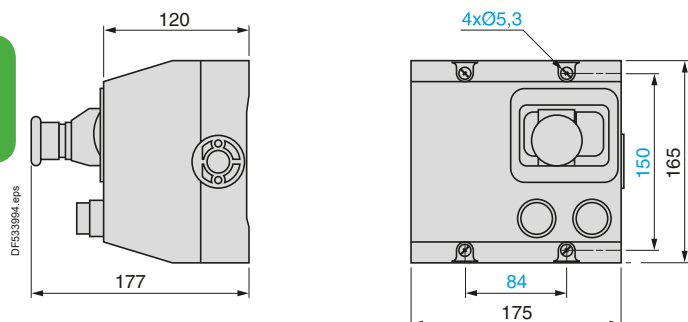
380/400 V, code Q7 or
400/415 V, code N7
220/230 V, code M7



Dimensions

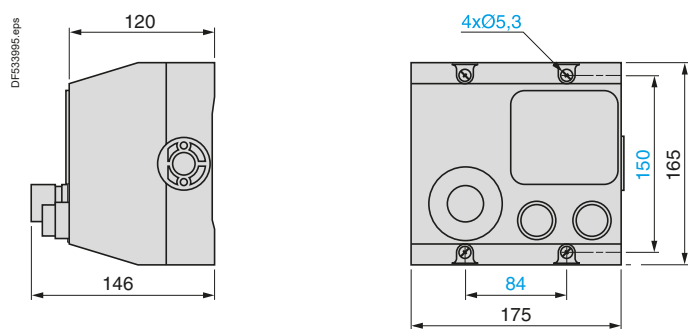
LJ7K06, LJ8K06

Enclosed
starters



LJ7K09, LJ8K09

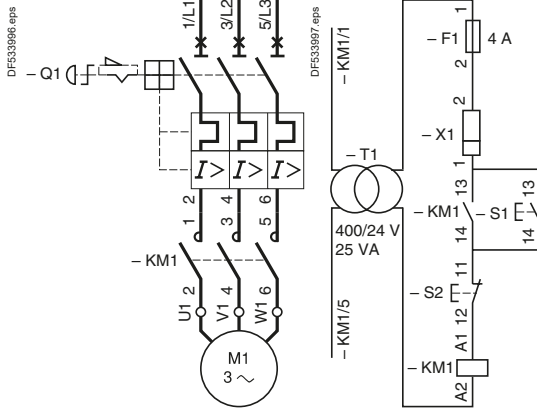
Ref.



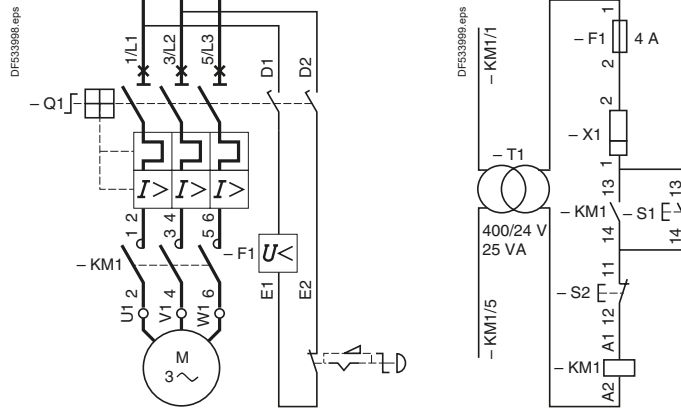
Cut-outs or blanking plugs for cable glands at the top and at the bottom 2 x 13 P and 2 x 16 P.

Schemes

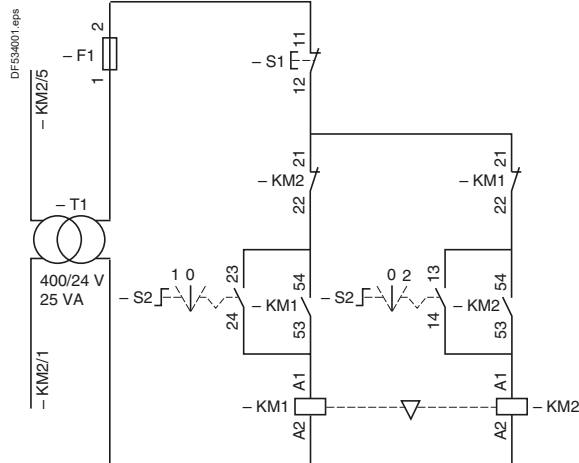
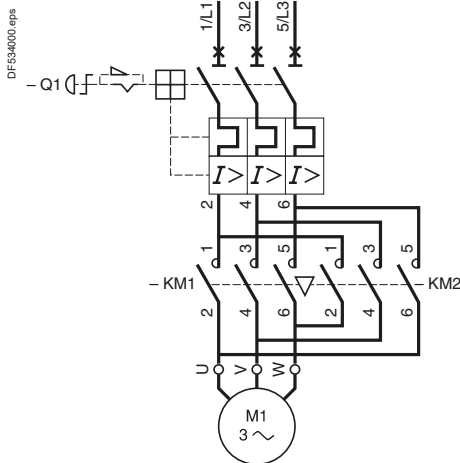
LJ7K06



LJ7K09



LJ8K06



LJ8K09

