

# Single-phase Load Shedder

Cat. No: 4 120 20



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## 1. DESCRIPTION - USE

- . The single-phase 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 1 output that can be used, according with the configuration, for the load shedding or for an acoustic/visual signalling of the threshold exceeded

## 2. RANGE

- . Cat. n° 4 120 20: Single-phase Load Shedder 1 output, max. 16 A

### Width:

- . 2 DIN modules.

### Rated voltage and frequency:

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

### Auxiliary supply:

- . Uaux: 230V~ (tolerance 0,85÷1,15 Uaux)
- . fn 50 Hz (tolerance 47÷63 Hz)

### Rated voltage:

- . Un: 195÷264 V~ (phase/neutral)

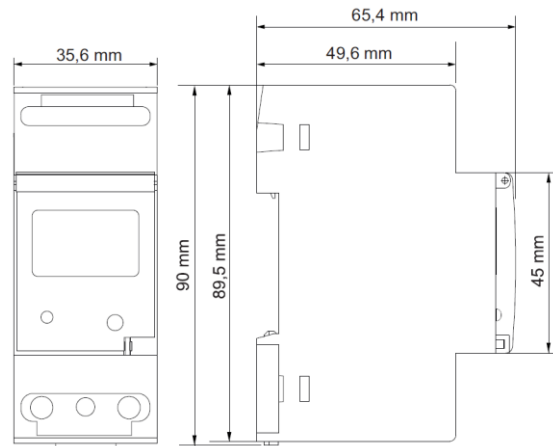
### Rated frequency:

- . fn : 50 Hz (tolerance 47÷63 Hz)

### Rated current:

- . In: 28 A

## 3. OVERALL DIMENSIONS



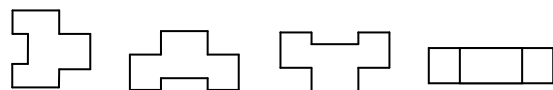
## 4. PREPARATION -CONNECTION

### Fixing:

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

### Operating positions:

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



### Screw terminals:

- . Auxiliary supply, L-N (upper part of the load shedder)  
Terminal depth: 8 mm.  
Stripping length: 8 mm
- . Input and outputs, L-Lp-Ln (lower part of the load shedder)  
Terminal depth: 10 mm.  
Stripping length: 10 mm

### Screw head:

- . Auxiliary supply, L-N (upper part of the load shedder)  
Screw slotted.
- . Input and outputs, L-Lp-Ln (lower part of the load shedder)  
Screw slotted and Philips.

## 4. PREPARATION - CONNECTION *(continued)*

### Tightening torque:

- Auxiliary supply, L-N (upper part of the load shedder)  
Recommended: 0,4 Nm.  
Max.: 0,8 Nm
- Input and outputs, L-Lp-Ln (lower part of the load shedder)  
Recommended: 0,8 Nm.  
Max.: 1,2 Nm

### Tools required:

- For auxiliary supply terminals:  
flat screwdriver 3,5 mm
- For input and outputs terminals:  
Phillips n°2 or flat screwdriver 4 mm
- For fixing the device on the DIN rail: flat screwdriver 5,0 mm (max.)

### Conductor type:

- Copper cables.
- Auxiliary supply terminals

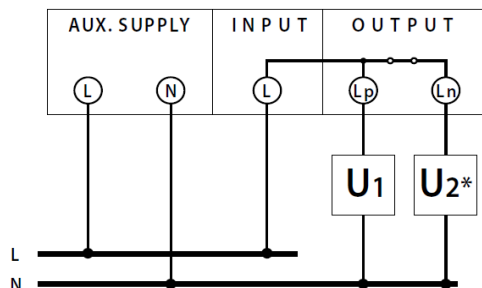
	Without ferrule	With ferrule
Rigid Cable	<b>max. 4 mm<sup>2</sup></b>	-
Flexible Cable	<b>max. 2,5 mm<sup>2</sup></b>	<b>max. 2,5 mm<sup>2</sup></b>

- Input and outputs terminals

	Without ferrule	With ferrule
Rigid Cable	<b>max. 16 mm<sup>2</sup></b>	-
Flexible Cable	<b>max. 10 mm<sup>2</sup></b>	<b>max. 10 mm<sup>2</sup></b>

### Electrical wiring diagram:

#### Function F1:

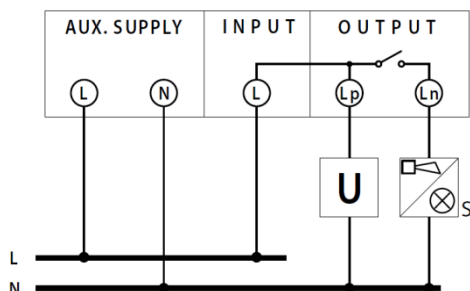


U1: Priority Load

U2: Non-priority Load

\*Attention: the total power of the loads connected to Ln must not exceed 4kW

#### Function F2 :



U: Load

S: External sound / light signaller

## 4. PREPARATION -CONNECTION *(continued)*

### Programming:

- Programming is carried out using the front button "P".
- Two functions can be set

#### F1 *(pre-set function)* - ACOUSTIC SIGNAL AND AUTOMATIC NON-PRIORITY LOADS TRIPPING.

By exceeding the loaded power threshold:

- the state of the alarm is displayed;
- the inner alarm buzzer is activated (duration of the sound signalling "t.be" programmable).

When the activation time ("t.on", programmable) is over:

- the load connected with Ln terminal (n = non-priority) is tripped.
- The load self-resetting occurs when the inhibition time ("t.of", programmable) is over.

It is still possible to make a manual reset of the load, acting on the front button of the device.

#### F2: ACOUSTIC SIGNAL AND ACTIVATION REMOTE CONTACT.

By exceeding the loaded power threshold and when the delay ("del", programmable) is over:

- the state of the alarm is displayed and the inner alarm buzzer is activated (duration of the sound signalling "t.be" programmable);
- the inner relay between L and Ln is activated.

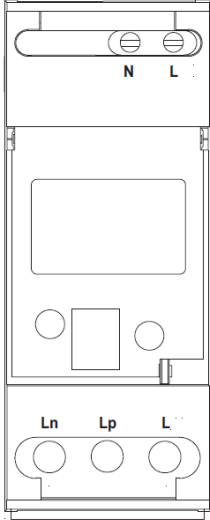
The state of the alarm stays until the power is higher than the loaded threshold

**Note:** for detailed programming information, please refer to the instruction sheet of the Load shedder (LE08391AA)

## 5. GENERAL CHARACTERISTICS

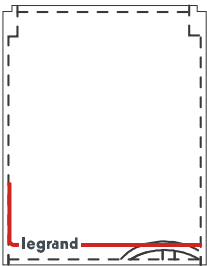
### Case marking:

- . By permanent ink pad printing



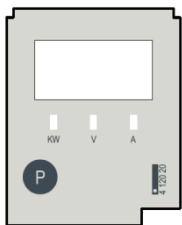
### Transparent flip front marking:

- . By indelible ink-pad printing



### Front face marking:

- . Adhesive foil



### Device screen:

- . Type: 7 segments display.
- . Page scroll: manual, through front button "P"

### Display:

- . Measurement display: divided into 3 pages
  - Active power (resolution 10 W)
  - Voltage (resolution 1 V)
  - Current (resolution 100 mA)
- . Accuracy:  $\pm 1\%$  (referred to full scale value)

### Shedding output (Ln) characteristics:

- . 1 SPST-NO live contact relay
- . Voltage and Current:
  - max. 250 V~, 16 A -  $\cos\phi 1$
- . Relay operating mode:
  - function F1: normally closed contact (NC)
  - function F2: normally opened contact (NO)

**Note:** if power to be controlled by non-priority outputs exceeds 16 A ( $\cos\phi = 1$ ), a contactor with power suited to the load must be used as relay.

### Insulation voltage:

- .  $U_i = 300$  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. = -10°C. Max. = +55°C

### Ambient storage temperature:

- . Min. = -40°C. Max. = +70°C

### Relative humidity (EN 60255-6):

- . 45...75%, without condensing

### 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 52 (IEC/EN 60529).
- . Class II, front panel with faceplate.

### Impulse withstand voltage:

- . All circuits/Earth:
  - alternate current 50 Hz / 1 min: 4 kV

### Average weight per device:

- . 0, 220 kg.

### Volume when packed:

- . 0,37 dm<sup>3</sup>.

### Consumption:

- .  $\leq 3,2$  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.
- . Electromagnetic Compatibility:
  - emission tests according to EN 55022 (class B)
  - immunity tests according to EN 61326-1

### 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.