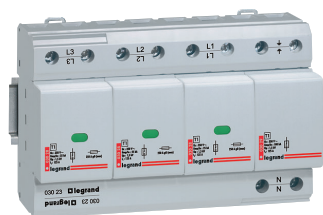


## Voltage surge protectors low voltage type 1 (class I / B)



0 030 23



0 030 28

Technical characteristics and dimensions [see e-catalogue](#)

Type 1 voltage surge protectors (V.S.P) for main distribution boards  
 Conform to standards IEC 61643-1 and EN 61643-11  
 3 different impulse discharge ratings  
 For 230/400 V $\sim$  - 50/60 Hz networks  
 Especially for use in installations at very high risk and/or with external lightning protection of the building

Pack	Cat.Nos	Main board protection																														
1	0 030 00	<p><b>High lightning protection - H - Iimp = 50 kA</b>            For power installations            Earthing system: TT, TN, IT            No plug-in module</p> <table border="1"> <thead> <tr> <th>Number of poles</th> <th>Corresponding protection</th> <th>Number of modules</th> </tr> </thead> <tbody> <tr> <td>1P</td> <td>gG type - max. 250 A</td> <td>2</td> </tr> </tbody> </table> <p><b>Increased lightning protection - E - Iimp = 25 kA</b>            For power installations            Consist of a base and a plug-in replacement module provided with a status indicator            • Green: surge protector operational            • Red: module needs replacing            Fitted with built-in thermal protection            Equipped with auxiliary contacts for remote monitoring            Reversible product, allowing connexion from the top or bottom</p> <table border="1"> <thead> <tr> <th>Number of poles</th> <th>Corresponding protection</th> <th>Number of modules</th> </tr> </thead> <tbody> <tr> <td>3P</td> <td>gG type - max. 250 A</td> <td>6</td> </tr> <tr> <td>TNC earthing system</td> <td></td> <td></td> </tr> <tr> <td>4P</td> <td>gG type - max. 250 A</td> <td>8</td> </tr> <tr> <td>TT, TNS earthing system</td> <td></td> <td></td> </tr> </tbody> </table> <p><b>Standard lightning protection - S - Iimp = 12.5 kA</b>            For all types of installations            Equipped with status indicator:            • Green: surge protector operational            • Orange: needs replacing            No plug-in module</p> <table border="1"> <thead> <tr> <th>Number of poles</th> <th>Corresponding protection</th> <th>Number of modules</th> </tr> </thead> <tbody> <tr> <td>1P</td> <td>40 A - C curve</td> <td>2</td> </tr> <tr> <td>TT, TN, IT earthing system</td> <td></td> <td></td> </tr> </tbody> </table>	Number of poles	Corresponding protection	Number of modules	1P	gG type - max. 250 A	2	Number of poles	Corresponding protection	Number of modules	3P	gG type - max. 250 A	6	TNC earthing system			4P	gG type - max. 250 A	8	TT, TNS earthing system			Number of poles	Corresponding protection	Number of modules	1P	40 A - C curve	2	TT, TN, IT earthing system		
Number of poles	Corresponding protection	Number of modules																														
1P	gG type - max. 250 A	2																														
Number of poles	Corresponding protection	Number of modules																														
3P	gG type - max. 250 A	6																														
TNC earthing system																																
4P	gG type - max. 250 A	8																														
TT, TNS earthing system																																
Number of poles	Corresponding protection	Number of modules																														
1P	40 A - C curve	2																														
TT, TN, IT earthing system																																
1	0 030 22																															
1	0 030 23																															
1	0 039 10 <sup>1</sup>																															
1	0 030 28	Replacement modules for type 1 V.S.P. For V.S.P. Cat.Nos 0 030 20/22/23																														
1	0 030 29	For V.S.P. Cat.No 0 039 23 (N-PE module)																														

1: Corresponding protection: DX and DX<sup>3</sup> MCBs or equivalent ranges according to required breaking capacity

## Voltage surge protectors low voltage type 2 (class II / C)



0 039 21

Technical characteristics and dimensions [see e-catalogue](#)

Type 2 voltage surge protectors (V.S.P) for main boards, distribution boards and consumer units  
 Conform to standards IEC 61643-1 and EN 61643-11  
 3 different impulse discharge ratings  
 For 230/400 V $\sim$  - 50/60 Hz networks

Pack	Cat.Nos	Main board protection															
1	0 039 20 <sup>1</sup>	<p><b>High protection - H - Class I + II I<sub>max</sub> = 70 kA</b>            Earthing systems: TT, TN, IT            Consist of a base and a plug-in replacement module provided with a status indicator            • Green: surge protector operational            • Orange: module needs replacing            Can be equipped with auxiliary contacts for remote monitoring purpose (p. 23)</p> <table border="1"> <thead> <tr> <th>Number of poles</th> <th>Corresponding protection</th> <th>Number of modules</th> </tr> </thead> <tbody> <tr> <td>1P</td> <td>40A - C curve</td> <td>1</td> </tr> <tr> <td>2P</td> <td>40A - C curve</td> <td>2</td> </tr> <tr> <td>3P</td> <td>40A - C curve</td> <td>3</td> </tr> <tr> <td>4P</td> <td>40A - C curve</td> <td>4</td> </tr> </tbody> </table>	Number of poles	Corresponding protection	Number of modules	1P	40A - C curve	1	2P	40A - C curve	2	3P	40A - C curve	3	4P	40A - C curve	4
Number of poles	Corresponding protection	Number of modules															
1P	40A - C curve	1															
2P	40A - C curve	2															
3P	40A - C curve	3															
4P	40A - C curve	4															
1	0 039 21 <sup>1</sup>																
1	0 039 22 <sup>1</sup>																
1	0 039 23 <sup>1</sup>																
		<b>Distribution board protection</b>															
		For electrical equipments located at more than 10 m from the main distribution board Consist of a base and a plug-in replacement module provided with a status indicator • Green: surge protector operational • Orange: module needs replacing Can be equipped with auxiliary contacts for remote monitoring purpose (p. 23)															
		<b>Increased protection - E - Class II - I<sub>max</sub> = 40 kA</b> Earthing systems: TT, TN, IT															
1	0 039 30 <sup>1</sup>	<table border="1"> <thead> <tr> <th>Number of poles</th> <th>Corresponding protection</th> <th>Number of modules</th> </tr> </thead> <tbody> <tr> <td>1P</td> <td>20A - C curve</td> <td>1</td> </tr> <tr> <td>2P</td> <td>20A - C curve</td> <td>2</td> </tr> <tr> <td>3P</td> <td>20A - C curve</td> <td>3</td> </tr> <tr> <td>4P</td> <td>20A - C curve</td> <td>4</td> </tr> </tbody> </table>	Number of poles	Corresponding protection	Number of modules	1P	20A - C curve	1	2P	20A - C curve	2	3P	20A - C curve	3	4P	20A - C curve	4
Number of poles	Corresponding protection	Number of modules															
1P	20A - C curve	1															
2P	20A - C curve	2															
3P	20A - C curve	3															
4P	20A - C curve	4															
1	0 039 31 <sup>1</sup>																
1	0 039 32 <sup>1</sup>																
1	0 039 33 <sup>1</sup>																
		<b>Increased protection - S - Class II - I<sub>max</sub> = 15 kA</b> Earthing systems: TT, TN															
1	0 039 40 <sup>1</sup>	<table border="1"> <thead> <tr> <th>Number of poles</th> <th>Corresponding protection</th> <th>Number of modules</th> </tr> </thead> <tbody> <tr> <td>1P</td> <td>20A - C curve</td> <td>1</td> </tr> <tr> <td>2P</td> <td>20A - C curve</td> <td>2</td> </tr> <tr> <td>4P</td> <td>20A - C curve</td> <td>4</td> </tr> </tbody> </table>	Number of poles	Corresponding protection	Number of modules	1P	20A - C curve	1	2P	20A - C curve	2	4P	20A - C curve	4			
Number of poles	Corresponding protection	Number of modules															
1P	20A - C curve	1															
2P	20A - C curve	2															
4P	20A - C curve	4															
1	0 039 41 <sup>1</sup>																
1	0 039 43 <sup>1</sup>																
		<b>Replacement modules for type 2 V.S.P.</b>															
5	0 039 28	For V.S.P. Cat.Nos 0 039 20/21/22/23															
5	0 039 34	For V.S.P. Cat.Nos 0 039 30/31/32/33															
5	0 039 44	For V.S.P. Cat.Nos 0 039 40/41/43															
5	0 039 39	For V.S.P. Cat.Nos 0 039 35/36/38 (old model voltage surge protector)															

1: Corresponding protection: DX and DX<sup>3</sup> MCBs or equivalent ranges according to required breaking capacity

Voltage Surge protector type 2 (Uc 320 VA) - 40 kA, **Please, consult us**

## Voltage surge protectors for telephone lines and accessories for low voltage V.S.P.



0 038 28

Technical characteristics and dimensions **see e-catalogue**

Pack	Cat.Nos	Voltage surge protector for telephone and data lines	Un (V)	Up (V)
		Recommended for complete protection of installations already equipped with low voltage V.S.P. on power lines (standard IEC 60364) For protection of: telephone, fax, modem, etc., connected to the incoming telephone line, against overvoltages of atmospheric origin Installed in a distribution cabinet, especially the ELV/signal cabinet Cat.No 0 011 95 (please consult us), or terminal shield boxes 1 module (please consult us) Connected in series with the telephone line Provided with a status indicator • green: surge protector operational • orange: surge protector needs replacing Conform to standards EN 61643-21 and IEC 61643-21 Imax: 10 kA and In: 5 kA (8/20)		
1	0 038 28	Analogue (RTC and ADSL)	170	260
1	0 038 29	Digital (signal lines, current loops)	48	100
		<b>Signalling auxiliaries for low voltage V.S.P.</b> With changeover microswitch 2 A - 250 V~ Mounted on the backside of the surge protector (except Cat.No 0 039 10) For 2-pole module V.S.P. For 3-pole module V.S.P. For 4-pole module V.S.P.		
1	0 039 56	For 2-pole module V.S.P.		
1	0 039 57	For 3-pole module V.S.P.		
1	0 039 58	For 4-pole module V.S.P.		
		<b>Decoupling inductors</b> Enable coordination between 2 V.S.P. in the same board, when minimum distance to insure proper V.S.P. coordination can not be respected For multipole voltage surge protectors, each conductor (including the neutral conductor) must be equipped with one decoupling inductor		
				Number of modules
1	0 039 62	Module for circuit 35 A - 500 V~		2
1	0 039 63	Module for circuit 63 A - 500 V~		4

## Voltage surge protectors

### Protection against lightning effects

Lightning directly or indirectly generates the following effects:

- thermal (blow-outs, fire)
- electrodynamic (loosening of terminals)
- rise in earth voltage (risk of electrocution)
- overvoltages of several thousand volts and destructive induced currents (damage to electrical and electronic equipment, interruption of operation)

Protection against the effects of lightning is based essentially on:

- catching and discharging the current to earth
- the use of voltage surge protectors
- the passive protection of the installation

Passive protection (poor, good) designates the part of the protection provided by the structure and the configuration of the installation itself (neutral earthing system, area, level of equipotentiality, etc.)

### Voltage surge protectors and regulation

Voltage surge protector enable:

- protect sensitive devices against direct and indirect effects of lightning
- to limit harmful consequences on person security
- to insure the continuity of work

### 1 - Product standards EN 61643-11 and IEC 61643-1

Voltage surge protectors are mainly classified in two levels (types):

EN 61643-11	Type 1 (T1)	Type 2 (T2)
IEC 61643-1	Class I (T1)	Class II (T2)
VDE 0675-6 <sup>(1)</sup>	Class B	Class C
Type of wave	10/350 µs	8/20 µs
Main characteristics	limp (10/350) In (8/20)	In, Imax

1: German standard VDE replaced by European standard EN 61643-11

The V.S.P. Cat.No 0 039 20/21/22/23 are classified in both levels, also called T1+T2 or B+C

### 2 - Installation standards: IEC 60364 (or equivalent electric national standards)

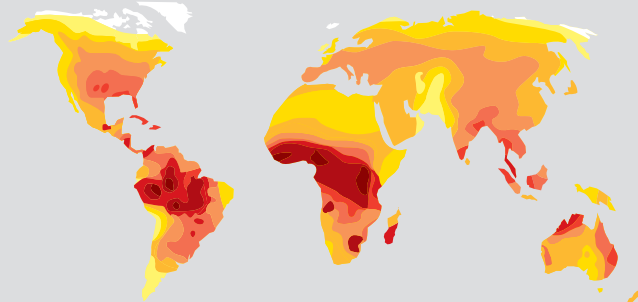
According to articles 443 and 534, the use of VSPs is required in new or renovated buildings in the following cases:

- buildings equipped with lightning conductors: type 1 VSPs with  $I_n \geq 12.5$  kA
- buildings with overhead power supply in class AQ2 geographic zones (see map below: red zones): type 2 VSPs with  $I_n \geq 5$  kA
- buildings with medical services or equipped with safety systems (fire, etc.) in class AQ2 geographic zones: type 2 VSPs with  $I_n \geq 5$  kA

The use of VSPs is also strongly recommended in mountain areas, close to reaches of water or dominating structures (buildings, trees, etc.), in the cases of line end installations or installations located less than 50 m from buildings equipped with lightning conductors<sup>(2)</sup>  
When VSPs are present on the power circuit, it is strongly advised to install a VSP on the communication circuits (telephone or data lines...)

2: Lightning conductors: external protection of buildings against direct lightning impacts

### Choice of the level lightning protection



The annual average of stormy days (Nk)

0 - 1
2 - 4
5 - 9
10 - 19
20 - 39
40 - 59
60 - 79
80 - 99
100 - 139
140 - 200 +

AQ2 areas :  $N_k > 25$   
IEC 60364 : V.S.P. mandatory for installations supplied with overhead low voltage lines and located in AQ2 areas

# Voltage surge protectors

## technical characteristics

### ■ Technical characteristics

#### Voltage surge protectors for power lines

Networks: 230/400 V~ - 50/60 Hz

Degree of protection: IP 20

Operating temperature: -10° C to +40° C

Storage temperature: -20° C to +70° C

Type 1 V.S.P. (class I)	High lightning protection H	Increased lightning protection E		Standard lightning protection S	
Cat.Nos	0030 00	0030 22	0030 23	0039 10	
Neutral earthing system	TT - TN - IT	TNC	TT - TNS	TT - TN - IT	
Max. steady state voltage (Uc)	440 V~	350 V~		440 V~	
Max. discharge current	L(N)-PE	L-PEN	L-N / N-PE	L(N)-PE	
	Iimp (10/350)	50 kA	25 kA	25/100 kA	12.5 kA
	Itotal (10/350)	-	75 kA	100 kA	-
Nominal discharge current	In (8/20)	50 kA	25 kA	25/100 kA	20 kA
		1.5 kV	1.5 kV	1.8 kV	
Protection level (Up)					
Associated protection	gG 250 A max.	gG 250 A max.		40 A C curve	
Max. terminal capacity	rigid conductor	35 mm <sup>2</sup>	25 mm <sup>2</sup>	18 mm <sup>2</sup>	
		flexible conductor	50 mm <sup>2</sup>	35 mm <sup>2</sup>	25 mm <sup>2</sup>

Type 2 V.S.P. (class II)	High protection (H)	Increased protection (I)	Standard protection (S)	
Cat.Nos	0039 20/21/22/23	0039 30/31/32/33	0039 40/41/43	
Neutral earthing system	TT - TN - IT	TT - TN - IT	TT - TN	
Max. steady state voltage (Uc)	440 V~	440 V~	320 V~	
Max. discharge current	Iimp (10/350)	10 kA	-	-
	Imax (8/20)	70 kA	40 kA	15 kA
Nominal discharge current	In (8/20)	20 kA	15 kA	5 kA
		at In	2 kV; 20 kA	1.8 kV; 15 kA
Protection level (Up)	at In	1.5 kV; 5 kA	1.3 kV; 5 kA	1.2 kV; 5 kA
U <sub>T</sub>	440 V	440 V	440 V	
Associated protection DX, DX-H, DX-L C curve	40 A	20 A	20 A	
Max. terminal capacity	rigid conductor	25 mm <sup>2</sup>	25 mm <sup>2</sup>	25 mm <sup>2</sup>
		flexible conductor	16 mm <sup>2</sup>	16 mm <sup>2</sup>

#### Voltage surge protectors for telephone lines

Degree of protection: IP 20

Operating temperature: -10° C to +40° C

Storage temperature: -20° C to +70° C

	Analog 0038 28	Digital 0038 29
Minimum voltage (Un)	170 V	48 V
Protection level (Up)	260 V	100 V
Nominal current (In)	5 kA	
Max. terminal capacity flexible/rigid	0.5 to 2.5 mm <sup>2</sup>	

### ■ Installation

#### Voltage surge protectors cascading (multi-level protection)

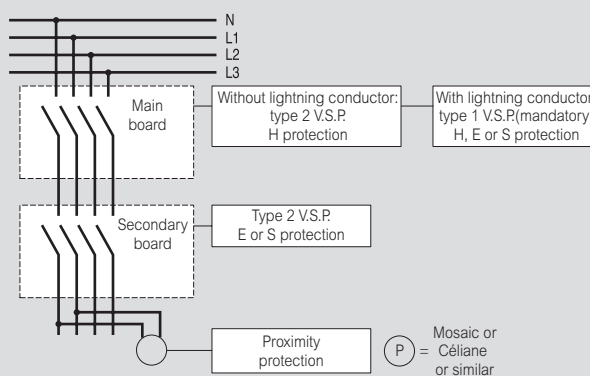
Beyond the standards requirements:

- the cost of the consequences of equipment unavailability,
  - the nature of the equipment to be protected (IT, electronics, etc.),
  - the situation of the buildings (proximity or not of a building equipped with a lightning conductor),
  - the power supply network...,
- are all situations that justify the installation of VSPs.

However, the efficiency of protection against overvoltages cannot be optimally ensured with a single VSP.

This is why Legrand recommends combining several VSPs in cascade with different protection levels, from the first panel as far as the device to be protected (proximity protection of sensitive devices).

An installation will be all the more efficient if, beyond Class I and II VSPs, it comprises proximity VSPs (Class III) on sockets supplying sensitive devices (IT, electronic, etc.).



#### Associated protection

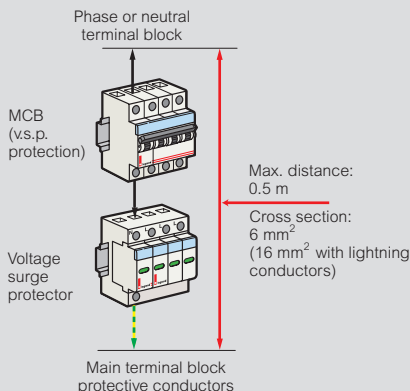
The supply circuit of the VSP must be protected against short-circuits and overloads by its associated disconnector (MCB) in accordance with discrimination rules.

TT earthing systems, and V.S.P.: V.S.P. always installed downstream a residual current device (RCD) (V.S.P. Cat.No 0030 23 can be installed upstream RCDs if allowed by local regulations)

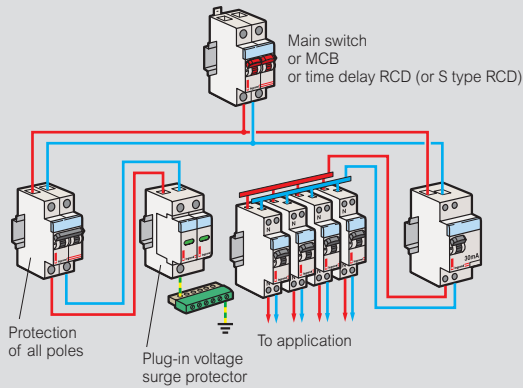
#### Connection principles

For the voltage surge protector to perform its function as well as possible, it must be installed:

- in parallel
- keeping as short a connection length as possible between the phase-neutral terminal block and the PE or PEN terminal block
- in accordance with EMC (electromagnetic compatibility) rules: avoid the loops of conductors, fix the cables against metal conductive parts



### Connection principles (continued)



### Recommended cross-sections for conductors linking voltage surge protectors

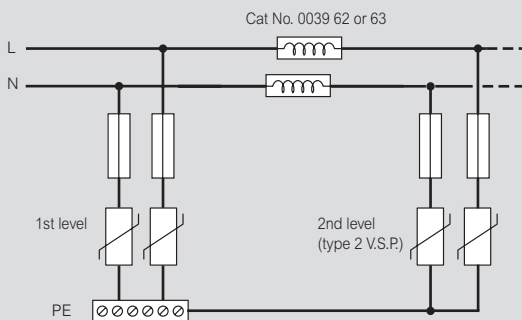
Type 2 V.S.P.	Cross section mm <sup>2</sup>	Type 1 V.S.P.	Cross section mm <sup>2</sup>
H level	16	H level	16
E level	10	E level	16
S level	6	S level	16

### Minimum distances between voltage surge protectors

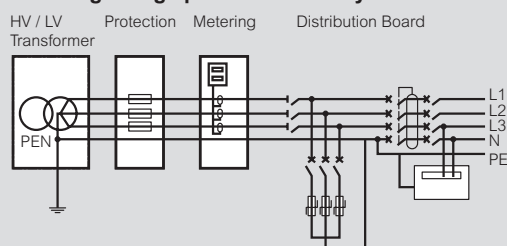
	Upstream V.S.P.		Downstream V.S.P.		Distance (m)
S level	type 1	E (S)	type 2		8 (10)
H level	type 2	S (P)	type 2		8 (10)
E level	type 2	S (P)	type 2		4 (6)
S level	type 2	P	type 2		2

### Installation of V.S.P. in the same board with decoupling inductors

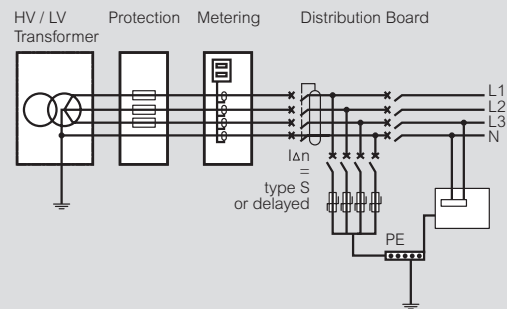
When distances cannot be respected please use decoupling inductors (see Cat.Nos p. 65, installed as follows)



### 1 - Voltage surge protector in TN system

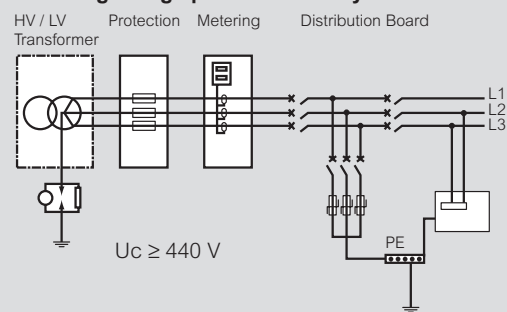


### 2 - Voltage surge protector in TT system



V.S.P. Cat.No 0030 23 can be installed upstream the RCD if allowed by local regulations

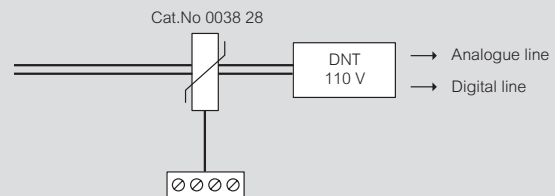
### 3 - Voltage surge protector in IT system



### Installation for telephone lines

#### Protection of a telephone line

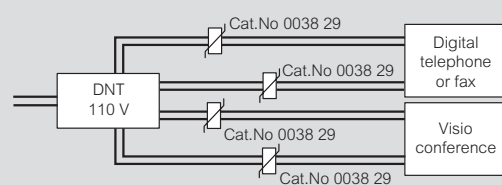
- Upstream the communication distribution box



- Downstream the communication distribution box
- Analogue or digital

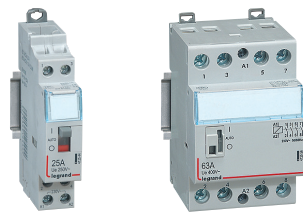


- Digital



## Power contactors with handle CX<sup>3</sup>

from 16 A to 63 A



4 125 44

4 125 56

Dimensions **see e-catalogue**  
 Technical characteristics **see p. 27**

Conform to IEC/EN 61095  
 Space for power supply busbar on top (up to 25 A)

Pack	Cat.Nos	Low noise power contactors with 230 V $\sim$ coil and handle			
		<b>2-pole - 250 V<math>\sim</math></b>			
1	4 125 58	I max 25 A		Type of contact 2 N/O	Number of modules 1
1	4 125 59 <sup>1</sup>	40 A		2 N/O	2
1	4 125 60 <sup>1</sup>	63 A		2 N/O	2
		<b>4-pole - 400 V<math>\sim</math></b>			
1	4 125 61	25 A		4 N/O	1
1	4 125 62 <sup>1</sup>	40 A		4 N/O	2
1	4 125 63 <sup>1</sup>	63 A		4 N/O	2
		<b>Power contactors with 230 V<math>\sim</math> coil and handle</b>			
		Manual override for test and repair function, carried out via the handle Permanent "ON" or "OFF" without automatic closing of the contactor			
		<b>2-pole - 250 V<math>\sim</math></b>			
4	4 125 44	I max 25 A		Type of contact 2 N/O	Number of modules 1
1	4 125 45 <sup>1</sup>	40 A		2 N/O	2
1	4 125 47 <sup>1</sup>	63 A		2 N/O	2
1	4 125 48 <sup>1</sup>	63 A		2 N/C	2
		<b>3-pole - 400 V<math>\sim</math></b>			
1	4 125 49 <sup>1</sup>	40 A		3 N/O	3
1	4 125 50 <sup>1</sup>	63 A		3 N/O	3
		<b>4-pole - 400 V<math>\sim</math></b>			
2	4 125 51	25 A		4 N/O	2
1	4 125 53 <sup>1</sup>	40 A		4 N/O	3
1	4 125 56 <sup>1</sup>	63 A		4 N/O	3
1	4 125 57 <sup>1</sup>	63 A		4 N/C	3

1: Handle can be accessed after removing blanking plate

## Power contactors without handle CX<sup>3</sup> and Auxiliaries for contactors CX<sup>3</sup>



4 124 29

4 124 31

Dimensions **see e-catalogue**  
 Technical characteristics **see p. 27**

Conform to IEC/EN 61095  
 Space for power supply busbar on top (up to 25 A)

Pack	Cat.Nos	Power contactors with 230 V $\sim$ coil			
		<b>2-pole - 250 V<math>\sim</math></b>			
4	4 125 21	I max 16 A		Type of contact N/C + N/O	Number of modules 1
10	4 125 23	25 A		2 N/O	1
1	4 125 27	63 A		2 N/O	2
1	4 125 24	25 A		2 N/C	1
		<b>4-pole - 400 V<math>\sim</math></b>			
5	4 125 35	25 A		4 N/O	2
1	4 125 41	63 A		4 N/O	3
1	4 125 36	25 A		4 N/C	2
1	4 125 33	25 A		2 N/C + 2 N/O	2
		<b>Signalling auxiliaries for contactors</b>			
		Auxiliary changeover switch for all CX <sup>3</sup> contactors Used to signal the position status of the contacts on the product to which it is connected			
		<b>For 1 module contactors 16 A to 25 A</b>			
		Maximum 2 auxiliary devices per contactor Fitted on left-hand side of contactor			
1	4 124 29	I max 5 A	Voltage 250 V $\sim$	Contact N/C + N/O	Number of modules 0.5
		<b>For 2 module contactors 25 A</b>			
		Maximum 2 auxiliary devices per contactor Fitted on left-hand side of contactor			
1	4 124 30	5 A	250 V $\sim$	N/C + N/O	0.5
		<b>For 40 and 63 A contactors</b>			
		Maximum 1 auxiliary device per contactor Fitted on left-hand side of contactor			
1	4 124 31	5 A	250 V $\sim$	N/C + N/O	0.5

For detailed dimensions,  
**see e-catalogue**



# Power contactors CX<sup>3</sup>

## Technical characteristics

- Rated impulse withstand voltage (Uimp): 4 kV
- Mechanical endurance (no. of operating cycles): 10<sup>6</sup> cycles
- Operating temperatures: - 25 °C to + 40 °C
- Storage temperatures: - 40 °C to + 70 °C

### Contactor protection against short circuits according to standard EN 61095, conditional short-circuit current:

- I<sub>q</sub> = 6 kA for 16 to 25 A contactors

- I<sub>q</sub> = 3 kA for 40 to 63 A contactors

Circuit breaker or gG fuse rated:

- ≤ 16 A for 16 A rating
- ≤ 25 A for 25 A rating
- ≤ 40 A for 40 A rating
- ≤ 63 A for 63 A rating

### Consumption of a contactor control coil

16 A and 25 A power contactors					
Coil voltage	24 V <sub>~</sub>		230 V <sub>~</sub> low noise	230 V <sub>~</sub>	
Current	16 A and 25 A	25 A	25 A	16 A and 25 A	16 A and 25 A
Type of contact	NC + NO 2 NO	4 NO	2 NO	NC + NO 2 NO 2 NC	2 NC + 2 NO 4 NO 4 NC
Dimensions	1 mod.	2 mod.	1 mod.	1 mod.	2 mod.
Holding current	200 mA	300 mA	12 mA	20 mA	20 mA
Inrush current	970 mA	2500 mA	60 mA	90 mA	200 mA

40 A and 63 A power contactors				
Coil voltage	24 V <sub>~</sub>		230 V <sub>~</sub>	
Current	40 A and 63 A	40 A and 63 A	40 A and 63 A	40 A and 63 A
Type of contact	2 NO	4 NO	2 NO 2 NC	3 NO 4 NO 4 NC
Dimensions	2 mod.	3 mod.	2 mod.	3 mod.
Holding current	250 mA	270 mA	15 mA	30 mA
Inrush current	1750 mA	1500 mA	150 mA	200 mA

### Recommendations

Insert a spacing module (Cat.No 4 063 07 p. 61):

- every two contactors when the ambient temperature is below 40 °C

- every contactor when the ambient temperature is between 40 and 60 °C

Contactor rating	40 °C	50 °C	60 °C
I <sub>e</sub> = 16 A	16 A	14 A	12 A
I <sub>e</sub> = 25 A	25 A	22 A	20 A
I <sub>e</sub> = 40 A	40 A	36 A	32 A
I <sub>e</sub> = 63 A	63 A	57 A	50 A

### Max. connection cross-section in mm<sup>2</sup>

Conductor type	Ratings ≤ 25 A	Ratings 40 & 63 A
Rigid	6 <sup>2</sup> or 2 x 2,5 <sup>2</sup>	25 <sup>2</sup> or 2 x 10 <sup>2</sup>
Flexible	6 <sup>2</sup> or 2 x 2,5 <sup>2</sup>	25 <sup>2</sup> or 2 x 10 <sup>2</sup>
Flexible with single end cap	6 <sup>2</sup>	16 <sup>2</sup>
Flexible with double end cap	2 x 4 <sup>2</sup>	2 x 16 <sup>2</sup>

## Contactor selection charts

### Incandescent lamps

Tungsten and halogen filaments 230 V <sub>~</sub>								
Nominal wattage	40 W	60 W	75 W	100 W	150 W	200 W	500 W	1000 W
16 A	45	30	24	19	13	10	4	2
25 A	60	48	38	30	20	15	6	3
40 A	96	77	61	48	32	24	10	5
63 A	154	123	97	77	51	38	15	8

Nominal wattage	ELV halogen bulbs with ferromagnetic ballast						ELV halogen bulbs with electronic ballast					
	20 W	35 W	50 W	75 W	100 W	150 W	20 W	35 W	50 W	75 W	100 W	150 W
16 A	32	20	15	12	9	6	60	40	28	18	14	9
25 A	52	30	24	16	12	8	80	50	40	26	20	13
40 A	68	39	31	21	16	10	112	70	56	36	28	18
63 A	88	51	41	27	20	14	157	98	78	51	39	25

## Contactor selection charts (continued)

### Fluorescent tubes with ferromagnetic ballast

Nominal wattage	Single parallel compensated fluorescent					Double series compensated fluorescent				
	18 W	20 W	36 W	58 W	115 W	2 x 20 W	2 x 36 W	2 x 40 W	2 x 58 W	2 x 140 W
16 A	24	24	16	11	5	30	24	22	15	6
25 A	33	30	25	17	9	45	38	35	24	10
40 A	43	39	33	22	12	68	57	53	36	15
63 A	56	51	42	29	15	101	86	79	54	23

Nominal wattage	Quadruple series compensated fluorescent				Compact fluorescent with built-in starter			
	4 x 18 W				7 W	10 W	18 W	26 W
16 A	16				50	40	28	19
25 A	24				60	50	42	28
40 A	36				78	65	55	36
63 A	54				101	85	71	47

### Fluorescent tubes with electronic ballast

Nominal wattage	Single fluorescent				Double fluorescent		
	18 W	30 W	36 W	58 W	2 x 18 W	2 x 36 W	2 x 58 W
16 A	72	42	36	22	36	20	12
25 A	110	68	58	36	56	30	19
40 A	165	102	87	54	84	45	29
63 A	248	153	131	81	126	68	43

Nominal wattage	Triple fluorescent (series compensated)		Quadruple fluorescent (series compensated)	
	3 x 14 W	3 x 18 W	4 x 14 W	4 x 18 W
16 A	34	26	26	20
25 A	46	38	37	28
40 A	62	51	52	39
63 A	84	69	73	55

Nominal wattage	Compact fluorescent with built-in electronic power supply				
	7 W	11 W	15 W	20 W	23 W
16 A	120	80	64	50	43
25 A	200	125	90	70	60
40 A	280	175	126	98	84
63 A	392	245	176	137	118

### Discharge lamps with compensation

Nominal wattage	Metal halogenide						Low pressure sodium vapour					
	35 W	70 W	100 W	150 W	250 W	400 W	18 W	35 W	55 W	90 W	135 W	180 W
16 A	10	6	5	3	2	1	12	6	5	3	2	2
25 A	15	9	7	5	3	2	20	10	7	5	3	3
40 A	23	14	11	8	5	3	30	15	11	8	5	5
63 A	34	20	16	11	7	5	45	23	16	11	7	7

Nominal wattage	High pressure sodium vapour					High pressure mercury vapour				
	70 W	150 W	250 W	400 W	1000 W	50 W	80 W	125 W	250 W	400 W
16 A	8	7	5	3	1	11	8	6	3	2
25 A	10	9	6	4	2	15	10	8	4	3
40 A	15	14	9	6	3	21	14	11	6	4
63 A	23	20	14	9	5	29	20	16	8	6

Nominal wattage	High pressure mixed			
	100 W	160 W	250 W	400 W
16 A	9	6	4	2
25 A	11	7	5	3
40 A	14	9	7	4
63 A	19	12	8	5

## Isolating switches DX<sup>3</sup>-IS

from 40 A to 125 A



4 064 59



4 064 81

Dimensions **see e-catalogue**  
 Technical characteristics **see opposite**

AC 23 A according to IEC 60947 - 3, AC 22 A for  
 Double break contacts

Pack	Cat.Nos	Isolating switches	
		Grey handle	
		Can be equipped with 1 DX <sup>3</sup> signalling auxiliary	
		<b>2P - 400 V~</b>	
5	4 064 41	63	2
5	4 064 49	100	2
5	4 064 50	125	2
		<b>3P - 400 V~</b>	
1	4 064 60	40	3
1	4 064 61	63	3
1	4 064 69	100	3
1	4 064 70	125	3
		<b>4P - 400 V~</b>	
1	4 064 80	40	4
1	4 064 81	63	4
1	4 064 89	100	4
1	4 064 90	125	4

## Isolating switches DX<sup>3</sup>-IS

technical characteristics

### DX<sup>3</sup>-IS isolating switches

#### Electrical characteristics

Thermal rating (I <sub>th</sub> )	16 - 40 A 0.5 module/pole	40 - 63 A 1 module/pole	100 - 125 A 1 module/pole
Terminals	Cage	Cage	Cage
Connection	flexible	1.5 to 10 mm <sup>2</sup>	4 to 35 mm <sup>2</sup>
	rigid	1.5 to 16 mm <sup>2</sup>	4 to 50 mm <sup>2</sup>
Insulation voltage (Hi)	500 V~	500 V~	500 V~
Impulse withstand voltage (U <sub>imp</sub> )	6 kV	6 kV	6 kV
Category of use <sup>(1)</sup>	AC 22 A	AC 22 A	AC 22 A
Short time withstand current (I <sub>cw</sub> )	750 A	2000 A	2500 A
Short-circuit making capacity (I <sub>cm</sub> )	1500 A	3000 A	3700 A
No. of electrical operations	30000	20000	5000
Protection index	IP 2X wired	IP 2X wired	IP 2X wired

(1) test conditions according to IEC 60947-3  
 AC 22 A: combined motor/resistor breaking with frequent operations

## Remote control dimmers

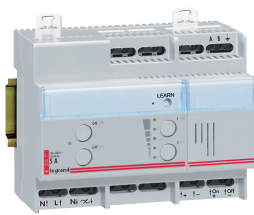
## Dimmers, remote dimmers



0 036 58



0 036 60



0 036 71



0 400 83

Dimensions see e-catalogue

Pack	Cat.Nos	Remote control dimmers 100 - 240 V~ - 50/60 Hz	
		<b>Controlled via non-illuminated push-buttons</b> DIN rail mounting The last lighting level is stored into memory, in case of power cut or switch-off Direct or remote control (switching and dimming) with non-illuminated push-buttons	Number of modules
1	0 036 58	For fluorescent lamps with 1-10 V dimmable ballast (fluorescent tubes and compact fluorescent lamps with separated dimmable ballast) Ballast power: maximum 800 VA (for 230 V~ 50/60 Hz) Control current: 50 mA	2
1	0 036 71	<b>Controlled via BUS line</b> DIN rail mounting Direct or remote control (switching and dimming) with non-illuminated double push-buttons or bus peripherals (Mosaic Programme and Céliane Programme) Equipped with illuminated scale indicating the light level of controlled lamps	6
1	0 036 60	For incandescent and halogen lamps 230 V~, ELV halogen lamps with ferromagnetic or electronic transformers Load: 1000 W (for 230 V~ 50/60 Hz)	4
		For fluorescent lamps with 1-10 V ballast (fluorescent tubes and compact fluorescent lamps with separated ballast) Ballast power: maximum 1000 VA (for 230 V~ 50/60 Hz) Control current: 50 mA	
1	0 036 80	<b>Power supply for BUS line</b> BUS power supply for remote controlled dimmers Cat.Nos 0 036 60/71 For maximum 8 peripherals	2

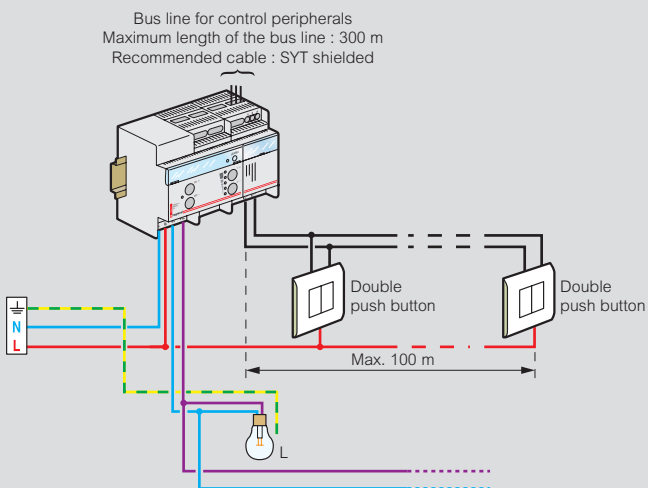
Pack	Cat.Nos	Remote control power dimmers for mounting in enclosures
		Local control on front face or remote control, light level adjustment via knob on front face Three functions : • Dimmer (V) : used to set a light level and control ON/OFF switching via a local control, simple non-illuminated pushbutton, dual-function pushbutton or remote peripheral device • Remote control dimmer (T) : used to set a light level, control ON/OFF switching and dimming via local control, simple non-illuminated pushbuttons, dual-function pushbuttons, peripheral devices and dimming auxiliaries. The minimum light level is adjustable • Slave (E) : for higher power ratings, the product is used in conjunction with other remote power dimmers (single or - 3 phase). Up to 4 slaves can be used per master remote dimmer (same Cat.No. as for slave remote control dimmer). Commands are generated by the master remote dimmer General control : used for ON/OFF switching of an unlimited number of remote control dimmers and storing the lighting level of each remote control dimmer before an OFF command
1	0 400 83	<b>5 000 W remote control power dimmer</b> 230 V~ - 50/60 Hz Used to vary the light level of an installation : • of traditional incandescent lamps, 230 V~ : 300 to 5 000 W • of halogen incandescent lamps, 230 V~ : 300 to 5 000 W • of fluorescent tubes, Ø 26 mm with electronic ballast • of compact fluorescent lamps with electronic ballast • of 12 V halogen lamps with ferromagnetic transformer : 300 to 5 000 W Mini. power : 300 W Up to 25 000 W can be controlled in master/slave arrangement with 4 slave remote control dimmers combined with 1 master remote control dimmer In the event of a power cut, storage of last lighting level Memorise their lighting level before switching off Dimensions : L 181 x H 232 x D 117 mm Weight : 2.2 kg



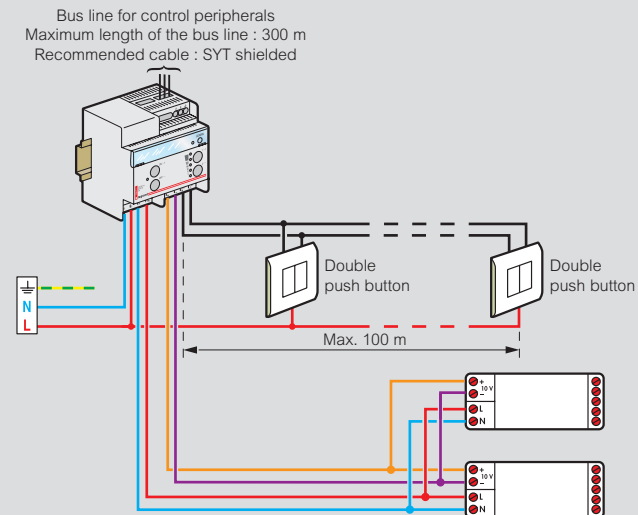
# Remote control dimmers

## Cabling

### Remote dimmer for incandescents lamps Cat.No 0 036 71



### Remote dimmer for fluorescent lamps with 1-10 V ballast Cat.No 0 036 60

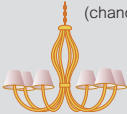

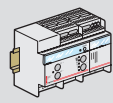


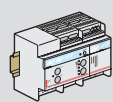

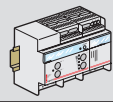


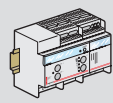
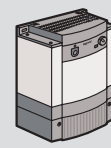


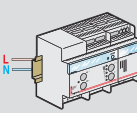
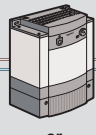


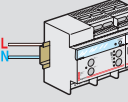


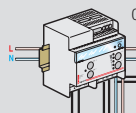
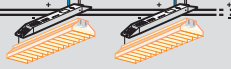

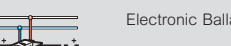

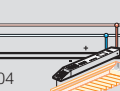

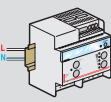
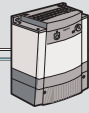




## Choice of dimmer

Cat.Nos	Power	1	2	3	4	5	6
0 036 60	Max. 1 000 VA	-	-	yes, with ballast 1-10 V			yes, with ballast 1-10 V
	Min. -						
0 036 71	Max. 1 000 W	yes	yes	-	yes	yes	-
	Min. -						

- 1 Incandescent lamps
- 2 Halogen lamps 230 V
- 3 Fluorescent lamps Ø 26 or 36 mm
- 4 Halogen lamps with ferromagnetic transformer
- 5 Halogen lamps with electronic transformer
- 6 Fluocompact lamps with integrated electronic ballast 1-10 V

# Dimming

Incandescent lighting	<p><b>Living-room</b></p>  (chandelier)  (wail lamp)  0 036 71
	<p><b>Commerce</b></p>  (spotlight with reflector)  (wail lamp)  0 036 71
230 V halogen incandescent lighting	<p><b>Living-room</b></p>  (wail lamp)  0 036 71
	<p><b>Commerce Bar Restaurants Coffee shops</b></p>  (spotlight with reflector)  (spotlight with reflector)  0 036 71  Power plates 0 400 83
12/24 V incandescent halogen lighting	<p><b>Commerce Bar Restaurants Banks Railways stations, airports Meeting rooms Museums</b></p>  (Floodlight)  (spotlight with reflector)  0 036 71  or power plates 0 400 83  
	 0 036 71  0 420 56/57  Spotlight with reflector
Fluorescent lighting	<p><b>Offices Classrooms Amphitheatres Computer rooms Storage areas Meeting rooms Hospitals</b></p>  0 036 60  Zone 1  Zone 2  Electronic Ballast 1/10 V
	 0 784 04  0 744 04  Electronic Ballast 1/10 V
	 0 036 60  0 400 83  Precharge 0 401 48  Electronic ballast for dimming 0 401 51/52/53/54/55/57