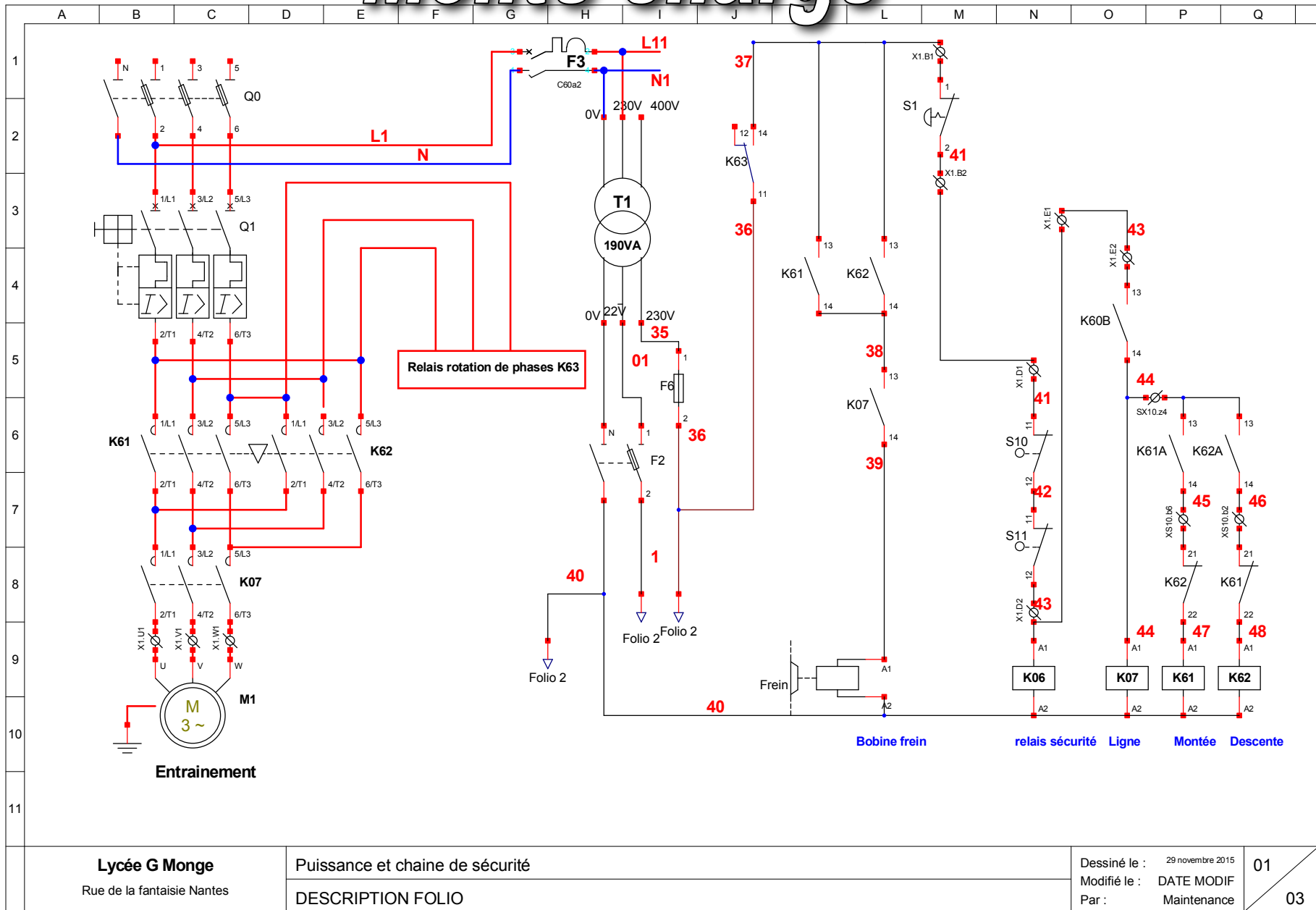
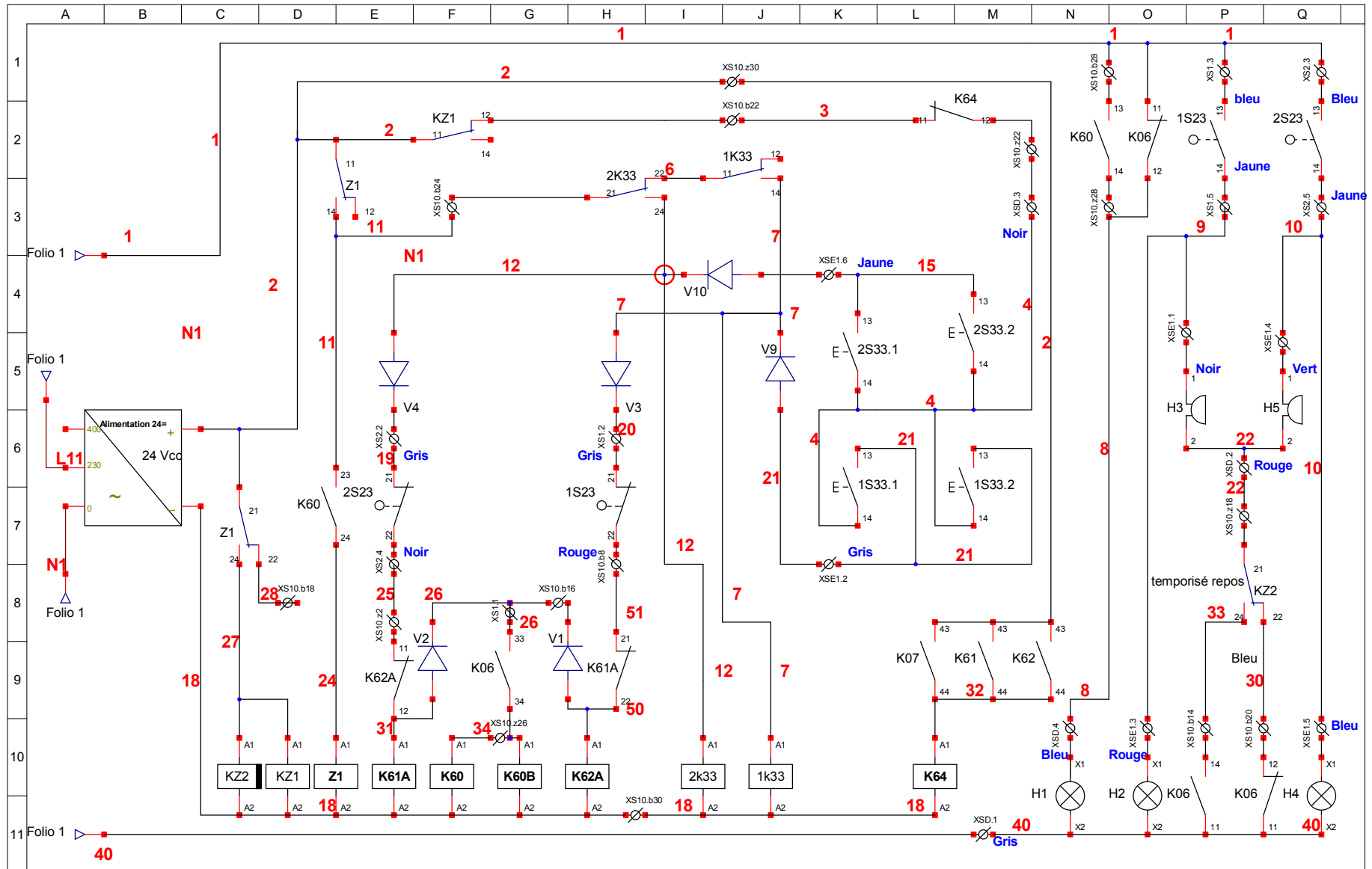


# Monte charge



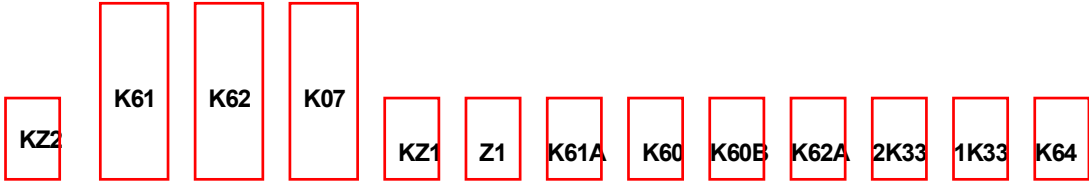
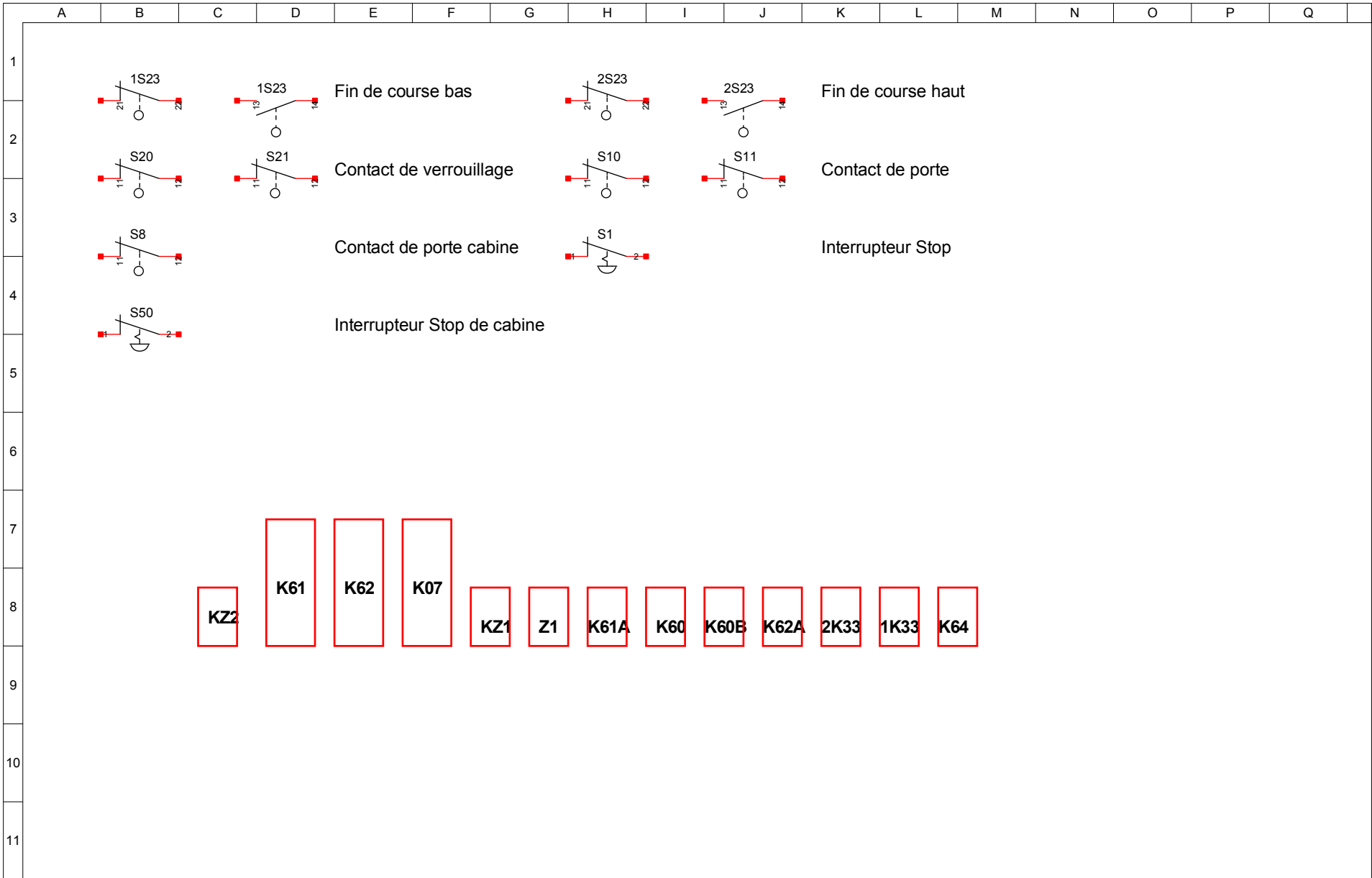


Lycée G Monge  
rue de la fantaisie, Nantes

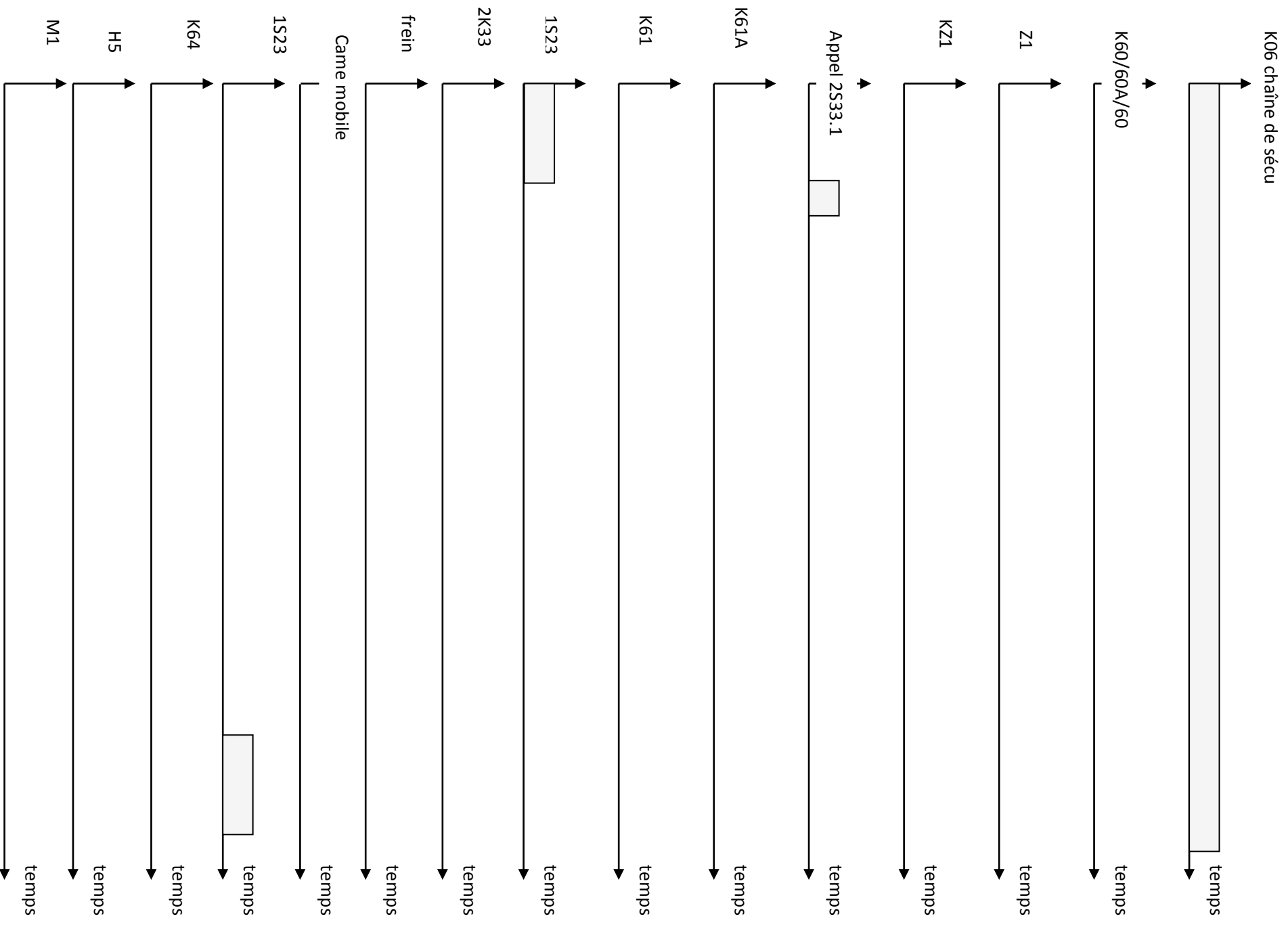
Monte Plat  
Commande

Dessiné le : 29 janvier 2016  
Modifié le : DATE MODIF  
Par : maintenance

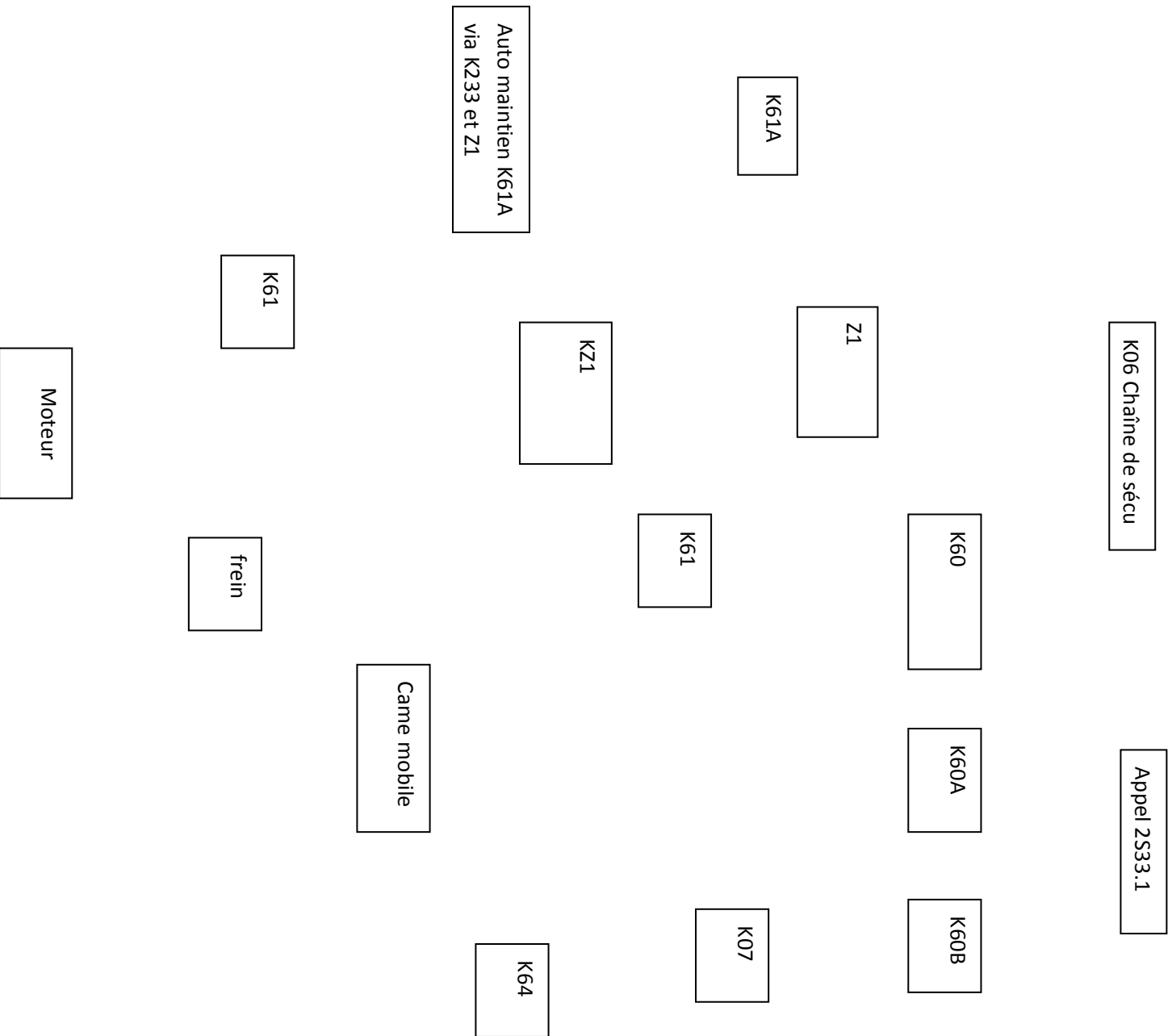
02  
03







Descripteur de fonctionnement



# Measuring and monitoring relay CM-PSS

## Three-phase monitor for over- and undervoltage

### Data sheet

#### Features

- Three-phase monitoring of phase sequence, phase loss, over- and undervoltage
- Switching thresholds  $\pm 10\%$  of rated voltage
- Adjustable ON- and OFF-delay
- Dual-frequency/ measuring input 50/60 Hz
- Powered by the measuring circuit
- 2 c/o contacts
- 3 LEDs for status indication

#### Approvals






 (pending)

#### Marks



#### Ordering data

Type	Supply voltage	Order code
CM-PSS	380 V AC, 50/60 Hz	1SVR 430 784 R2300
CM-PSS	400 V AC, 50/60 Hz	1SVR 430 784 R3300

#### Ordering data - Accessories

Description	Order code
Sealable cover	1SVR 430 005 R0100
Adapter for screw mounting	1SVR 430 029 R0100
Marker	1SVR 366 017 R0100

#### Application

The CM-PSS is a three-phase monitor. It is able to monitor the phase parameters phase sequence, phase loss, over- and undervoltage.

#### Operating mode

##### Over- and undervoltage monitoring

If all three phases are present with correct voltage, the output relay is energized. If the voltage to be monitored exceeds or falls below the fixed threshold value, the output relays are de-energized undelayed or delayed (0.1-10 s), depending on the set time delay.

The fault type is indicated by LEDs.



The output relays re-energize automatically, instantaneously or with delay (0.1-10 s), depending on the set time delay, as soon as the voltage returns to the tolerance range, taking into account a fixed hysteresis of 5%.

##### Phase sequence and phase loss


Phase sequence and phase loss are indicated and reset without time delay.

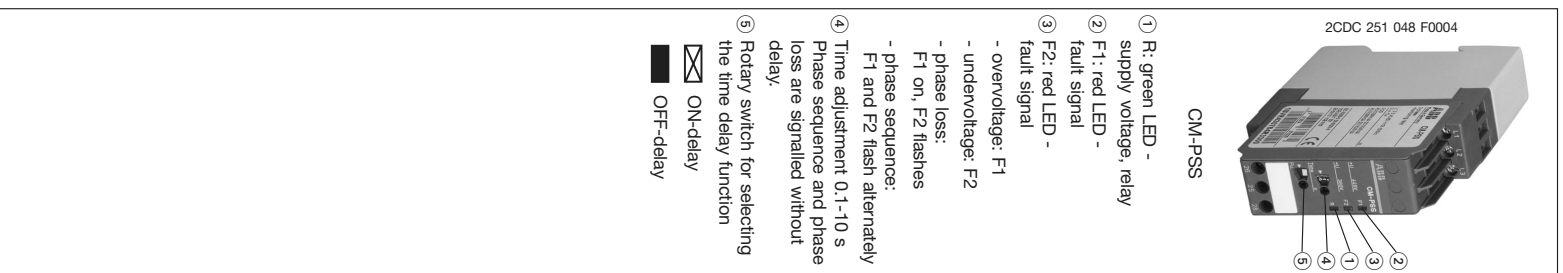
##### Adjustment of time delay

The fault signal can be suppressed or, for better evaluation, stored for the settable delay time of 0.1 to 10 s.

The rotary switch  /  is used to select the delay time function.

Switch position  : In case of a fault, the de-energizing of the output relays and the respective fault signal are suppressed for the set delay time.

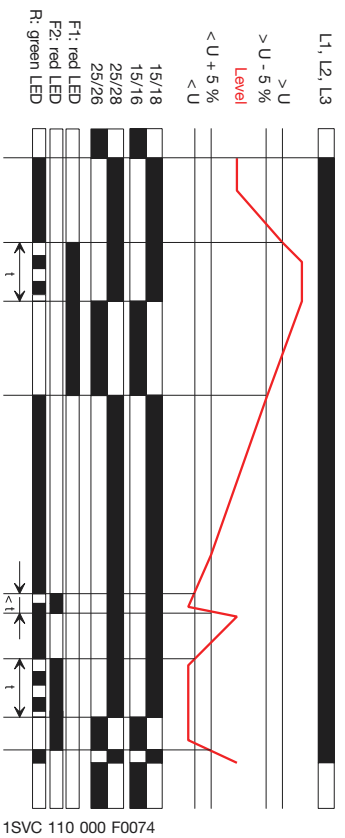
Switch position  : In case of a fault, the output relays de-energize immediately and a fault signal is issued and stored for the set delay time. This way, also momentary undervoltage conditions are recognized.



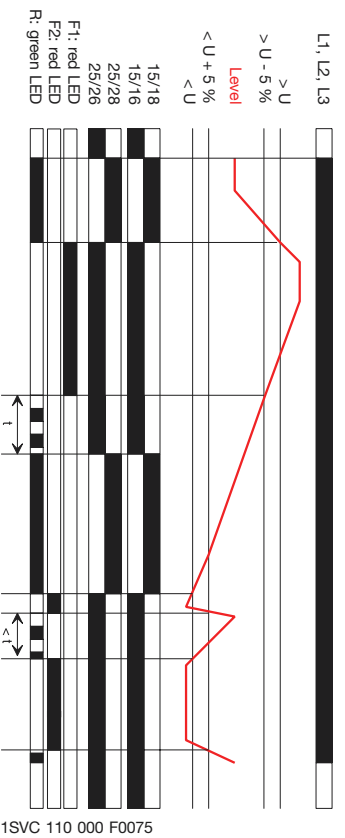
- ① R: green LED - supply voltage, relay
  - ② F1: red LED - fault signal
  - ③ F2: red LED - fault signal
  - overvoltage: F1
  - undervoltage: F2
  - phase loss: F1 on, F2 flashes
  - phase sequence: F1 and F2 flash alternately
  - ④ Time adjustment 0.1-10 s  
Phase sequence and phase loss are signalled without delay.
  - ⑤ Rotary switch for selecting the time delay function
- ON-delay  
 OFF-delay

## Function diagrams

ON-delayed over- and undervoltage monitoring  
(switch position )

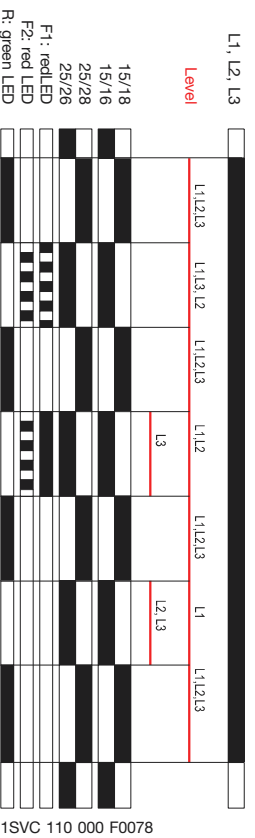


OFF-delayed over- and undervoltage monitoring  
(switch position )

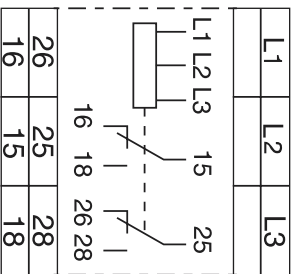


Thresholds for over- and undervoltage adjustable:  
 1SVR 430 784 R2300:  $U_{min} = 342\text{ V}$      $U_{max} = 220\text{-}300\text{ V}$   
 1SVR 430 784 R3300:  $U_{min} = 418\text{ V}$      $U_{max} = 420\text{-}500\text{ V}$

Phase sequence and phase loss, signalled without delay



## Position of connection terminals



1SVC 110 000 F0512-a

L1, L2, L3    Supply voltage =  
 15-16/18    monitoring voltage  
 25-26/28    2 c/o - closed-circuit principle



## Technical data

<b>Input circuit (= monitoring circuit)</b>		<b>L1, L2, L3</b>
Supply voltage - power consumption	L1, L2, L3	380 V AC - 20 VA 400 V AC - 20 VA
Supply voltage tolerance		-15 % ... +10 %
Supply voltage frequency		50/60 Hz
Supply voltage frequency tolerance		± 10 %
Duty time		100 %
<b>Monitoring circuit</b>		<b>L1, L2, L3</b>
Monitoring functions		phase sequence, phase loss, over- and undervoltage
Monitoring ranges min.-max.	overvoltage undervoltage	418 V / 440 V 360 V / 342 V
Thresholds	over- /undervoltage	fixed
Hysteresis related to the threshold value		fixed 5 %
Monitoring voltage frequency		50/60 Hz ± 10 %
Max. monitoring time		50 ms
Measuring error within supply voltage tolerance		≤ 0.5 %
Measuring error within temperature range		≤ 0.06 % / °C
<b>Timing circuit</b>		
ON-delay time		200 ms
Delay time (ON- and OFF delay)		0,1-10 s adjustable
Tolerance of the adjusted delay time		± 10 %
Timing error within supply voltage tolerance		≤ 0.5 %
Timing error within temperature range		≤ 0.06 % / °C
<b>Indication of operational states</b>		<b>R: green LED, F1, F2: red LED</b>
Supply voltage		R on
Output relays energized		R flashes during timing
Phase loss		F1 on, F2 flashes
Phase sequence		F1 and F2 flash alternately
Overvoltage		F1 on
Undervoltage		F2 on
<b>Output circuits</b>		<b>15-16/18, 25-26/28</b>
Number of contacts		2 c/o (relays)
Operating principle (output relays de-energize in case of fault)		closed-circuit principle
Contact material		AgNi
Rated voltage	acc. to VDE 0110, IEC 60947-1	250 V
Min. switching voltage / min. switching current		24 V / 10 mA
Max. switching voltage		250 V AC, 250 V DC
Rated switching current	AC-12 (resistive) 230 V	4 A
acc. to IEC 60947-5-1	AC-15 (inductive) 230 V	3 A
	DC-12 (resistive) 24 V	4 A
	DC-13 (inductive) 24 V	2 A
Max. lifetime	mechanical	30 x 10 <sup>6</sup> switching cycles
	electrical (AC-12, 230 V, 4 A)	0,1 x 10 <sup>6</sup> switching cycles
Short-circuit proof, max. fuse rating	n/c	10 A fast, operating class gL
	n/o	10 A fast, operating class gL
<b>General data</b>		
Width of enclosure		22.5 mm
Weight		ca. 130 g (0,29 lb)
Wire size	stranded with wire end ferrule	2 x 2,5 mm <sup>2</sup> (2 x 14 AWG)
Mounting position		any
Degree of protection	enclosure terminals	IP 50
	enclosure terminals	IP 20
Temperature range	operation storage	-20 °C ... +60 °C -40 °C ... +85 °C
Mounting		DIN rail (EN 50022)