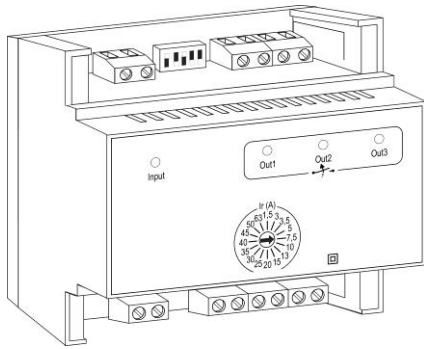


Universal Load Shedder

Cat. Nos: 4 120 21/22



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1. DESCRIPTION - USE

- . The universal load shedder is a power manager device. It avoids circuit-breaker tripping despite a lower rating than that which would normally be used.
- . The load shedder monitors overall consumption and cuts certain "non-priority" circuits, when the electricity supplier contract is exceeded.
- . The universal load shedder has 3 shedding outputs
- . Compatible with single-phase and three-phase installations

2. RANGE

- . Cat. n° 4 120 21: Universal Load Shedder 3 outputs + 1 Current transformer, I_{max} 100 A
- . Cat. n° 4 120 22: additional Current Transformer, I_{max} 100 A

Width:

- . 5 DIN modules.

Rated voltage and frequency:

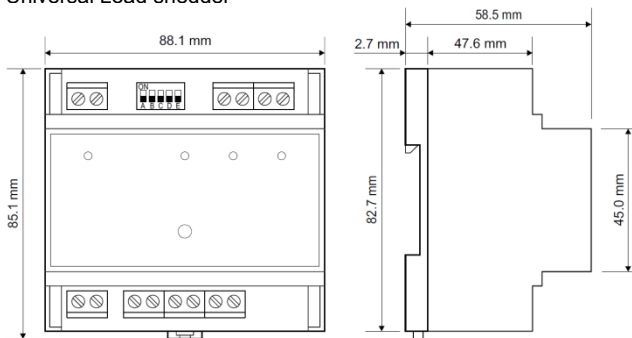
- . Un: 230 Va.c. - Operational range: 207 ÷ 253 Va.c.
- . Fn: 50 Hz

CT current:

- . Maximum current, I_{max}: 100 A

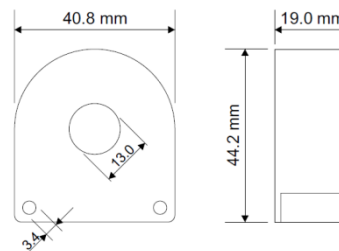
3. OVERALL DIMENSIONS

- . Universal Load shedder

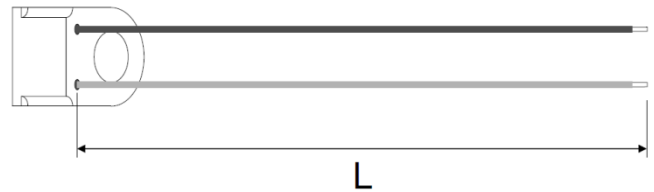


3. OVERALL DIMENSIONS (continued)

- . Current transformer



- . Current transformer(s) - Cable length



- . Cable length: L = 0,50 m
- . Maximum cable length: L_{max} = 2 m (L + 1,5 m of cable H03VV-F / H05V-K)
- . Current transformer(s) does not have a connection direction.
- . It is possible to pass several conductors of the same phase through a current transformer C.T. (Inner Ø 13 mm maximum).

4. PREPARATION -CONNECTION

Fixing:

- . On symmetric rail EN/IEC 60715 or DIN 35 rail

Operating positions:

- . Vertical, Horizontal, Upside down, On the side



Screw terminals:

- . Terminal depth: 8 mm.
- . Stripping length: 8 mm

4. PREPARATION - CONNECTION (continued)

Screw head:

. Screw slotted.

Recommended tightening torque:

. 0,5 Nm.

Tools required:

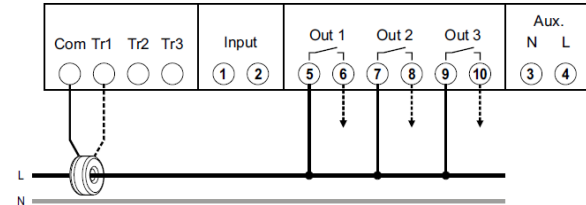
- . For terminals: flat screwdriver 3,5 mm
- . For front face rotary (to set threshold value): flat screwdriver 2,5 mm (max.)
- . For fixing the device on the DIN rail: flat screwdriver 5,0 mm (max.)

Conductor type:

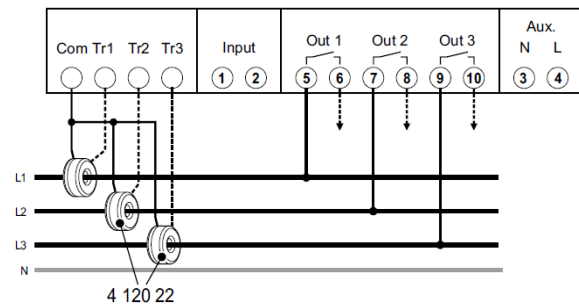
	Copper cable	
	Without ferrule	With ferrule
Rigid Cable	0,5 to 4 mm ²	-
Flexible Cable	0,5 to 2,5 mm ²	0,5 to 2,5 mm ²

Electrical wiring diagram:

. Single-phase installation



. Three-phase installation



Note: in this case, it is mandatory to associate:

- at the output "Out1", the loads supplied by phase 1
 - at the output "Out2", the loads supplied by phase 2
 - at the output "Out3", the loads supplied by phase 3
- The Shedding command will be sent to loads whose phase is exceeded.

. Output characteristics:

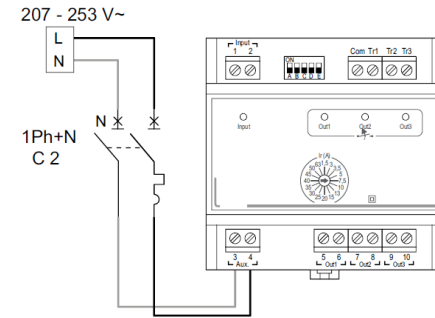
Maximum switchable load: 230 V~, 15 A, $\cos\phi = 1$

Note: if power to be controlled by non-priority outputs exceeds 15A ($\cos\phi = 1$), a contactor with power suited to the load must be used as relay.

4. PREPARATION - CONNECTION (continued)

Electrical wiring diagram (continued):

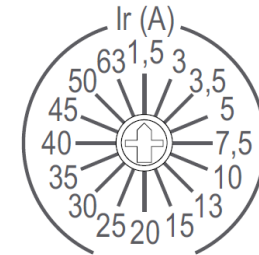
Protect the device with a circuit breaker with $I_n = 2$ A (see the example)



Programming of the threshold value

. To set the threshold value (in Amperes) above which Load Shedding procedure starts, choose one of the rating values available (from 1,5 A to 63 A) according to your electrical contract.

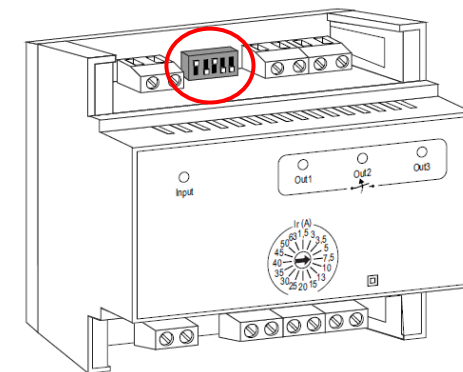
. Values available: 1.5, 3, 3.5, 5, 7.5, 10, 13, 15, 20, 25, 30, 35, 40, 45, 50, 63 A



Device configuration:

. The load shedder configuration is carried out using the switches located on the upper part of the device.

Dipswitches may be manipulated by a screwdriver










. Default configuration (switch in 00000 position)



4. PREPARATION –CONNECTION (continued)

Device configuration (continued):

. Table of possible configurations

	A	B	C	D	E
ON	L1 L2 L3 N				
	L N			Normal	

. Switch A:

Single-phase or three-phase system.

In case of three-phase installation, is necessary to use 3 CT's (current transformers); 1 CT per phase (Cat.No of one CT: 4 120 22)

. Switch B:

Load shedding delay. Delay is approximately 3 seconds

. Switch C:

Load shedding mode.

In case of single-phase installation, it s possible to give priority to output 3, by shedding it last.

. Switch D:

Load shedding Test.

Allows to quickly test the load shedding of the installation. Set the D switch to NORMAL after the Test.

. Switch E:

Choice of contact status.

It is possible to set the status of the shedding contacts

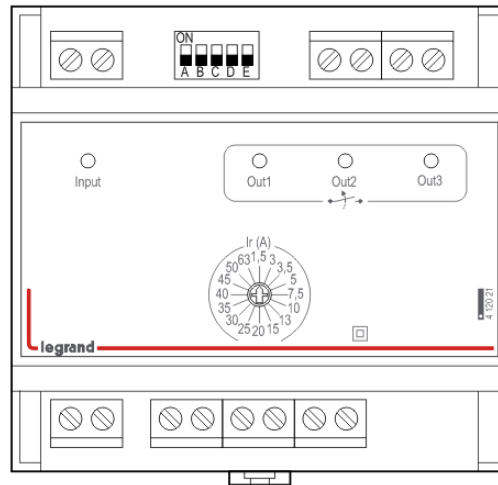
NO = Normally Opened

NC = Normally Closed

5. GENERAL CHARACTERISTICS

Front face marking:

By adhesive foil



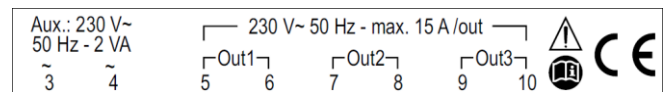
Terminals marking:

. By adhesive label

- upper terminals label



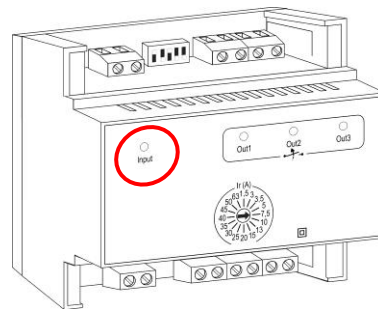
- lower terminals label



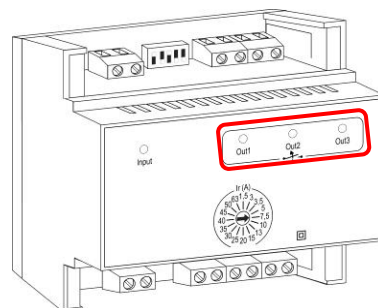
Signalling LEDs:

. Load shedder device is equipped with signalling LEDs that give information about input and outputs status.

. "Input" LED: indicates that the corresponding contact in input is open or closed (see § "Remote control option")



. "Outputs": LED "on" indicates shedding active on the corresponding output



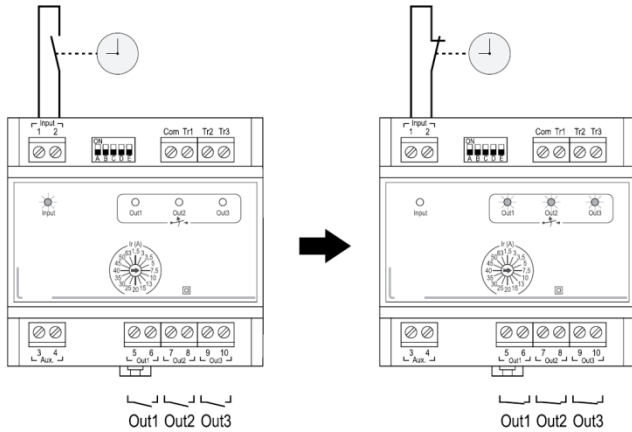
Remote control option:

. In some case, it can be useful to manually load shed, and it is then a matter of closing the contact across the two remote control terminals (e.g. clock, etc...).

. "Input" LED indicates the operating status of the system.

LED on: shedding not active

LED off: shedding active



Note: input contact must be "Voltage-free" type

Shedding output characteristics:

- . Potential-free SPST-NO contact relay
- . Voltage and Current: max. 250 Va.c., 15 A, $\cos\phi 1$
- . Relay contacts switching type: micro-interruption type 1C according EN 60730-1

Insulation voltage:

- . $U_i = 400 \text{ V}$

Pollution degree:

- . 2 according to IEC/EN 60898-1.

Overvoltage category :

- . III

Plastic material:

- . Self-extinguishing polycarbonate.
- . Heat and fire resistant according to IEC/EN 60695-2-12, glow-wire test at 960°C.

Ambient operating temperature:

- . Min. = 0°C. Max. = +40°C

Ambient storage temperature:

- . Min. = -10°C. Max. = +70°C

Protection Index:

- . Protection index of terminals against direct contacts: IP2X (IEC/EN 60529).
- . Protection index of terminals against solid and liquid bodies (wired device): IP 20 (IEC/EN 60529).
- . Protection index of the front face against solid and liquid bodies: IP 40 (IEC/EN 60529).
- . Class II, front panel with faceplate.

5. GENERAL CHARACTERISTICS (continued)

Average weight per device:

	Weight (kg)
Load shedder	0,295
Current transformer	0,073

Volume when packed:

	Volume (dm ³)
Load shedder + 1 CT	1,0
Current transformer	0,17

Consumption:

- . 2 VA

6. COMPLIANCE AND APPROVALS

Compliance to standards:

- . Compliance with Directive on electromagnetic compatibility (EMC) n° 2014/30/EU
- . Compliance with low voltage directive n° 2014/35/EU.

Environment respect – Compliance with CEE directives:

- . Compliance with Directive 2002/95/EC of 27/01/03 known as "RoHS" which provides for a restriction on the use of dangerous substances such as lead, mercury, cadmium, hexavalent chromium and polybrominated biphenyl (PBB) and polybrominated diphenyl ether (PBDE) brominated flame retardants from 1st July 2006
- . Compliance with the Directive 91/338/EEC of 18/06/91 and decree 94-647 of 27/07/04.

Plastic materials :

- . Halogens-free plastic materials.
- . Marking of parts according to ISO 11469 and ISO 1043.

Packaging :

- . Design and manufacture of packaging compliant to decree 98-638 of the 20/07/98 and also to directive 94/62/CE.