

TeSys

Ultra-compact starters



Presentation

A3/2

Ultra-compact 22.5 mm motor starters - TeSys H

Type of product	Range		Page
Ultra compact starters IEC ratings Standard starters, screw or spring terminals, direct-on-line or reverse Safety starters, screw or spring terminals, direct-on-line or reverse	Up to 3 kW AC53a Up to 9 A AC51		A3/6
Ultra compact starters UL ratings Standard starters, screw or spring terminals, direct-on-line or reverse Safety starters, screw or spring terminals, direct-on-line or reverse	Up to 3 hp AC53a Up to 9 A AC51		A3/7
Circuit breakers for a group of starters Selection of magnetic motor circuit breakers GV2L – rotary knob GV2LE – rocker lever	Up to 32 A		A3/8

Technical Data for Designers

A3/9

The most compact 3 KW / 400 V starter in the world

TeSys H



Up to 75 % of space reduction

- Ultra-compact 22.5 mm starter
- Reversing starter in the same width
- Maximum space savings for group starter architecture

Long electrical durability

- Suitable for high demanding application
- 30 000 000 of AC53a electrical cycles

> With printed QR code, referring directly to the product data sheet.

Easy Design

- Wide range setting motor protection
- Automatic, manual or remote reset after thermal trip
- Wide range of control voltage

Easy to integrate

- Direct mounting installation on DIN rail
- Control terminals on the upper side
- Power terminal on the lower side

Standard version

- 2 ratings:
 - 2.4 A 400 V AC53a
 - 6.5 A 400 V AC53a
- 2 control voltages:
 - 24 V DC
 - 110 V / 230 V AC
- 2 terminal types:
 - Screw clamps
 - Spring
- Can provide up to 3 functions:
 - Forward running
 - Reverse running
 - Overload protection



Safety version

- Safe Torque Off embedded:
 - SIL3 according to IEC61 508-1
 - Ple according to ISO1 3849-1
- ATEX:
 - As associated devices for motor protection



TeSys H is a solution dedicated to low footprint applications, in industries as food and beverage, logistics, and durable goods.

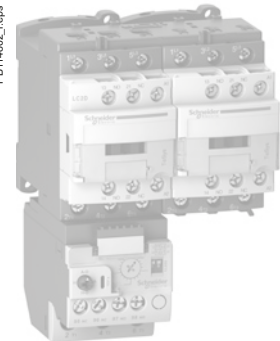


Conventional.....OR.....TeSys H standard solutions

TeSys H



Direct-on-line

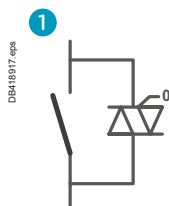


Reverse

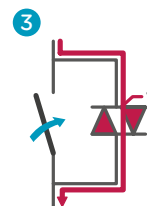


> How does the hybrid technology work ?

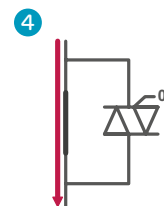
> Closing



Start: conduction through the semiconductor.

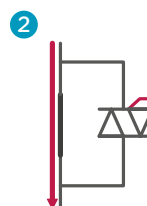
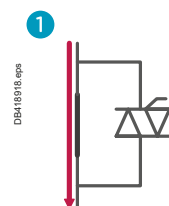


Contact closure under zero voltage. No electrical arc: the contact is preserved.

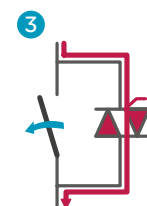


The semiconductor is non-conducting.

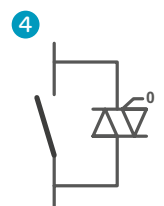
> Opening



Before the opening of the contact the semiconductor is triggered.



Contact opening: - no arc: the contact is preserved.



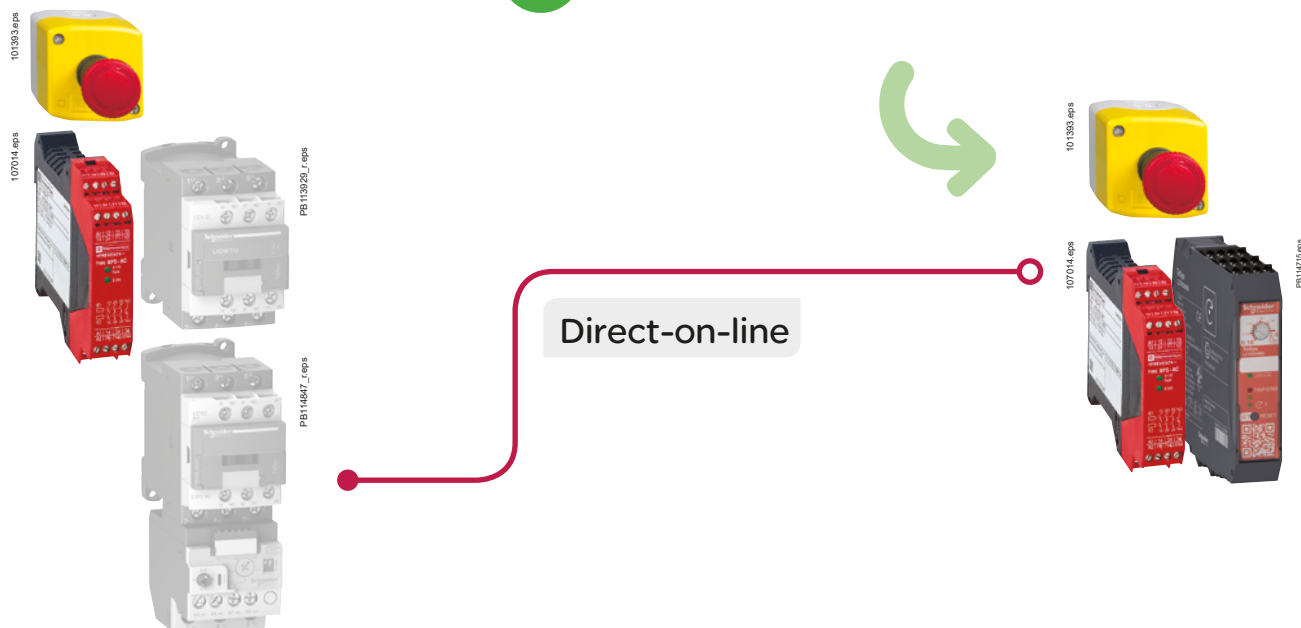
Stop: the semiconductor becomes non-conducting.

Hybrid technology:

Each contact is coupled with a power semiconductor for switching

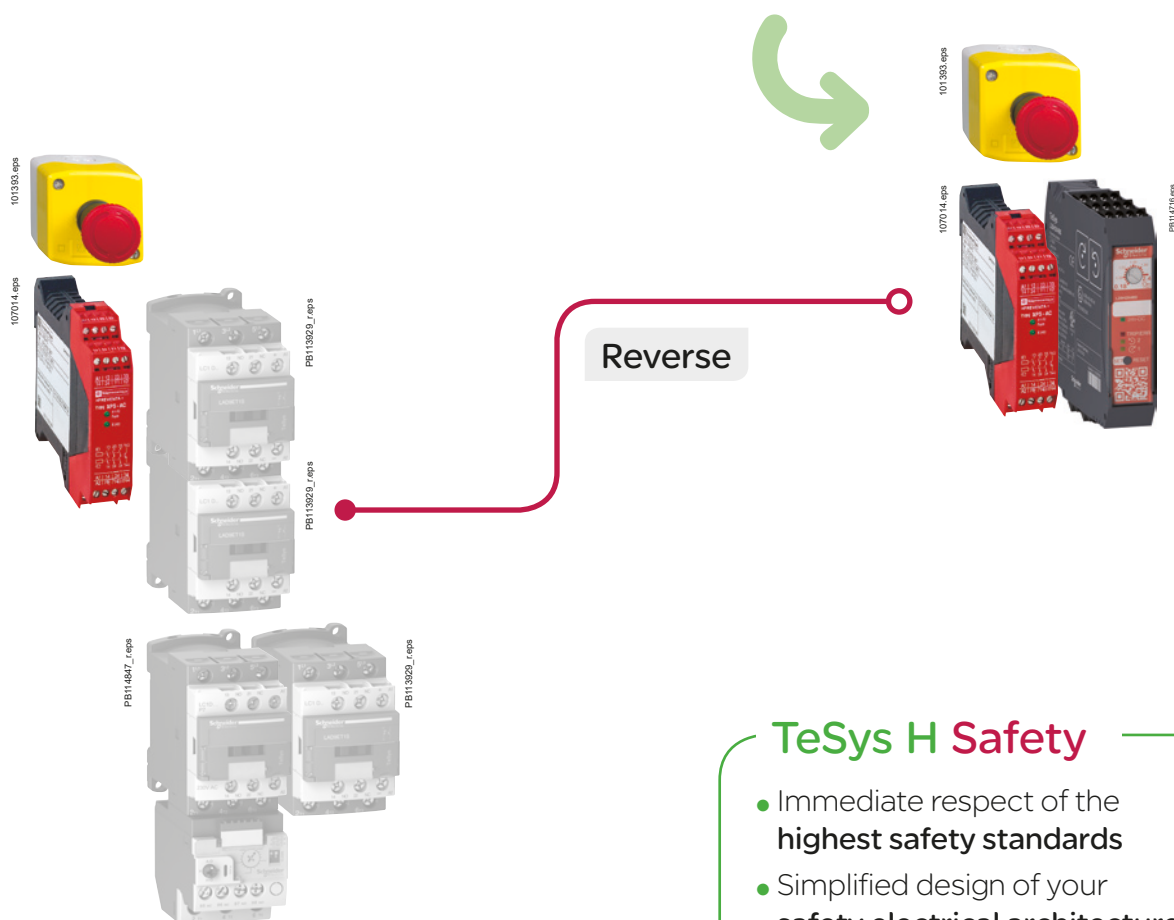
> Higher number of on/off switches, extended durability.

ConventionalOR..... TeSys H safety solutions



Direct-on-line

TeSys H



Reverse

TeSys H Safety

- Immediate respect of the **highest safety standards**
- Simplified design of your **safety electrical architecture**
- **Quicker** panel implementation

References

Ultra-compact starters

TeSys H Standard - TeSys H Safety IEC ratings

Starters for asynchronous motors - AC53a utilization category:



LZ1H2X4BD

Standard starters TeSys H									
Starters	3- phases motor: max power (KW) for various voltage							Current range	Commercial references ⁽¹⁾
	220 V	230 V	380 V	400 V	415 V	440 V	500 V		
Direct-on-line									
Screw terminals	0.37	0.37	0.75	0.75	0.75	0.75	1.1	0.18...2.4	LZ1H2X4●●
	1.5	1.5	2.2	3	3	3	3	1.5...6.5	LZ1H6X5●●
Spring terminals	0.37	0.37	0.75	0.75	0.75	0.75	1.1	0.18...2.4	LZ1H2X43●●
	1.5	1.5	2.2	3	3	3	3	1.5...6.5	LZ1H6X53●●
Reverse									
Screw terminals	0.37	0.37	0.75	0.75	0.75	0.75	1.1	0.18...2.4	LZ2H2X4●●
	1.5	1.5	2.2	3	3	3	3	1.5...6.5	LZ2H6X5●●
Spring terminals	0.37	0.37	0.75	0.75	0.75	0.75	1.1	0.18...2.4	LZ2H2X43●●
	1.5	1.5	2.2	3	3	3	3	1.5...6.5	LZ2H6X53●●

(1) Replace the ●● in the reference by the bobine code: BD (24 V DC) or FU (110-230 V AC).



LZ7H2X4BD

Safety starters TeSys H									
Starters	3- phases motor: max power (KW) for different tensions							Current range	Commercial references ⁽¹⁾
	220 V	230 V	380 V	400 V	415 V	440 V	500 V	A	
Direct-on-line									
Screw terminals	0.37	0.37	0.75	0.75	0.75	0.75	1.1	0.18...2.4	LZ7H2X4●●
	1.5	1.5	2.2	3	3	3	3	1.5...6.5	LZ7H6X5●●
Spring terminals	0.37	0.37	0.75	0.75	0.75	0.75	1.1	0.18...2.4	LZ7H2X43●●
	1.5	1.5	2.2	3	3	3	3	1.5...6.5	LZ7H6X53●●
Reverse									
Screw terminals	0.37	0.37	0.75	0.75	0.75	0.75	1.1	0.18...2.4	LZ8H2X4●●
	1.5	1.5	2.2	3	3	3	3	1.5...6.5	LZ8H6X5●●
Spring terminals	0.37	0.37	0.75	0.75	0.75	0.75	1.1	0.18...2.4	LZ8H2X43●●
	1.5	1.5	2.2	3	3	3	3	1.5...6.5	LZ8H6X53●●

(1) Replace the ●● in the reference by the bobine code: BD (24 V DC) or FU (110-230 V AC).

Starters for resistive load AC51 utilization category:

Starters	Resistive load current A	Application	Commercial references ⁽¹⁾
Screw terminals	2.4	Standard	LZ1H2X4●●
		Safety	LZ7H2X4●●
	9	Standard	LZ1H6X5●●
		Safety	LZ7H6X5●●
Spring terminals	2.4	Standard	LZ1H2X43●●
		Safety	LZ7H2X43●●
	9	Standard	LZ1H6X53●●
		Safety	LZ7H6X53●●

(1) Replace the ●● in the reference by the bobine code: BD (24 V DC) or FU (110-230 V AC).

References

Ultra-compact starters

TeSys H Standard - TeSys H Safety UL ratings

Starters for asynchronous motors - AC53a utilization category:



LZ1H2X4BD

Standard starters TeSys H					
Starters	3- phases motor in HP			Current range	Commercial references ⁽¹⁾
	208 V	220 V - 240 V	440 V - 480 V		
	A				
Direct-on-line					
Screw terminals	1/2	1/2	1	0.18...2.4	LZ1H2X4●●
	1	1.5	3	1.5...6.5	LZ1H6X5●●
Spring terminals	1/2	1/2	1	0.18...2.4	LZ1H2X43●●
	1	1.5	3	1.5...6.5	LZ1H6X53●●
Reverse					
Screw terminals	1/2	1/2	1	0.18...2.4	LZ2H2X4●●
	1	1.5	3	1.5...6.5	LZ2H6X5●●
Spring terminals	1/2	1/2	1	0.18...2.4	LZ2H2X43●●
	1	1.5	3	1.5...6.5	LZ2H6X53●●

⁽¹⁾ Replace the ●● in the reference by the bobine code: BD (24 V DC) or FU (110-230 V AC).



LZ8H2X4BD

Safety starters TeSys H					
Starters	3- phases motor in HP			Current range	Commercial references ⁽¹⁾
	208 V	220 V - 240 V	440 V - 480 V	A	
Direct-on-line					
Screw terminals	1/2	1/2	1	0.18...2.4	LZ7H2X4●●
	1	1.5	3	1.5...6.5	LZ7H6X5●●
Spring terminals	1/2	1/2	1	0.18...2.4	LZ7H2X43●●
	1	1.5	3	1.5...6.5	LZ7H6X53●●
Reverse					
Screw terminals	1/2	1/2	1	0.18...2.4	LZ8H2X4●●
	1	1.5	3	1.5...6.5	LZ8H6X5●●
Spring terminals	1/2	1/2	1	0.18...2.4	LZ8H2X43●●
	1	1.5	3	1.5...6.5	LZ8H6X53●●

⁽¹⁾ Replace the ●● in the reference by the bobine code: BD (24 V DC) or FU (110-230 V AC).

Starters for resistive load

AC51 utilization category:

Starters	Resistive load current A	Application	Commercial references ⁽¹⁾
Screw terminals	2.4	Standard	LZ1H2X4●●
		Safety	LZ7H2X4●●
	9	Standard	LZ1H6X5●●
		Safety	LZ7H6X5●●
Spring terminals	2.4	Standard	LZ1H2X43●●
		Safety	LZ7H2X43●●
	9	Standard	LZ1H6X53●●
		Safety	LZ7H6X53●●

⁽¹⁾ Replace the ●● in the reference by the bobine code: BD (24 V DC) or FU (110-230 V AC).

Ultra-compact starters

Circuit breaker selection for a group of starters



Magnetic motor circuit breakers:
■ GV2L: rotary knob type - Ue = 500 V
■ GV2LE: rocker lever type - Ue = 415 V.

Selection of the circuit breaker Type 1 coordination according to IEC/EN 60947-4-2					
Max	Iq	Number of TeSys H		Reference Circuit breaker	
		2.4 A	6.5 A	Rotary	Rocker
A	kA				
0.4	50.0	1	—	GV2L03	GV2LE03
0.63	50.0	1	—	GV2L04	GV2LE04
1	50.0	1	1	GV2L05	GV2LE05
1.6	50.0	1	1	GV2L06	GV2LE06
2.5	35.0	1	1	GV2L07	GV2LE07
4	12.5	1	1	GV2L08	GV2LE08
6.3	8.0	2	1	GV2L10	GV2LE10
10	7.0	4	1	GV2L14	GV2LE14
14	5.0	5	2	GV2L16	GV2LE16
18	4.0	7	2	GV2L20	GV2LE20
25	4.0	10	3	GV2L22	GV2LE22
32	3.0	13	4	GV2L32	GV2LE32