Load shedding contactor single and three phase

LOREME

DLB105

- **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 consummation. 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 use 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 then 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 DBL105/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 mm ²)
- protection rating (enclosure / terminals): IP20
- Conformal coating.

Version and order code:

Request a quote ✉

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*	
EN 61000-4-3 RF	*EN 61000-4-9* pulse MF		
EN 61000-4-4 EFT	*EN 61000-4-11* AC dips	*group 1*	CE
EN 61000-4-5 CWG	*EN 61000-4-12* ring wave	*class A*	
EN 61000-4-6 RF	*EN 61000-4-29* DC dips		

WIRING AND OUTLINE DIMENSIONS:

107.6

60.7

89.7

DLB 105

Mon 10/08/2008
15:59 Eco −(000)

Boost

Config.

Display

LOREME

19 20 21 22 23 24 25 26 27   28 29 30 31 32 33 34 35 36
A / B / C   Output max 50V 0.5A   Output max 50V 0.5A   Boost

i1(5A) i2(5A) i3(5A)   230V ac 1.5VA +/−15%   PWR   PWR
1 2 3 4 5 6 7 8 9   10 11 12 13 14 15 16 17 18