PROGRAMMABLE HIGH CURRENT INDICATOR
IPL50

- ***IPL50:*** *U, I, F, Cos, P, Q, S Measure*
- ***IPL50/S:*** *Analog outputs*
- ***IPL50/C:*** *RS485 link (Modbus)*
- ***IPL50/A:*** *Safeties management*
- ***Balanced rate:*** *Single-phase, three-phase with or without neutral,* ***continuous and alternative*** *40 to 400 Hz*
- ***Display:*** *10 000 points available in Red, Green, Yellow, Blue*

The IPL50 is a programmable indicator for balanced electric network, equipped with relays or analog outputs, or with RS485 link.

COMMON FEATURES:

Measure :
- single-phase, balanced three-phase, with or without neutral,
- continuous voltage and current (+/- 700 V, +/- 5 A),
- alternative RMS voltage and current (500 Vac, 5 Aac),
- active (P), reactive (Q), apparent (S) power,
- cos φ (power factor),
- frequency (40 to 400 Hz),
- configurable current and voltage transformation ratio.

Display:
- 10 000 points resolution, 4 LED digits of 14,2 mm,
- 7 display value control leds,
- 4 alarm control leds,
- displayed value selection (U, I, F, Cosφ, P, Q, S) by push-button,
- fixed or scrolling display,
- automatic decimal point position.

2 configurable relays in:
alarm:
- measure type,
- alarm type,
- threshold(s),
- hysteresis, ...

energy counting:
- measure type,
- impulse load value.

GENERAL CHARACTERISTICS:

- universal 2 ranges power supply :
  20.....80 Vac/dc or
  85.....265 Vac/dc (on request)

- configuration RS232 digital link,
- demountable connector, connecting by screw-terminals,
- DIN panel case : 96 x 48 x 144mm

The IPL50 has been imagined according to the problems met in industrial environments:
- inputs / ouputs / power supply / relay galvanic insulation,
- configuration parameters saved in EEPROM,
- watchdog supervising the program process,
- regeneration of the internal parameters on each measure,
- stability towards ambient temperature variations.

CONFIGURATION:

By push-button on front face:
- alarm threshold adjustment (if access validated in RS232 configuration),
- change of the visualized measure type (if function validated in RS232 configuration).

RS232 link:
The IPL50 can interact with any system emulating a terminal (cable supplied on single request), without any interface.

Through the terminal, the user will be able to:
- visualize the measure and configurate the IPL50.

The configuration mode allows :
- to choose the network type,
- the relay configuration,
- the analog outputs configuration,
- the RS485 digital output configuration.

Version and order code :

IPL50/S: + 2 configurable analog outputs:
- measure type (U, I, F, P, Q, S, cos φ),
- measure scale,
- ouput type (current, voltage),
- output scale.

IPL50/C: Configurable RS485 digital output :
- address (1 to 255),
- transmission speed (600 to 19200 bauds),
- parity (even, odd, without),
- MODBUS/JBUS protocol,
- data format in floating 32 bits IEEE and integers 16 bits.

IPL50/A: Extensive configuration of the alarms:
- high, low alarm, with inside or outside window (different modes to activate and de-activate the alarms),
- activation direction, threshold(s), hysteresis,
- alarm storage (with reset push-button),
- positive or negative relays security (relays excitation or de-excitation during the alarm activation),
- alarms time-delay (delay at the activation / de-activation),
- alarms validation on condition linked to another value (ex.: alarm on cosφ with a current presence condition).

Note: The different options can not be held concurrently.

90 days accuracy (20 °C +/- 2 °C) *DATA SHEET CAN BE DOWNLOADED ON* **WWW.LOREME.FR** **TECHNICAL SPECIFICATIONS**

INPUT

TYPE	RANGE	ACCURACY
Alternative voltage	500 V (direct)	+/- 1.5 V
Continuous voltage	+/- 700 V (direct)	+/- 1.5 V
Input impedance	2 MOhms	
Overload	1500 V during 3 s	
Measure threshold	5 V	
Absorbed power	0.12 W	
Alternative current	5 A (direct)	+/- 15 mA
Continuous current	+/- 5 A (direct)	+/- 15 mA
Input impedance	0.05 Ohms	
Overload	6 x IN during 3 s	
Measure threshold	0.05 A	
Absorbed power	1.25 W	

Other calibers on request, 1A current, 150V voltage...
Note: use a transformer for an upper range

Frequency	40 to 400 Hz	+/- 0.2 %

METROLOGY

(the precisions are given in percentage of the full calibres)

Active power	+/- 0.6 %
Reactive power	+/- 1 % (in % of app. Pwr.)
Cos φ	+/- 0.6 %

(conditions: freq 45/65 Hz, cos φ > 0.7; peak factor 1.4; U/I calibres 10 to 90 %)

- sampling rates / response time:
10 per sec / 100 ms (on voltage, current, frequency measure)
6 per sec / 180 ms (in power measure (P, Q, S), cos φ)

ANALOG OUPUT (IPL 50/S)

TYPE	RANGE	ACCURACY
Current	0 ... 4 ... 20 mA	+/- 10 µA
Load	730 Ohms	
Voltage	0 ... 5 ... 10 V	+/- 5 mV
on External shunt	500 Ohms	

The outputs are linked to the ground.

RELAYS

Switching power	5 A /250 V
Insulated reverser contact	1500 Vac
Counting impulse rate	5 / s max.
Impulse width	180 ms

POWER SUPPLY

(To be specified on order)
20.....80 Vac/dc or 85.....265 Vac/dc

RECOMMENDED OPERATING CONDITIONS

Temperature	
Operating	-10 to 60 °C
Storage	-20 to 85 °C
Influence (% of the full scale)	< 0.03 % / °C
Relative humidity	85 % (not condensed)
Weight	495 g
Tightness	IP20 (for option IP54 or IP65)
Dielectric strength	1500 Veff continuous (Input/Pwr/Outputs/Relays)

Electromagnetic compatibility

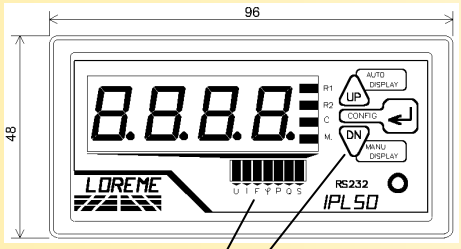
Generic standards: **NFEN50081-2 / NFEN50082-2**

CE

EN55011	meet	group 1 / class A			
EN61000-4-2	no influence	B	**ENV50140**	< +/- 5 %	A
EN61000-4-4	< +/- 5 %	B	**ENV50141**	< +/- 10 %	A
EN61000-4-5	< +/- 5 %	B	**ENV50204**	no influence	A
EN61000-4-8	no influence	A			
EN61000-4-11	< +/- 5 %	B	DBT	**73/23/CEE**	

WIRING AND OUTLINE DIMENSIONS:

CUT OFF FORMAT: 92 x 42



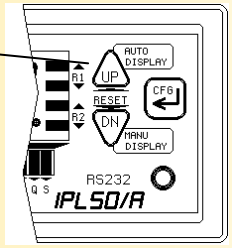
Displayed measure type indicating leds.

Control keyboard:

- "UP" key allowing measures automatic scrolling or alarms thresholds adjustment.

- "DOWN" key allowing measures manual scrolling or alarms thresholds adjustment.

- "Cfg" key allowing alarms thresholds adjustment.



On IPL50A version a simultaneously pressing on "UP" and "Down" keys allow to reset memorized alarms.