

• Multi-step load shedding

DLB105/BIN 8 steps, binary coded output

DLB105/R 3 steps, direct output

• Real time clock

Peak and Off-peak hours

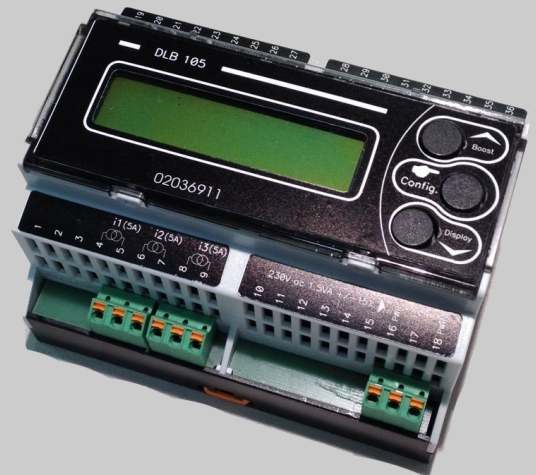
Daylight Saving Time

• Display : LCD, 2 lines, 16 characters

Display of all electrical parameters

• Fully configurable

Power limits, delay of load shedding,
delay of reloading, reloading threshold



The DLB105 is a multi-step load shedder allowing to limit the electrical consumption. The DLB105/BIN transmits to a control system, the available power in a binary format. The DLB105/R allows to control up to three not priority loads (shedding and reloading). The device can be used in single phase or in three phase network.

Description :

- Measurement of total active power and compare it to a power threshold,
- Measurement of current for each phase and limits it to the circuit breakers range,
- DLB105/BIN: Generate a 3bits (8 steps) output binary code, image of available power.
- DLB105/R: Direct control of not priority loads in function of available power,
- Real clock time, calendar and Daylight Saving Time for management of available power.
- 2 consumption limits (MAXimal and ECONomical) are configurable in timeslot for each day of week.

Front face :

- 2 lines, 16 characters, backlit LCD display. Display of three pages of functional parameters. (switching by the "display" button)

- Page 1: Day, month, year, state of shedding outputs
hours, minute, Mode (ECO or MAX)
- Page 2: total power consumed, power threshold
power factor (Cos phi), Line voltage
- Page 3: i1, i2, i3 (only i1 in single phase)

- Three push buttons for device configuration.
the configuration is made on 2 levels (User and Installer) :

"User" level setting (free access):

- Hours and Date parameters,
- Timeslot (Peak and Off-peak hours) for each day of week

"Installer" level setting (lock by code) :

- Messages language,
- current transformer ratio,
- step for load shed (DLB105/BIN: gap between each binary code in Kw),
- delay of shedding (0 to 10sec),
- delay of reloading (0 to 3600sec),
- power limit for ECO (Peak hours),
- power limit for MAX (Off-peak hours),
- setting of circuit breaker current limit,
- activation for DST.

The "BOOST" button is for manually switch to power limit for MAX (ex: non-working day,...) and return to automatic mode the next day.
(The "boost" function is also available via a digital input)

DLB105/R operating:

When an overconsumption is detected, the relay A is deactivated at first. If the total active power is less than the low limit, the relay A is reactivated. If overconsumption still present, it's the relay B who's fall and finally the relay C.
The relays are deactivated in the order A,B,C and reactivated in the way C,B,A. (the sequence of reloading is configurable)

Measure inputs:

- 3 isolated current inputs 5A. (for external current transformers),
 - 1 voltage input. Also use for 230V device power supply (phase 1)
- The power factor (cos Phi) and Line voltage are measure on the phase 1 (between i1 and Upower) and define as same on the three phase.

Outputs:

- 1 logic output for the limit power mode used (MAX or ECO)
- DLB105/BIN: 3 Logic outputs (static output, not polarized)

Truth table for DLB105/BIN (3 bits = 8 shedding gap). (0 => open ; 1 close)

000	----> 100 % of available power
001	----> available power = limit power - 1x load shedding gap
010	----> available power = limit power - 2x load shedding gap
011	----> available power = limit power - 3x load shedding gap
100	----> available power = limit power - 4x load shedding gap
101	----> available power = limit power - 5x load shedding gap
110	----> available power = limit power - 6x load shedding gap
111	----> 0 % of available power

- DLB105/R: 3 output relays

Feature:

- DIN standard modular housing (6 modules approx. 105mm)
- connection on screw terminal block (max section 2.5 mm²)
- protection rating (enclosure / terminals): IP20
- Conformal coating.

Version and order code:

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DLB105/BIN : version with binary code output for shedding.

DLB105/R : 3 relays outputs for direct control of shedding / reloading of three not priority loads.

MEASURES INPUTS

TYPE	RANGE
Current	0...5A
Input impedance	< 0.05 ohms
Power consumption	<1.25 W
Overload	25A 10 seconds
Measurement rate	continuously
Frequency	45 to 65 Hz

POWER SUPPLY

230Vac (45...65Hz) 1.5VA +/- 15%

METROLOGY

(the precisions are given in % of full scales)

Current	+/- 1 %
Voltage	+/- 1 %
Active power	+/- 3 %
Cos phi	+/- 2%

(condition: freq: 45...65 Hz, cos phi > 0.75, peak factor <1.4, U/I input range: 10 to 90%)

OUTPUT

DLB105/BIN : 3 static relay output (opto MOS)
Switching power : 100mA / 250Vac-dc

DLB105/R : 3 electromechanical relay output
Switching power : 2A / 250Vac-dc

ENVIRONMENT

Operating temperature	-20 to 60 °C
Storage temperature	-20 to 85 °C
Relative humidity	85 % not condensed
Weight	120 g
Protection	IP 20
Dielectric strength	1500 Vrms continuous
	Inputs / Power / Relay

Electromagnetic compatibility 2014/30/UE / Low Voltage Directive 2014/35/UE

Immunity standard for industrial environments EN 61000-6-2		Emission standard for industrial environments EN 61000-6-4
EN 61000-4-2 ESD	EN 61000-4-8 AC MF	EN 55011 group 1 class A
EN 61000-4-3 RF	EN 61000-4-9 pulse MF	
EN 61000-4-4 EFT	EN 61000-4-11 AC dips	
EN 61000-4-5 CWG	EN 61000-4-12 ring wave	
EN 61000-4-6 RF	EN 61000-4-29 DC dips	



WIRING AND OUTLINE DIMENSIONS:

