

Protection relay for DC current and voltage High isolation voltage (10kV)

RPL34HiG



• Voltage, current and power monitoring

Voltage measurement : +/-1500Vdc max

Current measurement : +/-150mVdc maxi on external shunt

Calculation of consumed or generated power

• 3 configurable alarms relay

Over or under voltage, over or under current

Overpowering, under load, ...

• 4-20mA output (option)

• isolation: 10kVdc,

10mm internal creepage distance

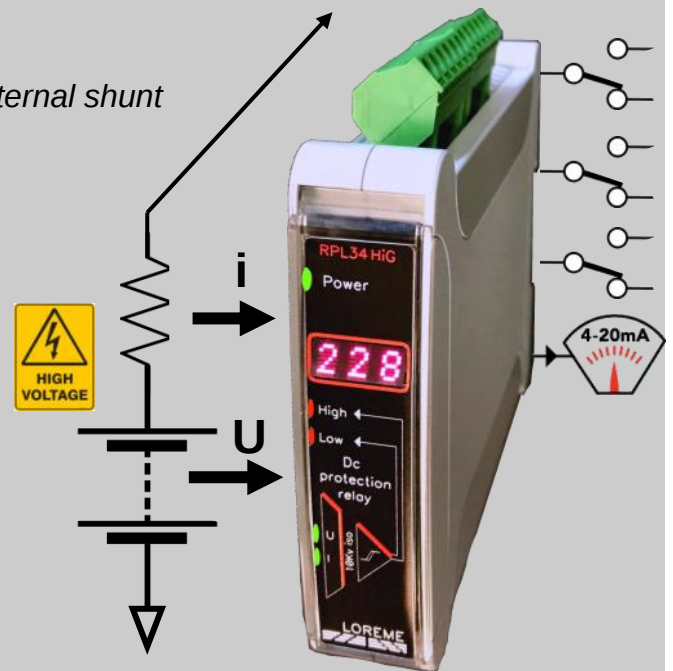
• Display Measure and default

• Configuration

user setting with front face pushbuttons

• Power supply universal 20... 265Vac-dc

• SIL2 option in accordance to IEC 61508



The relay RPL34HiG allows the monitoring of machines, plants and systems requiring a high voltage isolation. Usable in photovoltaic domain or with continuous current machine.

Functions:

Loss or failure voltage and current detection,
under-voltage and over-voltage detection,
under-current and over-current detection,
monitoring of consumed or generated power,
time delay and rearm behaviour configurable.

Relays:

Up to 3 output relays. Changeover contact, high or low alarm detection.
Shunt breaking detection for input current (mV).
- Parameters like threshold, sense, hysteresis and delay (activation and deactivation) are individually configurable on each relay.

Front face:

- Hinged front face (access to configuration buttons and serial link).
- 4 digit alphanumeric LED matrix display.
- LEDs for relay status indication.
- 2 push buttons for:
 - * The fully configuration of device
 - * Selection of displayed value (U, I, P)
 - * Setting of alarm thresholds,

Front face:

- The device is configurable by the front face or with the RS232 serial link. (USB/3.5mm jack cable provided separately)
- Firmware upgrade possible via the USB link

Feature:

- DIN rail mounting (symmetrical),
- Pluggable screw terminal block (2.5 mm²),
- Protection class (house/terminal block) : IP20, conformal coating,
- Embedded varistor for surge input protection.

Associated current shunt:

http://www.loreme.fr/fichtech/SHUNT_eng.pdf



Functional security data:

component type B , HFT = 0

$\lambda f = 794$ fit (1/MTBF)

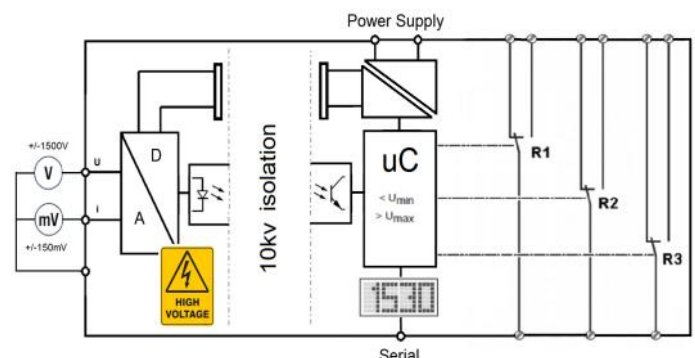
DC = 91.6 % (diagnostic coverage)

SFF = 92.4 % (Safe failure fraction)

PFH = 67 fit (probability of dangerous failure per hour)



Synoptic:



Version and order code:

[Request a quote](#)

RPL34HiG : 3 electromechanical output relays, changeover contact
auxiliary power supply 20...265Vac/dc

RPL34HiG/S : 1 analog 4-20mA output (mirror of U, I or P)
3 electromechanical output relays, changeover contact
auxiliary power supply 20...265Vac/dc

/SIL2 option : SIL2 version in accordance to IEC 61508

MEASURE INPUT

TYPE	RANGE	ACCURACY
HV input rated voltage	+/- 1000Vdc (+/- 1500Vdc max)	+/-0.15%
mV input rated voltage	+/- 100 mVdc (+/- 150 mVdc max)	+/-0.15%
Overload	10x rating voltage for 3sec	
Input impedance	> 10 Mohms for HV input > 100 Kohms for mV input (for shunt)	

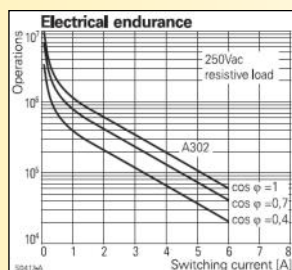
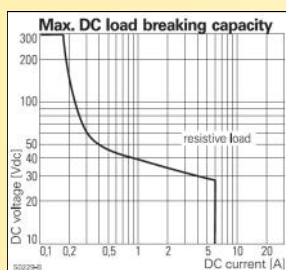
METROLOGY

(accuracy are express in % of full scale)

Active or continuous power +/- 0.5 %

RELAYS

Free potential changeover contact	
impulse withstand voltage (1.2 / 50 μ s)	6000 V
AC switching power	440 Vac / 6Aac, 1500VA
DC switching power	300 Vdc / 0.15 Adc
Load type	lifetime (nbr of operations)
5 A, 250 Vac, resistive	1×10^5
2 A, 250 Vac, cos phi 0.4	2×10^5
1 A, 24 Vdc, L / R=48 ms	2×10^5
6 A, 250 Vac, resistive	7×10^4
3 A, 250 Vac, cos phi 0.4	2×10^5
Programmable response time :	0.3...600 s (standard version)



AUXILIARY POWER SUPPLY

standard:	20 ... 265 Vac-dc, 2.5 VA
Low voltage:	11 ... 30 Vdc, 2.5VA

ENVIRONMENT

Operating temperature	-25 to 60 °C
Storage temperature	-40 to 85 °C
Humidity	85 % not condensed

Weight	160 g
Protection rating	IP 20

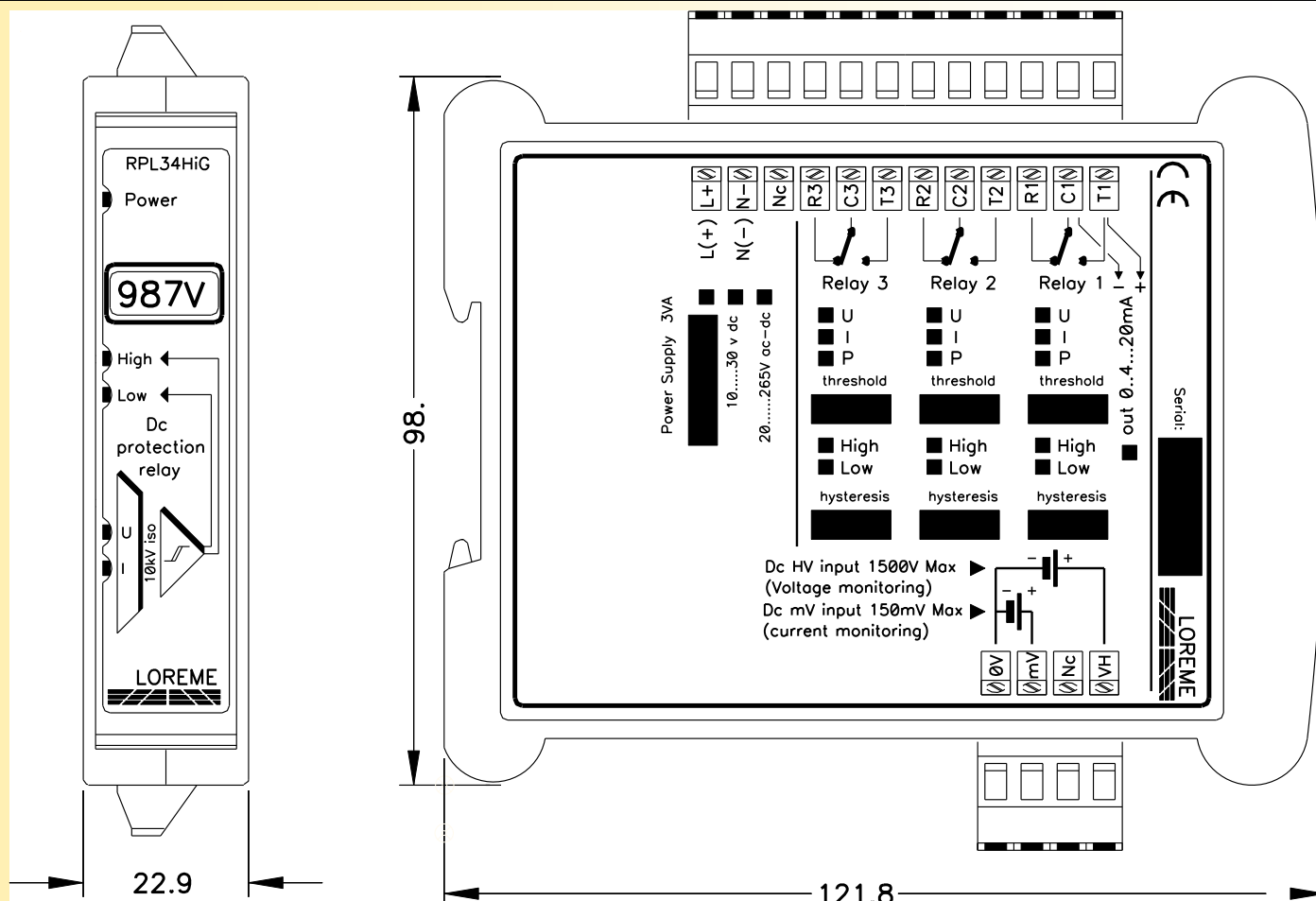
Dielectric strength:	
Measure input/Power supply	10KVdc (8KVac)
Measure input/Contacts	10KVdc (8KVac)
Power supply/Contacts	3KVdc (2.5KVac)
Insulation resistance	> 500 Mohms
Capacity	< 100 pF
MTBF (MIL HDBK 217F)	> 1 259 000 Hrs @ 25°C
Life time	> 200 000 Hrs @ 30°C
Shock CEI 60068-2-27 (operating)	5 G / 11 ms
Bump CEI 60068-2-29 (transportation)	30 G / 6 ms
Vibrations CEI 60068-2-6 (operating)	1 G / 10 - 150 Hz
Vibrations CEI 60068-2-6 (transportation)	2 G / 10 - 150 Hz

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

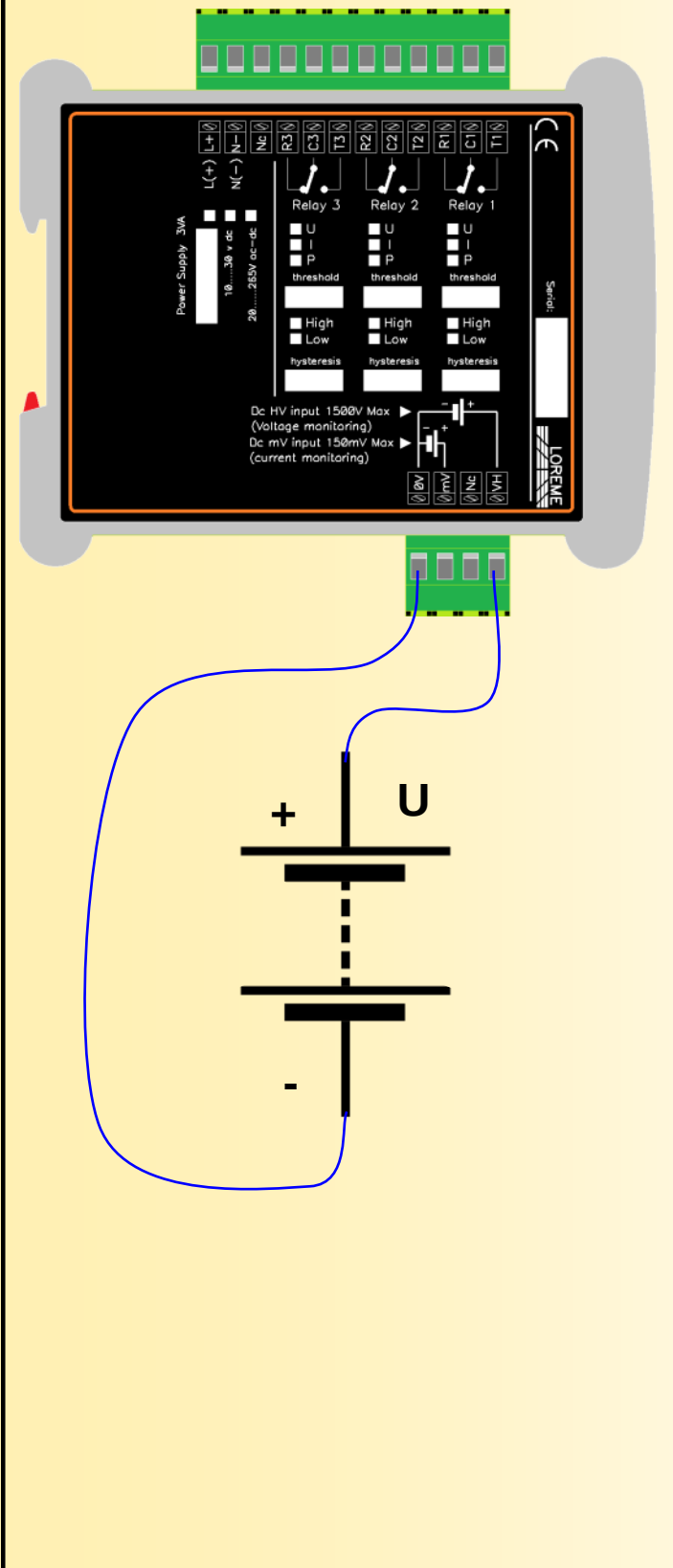
Immunity standard for industrial environments EN 61000-6-2		Emission standard for industrial environments EN 61000-6-4
EN 61000-4-2 ESD	EN 61000-4-8 AC MF	EN 55011 group 1 class A
EN 61000-4-3 RF	EN 61000-4-9 pulse MF	
EN 61000-4-4 EFT	EN 61000-4-11 AC dips	
EN 61000-4-5 CWG	EN 61000-4-12 ring wave	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



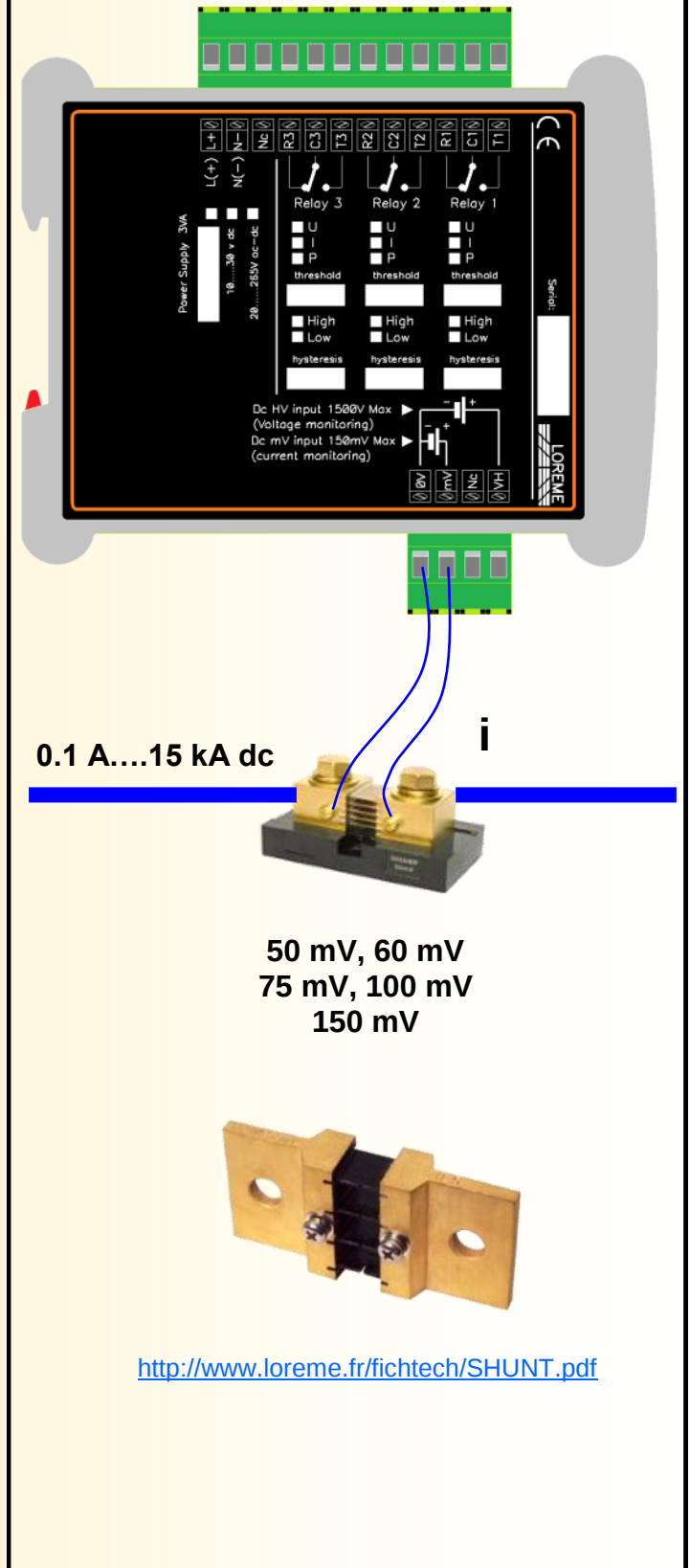
WIRING AND OUTLINE DIMENSIONS:



DC voltage measurement



DC current measurement on external shunt



Using and wiring of current sensors according to application



Voltage, current and power measurement with shunt on hot point

Voltage, current and power measurement with shunt on cold point

