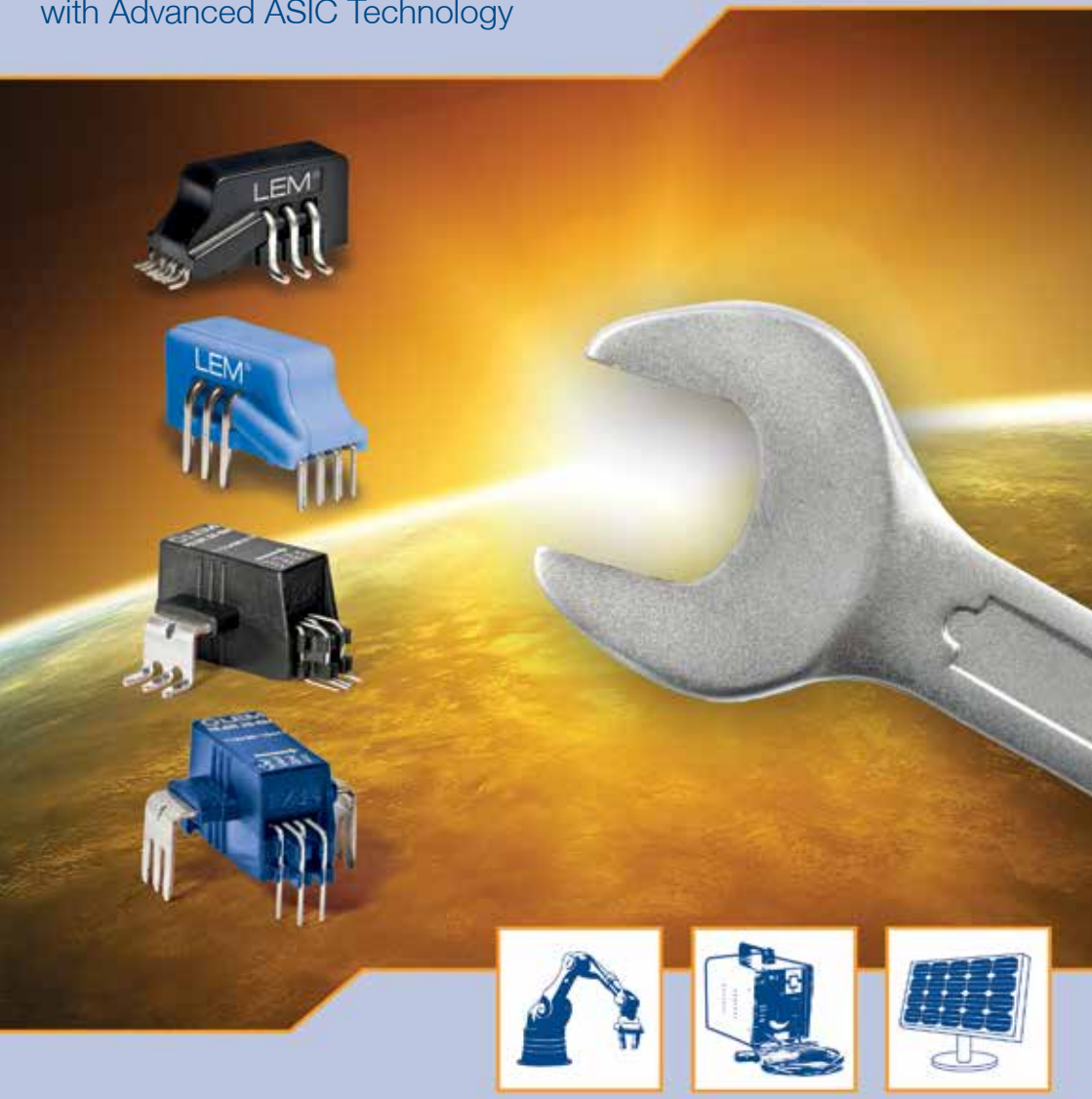
Commercial Information

HLSR / HO Series Current Transducers

A new standard of performance with Advanced ASIC Technology

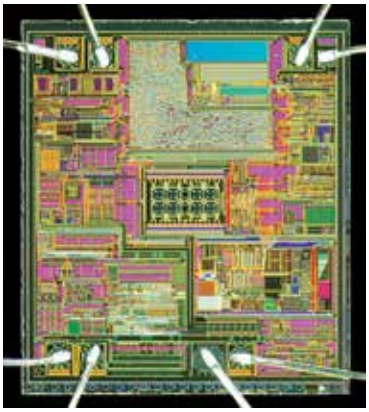


LEM

HLSR / HO Series

Current Transducers with Advanced ASIC technology

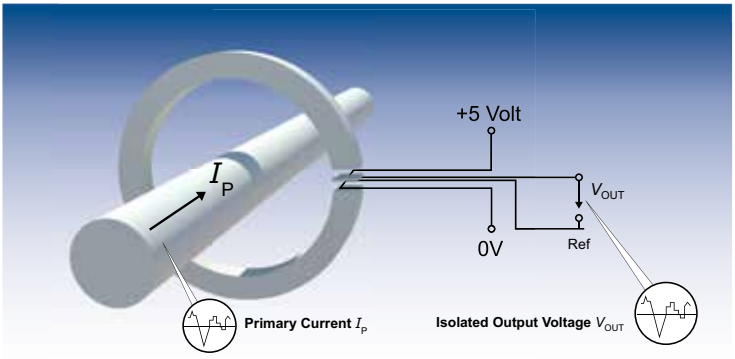
Special effort has been focused on a new Application Specific Integrated Circuit (ASIC) to meet industry trends in power electronics for optimisation of costs & reduction of size, together with performance improvement, resulting in a new generation of ASIC specific current transducers based on the Open Loop Hall effect technology leading to the development of the HLSR & HO series.



New ASIC die, a complete Open Loop Hall effect current transducer on a single chip.

With various versions of this ASIC at its heart:

- the HO models have been designed for current measurements from 2.67 A to 25 A nominal, with nine possible current ranges selectable either by digital programmability or by multi-range PCB configuration.
- the HLSR models have been designed for current measurements from 10 A to 50 A nominal, with five possible current ranges.



Open-Loop, Hall-Effect current transducers using an ASIC in the gap of the core.

HLSR Series

The perfect fit for your control system

HLSR - A cost-effective current transducer that out-performs shunts in every way.

The compact package of the HLSR requires only 387 mm^2; less board area than many shunt solutions. Large clearance/creepage distances ensure safety, and its high performance supports accurate measurements across a wide temperature range of -40°C to +105°C.
The LEM HLSR is a single compact device that eliminates complexity in your design.

The LEM HLSR series:

- High performance open-loop ASIC based current transducer
- 10 A, 20 A, 32 A, 40 A and 50 A nominal current versions
- Single +5 V or +3.3 V power supply
- Fast response time: 2.5 µs
- Full galvanic isolation
- 8 mm clearance/creepage distances + CTI 600
- Low offset and gain drifts:
  Improved accuracy @ +105°C: ±3.4 % of I_{PN}
- Over-drivable reference voltage @ 0.5 to 2.65 V or 0.5 to 1.7 V (respec. +5 or +3.3 V)
- Through-hole and SMT packages

HLSR Series

I_{PN} = 10 A ... 50 A

I_{PN} A	I_P A	Technology	U_C V	V_{out} @ I_{PN}	BW kHz	X @ I_{PN}, T_A = 25°C %	T_A °C	Connection Primary PCB	Connection Primary Aperture, busbar, other	Connection Secondary PCB	Connection Secondary Other	UR or UL	Packaging No	Type	Features
10	± 25	O/L	+ 5/0	2.5V or V_{ref} ±0.8V	DC-400 (-3dB)	1	-40...+105	●		●		●	1	HLSR 10-P 1)	
10	± 25	O/L	+ 5/0	2.5V or V_{ref} ±0.8V	DC-400 (-3dB)	1	-40...+105	SMD		SMD		●	2	HLSR 10-SM 1)	
10	± 25	O/L	+ 3.3/0	1.65V or V_{ref} ±0.460V	DC-400 (-3dB)	1	-40...+105	●		●		●	1	HLSR 10-P/SP33 1)	
10	± 25	O/L	+ 3.3/0	1.65V or V_{ref} ±0.460V	DC-400 (-3dB)	1	-40...+105	SMD		SMD		●	2	HLSR 10-SM/ SP33 1)	
20	± 50	O/L	+ 5/0	2.5V or V_{ref} ±0.8V	DC-400 (-3dB)	1	-40...+105	●		●		●	1	HLSR 20-P 1)	
20	± 50	O/L	+ 5/0	2.5V or V_{ref} ±0.8V	DC-400 (-3dB)	1	-40...+105	SMD		SMD		●	2	HLSR 20-SM 1)	
20	± 50	O/L	+ 3.3/0	1.65V or V_{ref} ±0.460V	DC-400 (-3dB)	1	-40...+105	●		●		●	1	HLSR 20-P/SP33 1)	
20	± 50	O/L	+ 3.3/0	1.65V or V_{ref} ±0.460V	DC-400 (-3dB)	1	-40...+105	SMD		SMD		●	2	HLSR 20-SM/ SP33 1)	
32	± 80	O/L	+ 5/0	2.5V or V_{ref} ±0.8V	DC-400 (-3dB)	1	-40...+105	●		●		●	1	HLSR 32-P 1)	
32	± 80	O/L	+ 5/0	2.5V or V_{ref} ±0.8V	DC-400 (-3dB)	1	-40...+105	SMD		SMD		●	2	HLSR 32-SM 1)	
32	± 80	O/L	+ 3.3/0	1.65V or V_{ref} ±0.460V	DC-400 (-3dB)	1	-40...+105	●		●		●	1	HLSR 32-P/SP33 1)	
32	± 80	O/L	+ 3.3/0	1.65V or V_{ref} ±0.460V	DC-400 (-3dB)	1	-40...+105	SMD		SMD		●	2	HLSR 32-SM/ SP33 1)	
40	± 100	O/L	+ 5/0	2.5V or V_{ref} ±0.8V	DC-400 (-3dB)	1	-40...+105	●		●		●	1	HLSR 40-P 1)	
40	± 100	O/L	+ 5/0	2.5V or V_{ref} ±0.8V	DC-400 (-3dB)	1	-40...+105	SMD		SMD		●	2	HLSR 40-SM 1)	
40	± 100	O/L	+ 3.3/0	1.65V or V_{ref} ±0.460V	DC-400 (-3dB)	1	-40...+105	●		●		●	1	HLSR 40-P/SP33 1)	
40	± 100	O/L	+ 3.3/0	1.65V or V_{ref} ±0.460V	DC-400 (-3dB)	1	-40...+105	SMD		SMD		●	2	HLSR 40-SM/ SP33 1)	
50	± 125	O/L	+ 5/0	2.5V or V_{ref} ±0.8V	DC-400 (-3dB)	1	-40...+105	●		●		●	1	HLSR 50-P 1)	
50	± 125	O/L	+ 5/0	2.5V or V_{ref} ±0.8V	DC-400 (-3dB)	1	-40...+105	SMD		SMD		●	2	HLSR 50-SM 1)	
50	± 125	O/L	+ 3.3/0	1.65V or V_{ref} ±0.460V	DC-400 (-3dB)	1	-40...+105	●		●		●	1	HLSR 50-P/SP33 1)	
50	± 125	O/L	+ 3.3/0	1.65V or V_{ref} ±0.460V	DC-400 (-3dB)	1	-40...+105	SMD		SMD		●	2	HLSR 50-SM/ SP33 1)	

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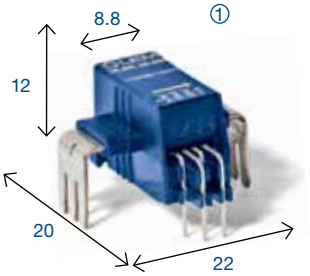
1) Ref_{IN} & Ref_{OUT} modes

Ask your sales person about kits (5 pieces) for tests purpose at special price.



** Dedicated data sheets are the only recognized reference documents for the given performances and data – Data sheets: www.lem.com

HO Series

Dawn of a new intelligence for current measurement

HO - Interactive, user-programmable current transducer.

Configure the appropriate HO by setting its operational characteristics using a simple microcontroller interface. Its outstanding performance gives better control, flexibility and improves systems efficiency while minimizing inventory with a unique configurable device.

The LEM HO Series:

Programmable Functions		
Nominal current ranges	3 possibilities: 8 / 15 / 25	A
Overcurrent detection	16 possibilities of thresholds	A
Response time	3 possibilities: 6 / 3.5 / 2	µs
Internal reference voltage	4 possibilities: 0.5 / 1.5 / 1.65 / 2.5	V
Low power mode	2 possibilities: Active or Inactive	
Standby mode	2 possibilities: Active or Inactive	
Fault reporting mode	2 possibilities: Active or Inactive	

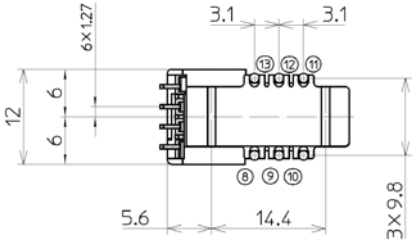
- Single +5 V or +3.3 V power supply
- 8 mm clearance/creepage distances + CTI 600
- Low offset and gain drifts: Improved accuracy @ +105°C : ±3.8 % of I_{PN}
- Over-drivable reference voltage @ 0.5 to 2.65 V or 0.5 to 1.7 V (respec. +5 or +3.3 V)
- Through-hole and SMT packages
- Overcurrent detection on a dedicated pin

HO Series
Various current ranges

With LEM's latest ASIC generation at its heart, the HO models are designed for current measurements from 2.67 A to 25 A nominal, with nine possible current ranges selectable either by digital programmability (on the programmable versions) or by multi-range PCB configuration.

The HO construction uses three U-shaped primary terminals integrated into the housing, providing the designer with a greater flexibility to perfectly adapt the measuring range of the current transducer to the application. The primary resistance is 0.36 mΩ per conductor @ +25°C.

Possible nominal ranges of HO 25-NPPR/-NSMPR with the various primary bus bar configurations:



Number of primary turns	Primary resistance current rms R_P(typ.)[mΩ] @ +25°C	Recommended PCB connections	Primary nominal current rms, I_{PN} [A] Range 1	2	3
1	0.12		8	15	25
2	0.54		4	7.5	12.5
3	1.18		2.67	5	8.33

Overcurrent detection (OCD function)

The programmable overcurrent detection (OCD) function is provided on a dedicated pin, to be set by the user over 16 programmable levels up to 5.8 x I_{PN} (the nominal primary current). The OCD output turns on within 2 µs when the corresponding overcurrent occurs, switching from a high (5 V) to a low level (0 V). The overcurrent threshold is detected with 10 % accuracy; the user can set a minimum duration of the OCD output pulse of 1 ms if required, to ensure that a short overload can still be detected by an external micro-controller.

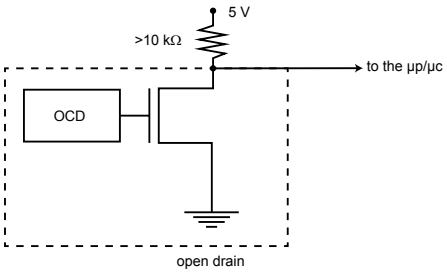
On the models programmed in factory, the overcurrent function is still provided on a dedicated pin at a pre-set value.

By externalising the OCD, the transducer is freed from measuring the peaks which are required for protection and enables its full measuring range to be used to measure the application's dynamic operating range.

HO Series
Overcurrent detection (OCD function)

LEM's HO series allows a trip threshold of 580 % of the nominal rating of the transducer. This means that the externalised OCD can detect currents which are higher than the transducer's rated measurement range, enabling a transducer rated at 8 A to be programmed for an OCD threshold of 45.6 A.

A further benefit of the OCD pin is that it can be used to replace a dedicated overcurrent detection crowbar circuit which usually consists of a comparator and a number of resistors. By eliminating these discrete components, the OCD pin offers the additional benefit of reducing component count and board space.



LEM offers the HO models in 2 main versions:

- Models programmable by the user: HO 25-NPPR & HO 25-NSMPR are pre-programmed in the factory but have the possibility to change parameters afterwards via programmation by the user.

  Users program the HO transducer through a connection to a host microcontroller: when the V_{Ref} pin is forced to the supply voltage, the output pin becomes the I/O port of a single wire bus interface. Over this interface, serial data comprising a 12-bit word conveys the user's configuration choices, such as, among others: range selection, the internal reference voltage, and the overcurrent detection threshold. Data is sent over this interface to the transducer at 10 kbits/s and programming takes only a few hundred milliseconds. This programming procedure may be carried out at any time, so the operating parameters of the HO transducer may be re-assigned, even during operation of the device in its application (information on setting per default page 8).

- Models programmed at the factory as per page 9. These models can not be re-programmed by the user afterwards.

  Parameters are fixed for the HO 8-NP, HO 15-NP, HO 25-NP, HO 8-NSM, HO 15-NSM, HO 25-NSM.

However, if nothing matches with your needs, do not hesitate to contact LEM. The shown models are just a small amount of the huge possible solutions of the HO.

HO Series
I_{PN} = 2.67 A ... 25 A

Programmable / User
HO 25-NPPR / HO 25-NSMPR

I_{PN} A	I_P A	Technology	U_C V	V_{out} @ I_{PN}	BW kHz	X @ I_{PN}, T_A = 25°C %	T_A °C	Connection: Primary PCB	Connection: Primary Aperture, busbar, other	Connection: Secondary PCB	Connection: Secondary Other	UR or UL	Packaging No	Type	Features
2.67 ; 5 ; 8.33	± 6.67 ; ± 12.5 ; ± 20.83	O/L	+ 5/0	2.5 ; 1.65 ; 1.5 ; 0.5 V or V_{ref} ±0.8V	DC-100 ; 250 ; 600 (-3dB)	1	-40...+105	●		●		●	4	HO 25-NPPR [1] Orange for default setting	P
4 ; 7.5 ; 12.5	± 10 ; ± 18.75 ; ± 31.25	O/L	+ 5/0	2.5 ; 1.65 ; 1.5 ; 0.5 V or V_{ref} ±0.8V	DC-100 ; 250 ; 600 (-3dB)	1	-40...+105	●		●		●	4	HO 25-NPPR [1] Orange for default setting	P
8 ; 15 ; 25	± 20 ; ± 37.5 ; ± 62.5	O/L	+ 5/0	2.5 ; 1.65 ; 1.5 ; 0.5 V or V_{ref} ±0.8V	DC-100 ; 250 ; 600 (-3dB)	1	-40...+105	●		●		●	4	HO 25-NPPR [1] Orange for default setting	P
2.67 ; 5 ; 8.33	± 6.67 ; ± 12.5 ; ± 20.83	O/L	+ 5/0	2.5 ; 1.65 ; 1.5 ; 0.5 V or V_{ref} ±0.8V	DC-100 ; 250 ; 600 (-3dB)	1	-40...+105	SMD		SMD		●	3	HO 25-NSMPR [1] Orange for default setting	P
4 ; 7.5 ; 12.5	± 10 ; ± 18.75 ; ± 31.25	O/L	+ 5/0	2.5 ; 1.65 ; 1.5 ; 0.5 V or V_{ref} ±0.8V	DC-100 ; 250 ; 600 (-3dB)	1	-40...+105	SMD		SMD		●	3	HO 25-NSMPR [1] Orange for default setting	P
8 ; 15 ; 25	± 20 ; ± 37.5 ; ± 62.5	O/L	+ 5/0	2.5 ; 1.65 ; 1.5 ; 0.5 V or V_{ref} ±0.8V	DC-100 ; 250 ; 600 (-3dB)	1	-40...+105	SMD		SMD		●	3	HO 25-NSMPR [1] Orange for default setting	P
2.67 ; 5 ; 8.33	± 6.67 ; ± 12.5 ; ± 20.83	O/L	+ 3.3/0	1.65 ; 1.5 ; 0.5 V or V_{ref} ±0.460V	DC-100 ; 250 ; 600 (-3dB)	1	-40...+105	●		●		●	4	HO 25-NPPR/SP33 [1] Orange for default setting	P
4 ; 7.5 ; 12.5	± 10 ; ± 18.75 ; ± 31.25	O/L	+ 3.3/0	1.65 ; 1.5 ; 0.5 V or V_{ref} ±0.460V	DC-100 ; 250 ; 600 (-3dB)	1	-40...+105	●		●		●	4	HO 25-NPPR/SP33 [1] Orange for default setting	P
8 ; 15 ; 25	± 20 ; ± 37.5 ; ± 62.5	O/L	+ 3.3/0	1.65 ; 1.5 ; 0.5 V or V_{ref} ±0.460V	DC-100 ; 250 ; 600 (-3dB)	1	-40...+105	●		●		●	4	HO 25-NPPR/SP33 [1] Orange for default setting	P
2.67 ; 5 ; 8.33	± 6.67 ; ± 12.5 ; ± 20.83	O/L	+ 3.3/0	1.65 ; 1.5 ; 0.5 V or V_{ref} ±0.460V	DC-100 ; 250 ; 600 (-3dB)	1	-40...+105	SMD		SMD		●	3	HO 25-NSMPR/SP33 [1] Orange for default setting	P
4 ; 7.5 ; 12.5	± 10 ; ± 18.75 ; ± 31.25	O/L	+ 3.3/0	1.65 ; 1.5 ; 0.5 V or V_{ref} ±0.460V	DC-100 ; 250 ; 600 (-3dB)	1	-40...+105	SMD		SMD		●	3	HO 25-NSMPR/SP33 [1] Orange for default setting	P
8 ; 15 ; 25	± 20 ; ± 37.5 ; ± 62.5	O/L	+ 3.3/0	1.65 ; 1.5 ; 0.5 V or V_{ref} ±0.460V	DC-100 ; 250 ; 600 (-3dB)	1	-40...+105	SMD		SMD		●	3	HO 25-NSMPR/SP33 [1] Orange for default setting	P

**

Pre-set parameters in factory which are able to be re-programmed by user.

- I_{PN} = 25A
- Response time = 2 µs
- Low power mode non active
- Fault reporting mode active
- OCD set @ 2.5 x I_{PN} (peak value)

1) Ref_{IN} & Ref_{out} modes

SMT Version ③

Through-hole Version ④

P = Programmable by the user at any time for the current range (between 3 ranges) ; The internal reference (between 3 or 4 references) ; The response time (between 3 response times) ; Lower comsumption mode ; Overcurrent detection level ; Device faulty indication mode ; Standby mode.

** Dedicated data sheets are the only recognized reference documents for the given performances and data – Data sheets: www.lem.com

HO Series

I_{PN} = 2 A ... 12.5 A

HO 8 ... 25-NP-xxxx

Programmed at factory
HO 8 ... 25-NSM-xxxx

I_{PN} A	I_P A	Technology	U_C V	V_{out} @ I_{PN}	BW kHz	X @ I_{PN}, T_A = 25°C %	T_A °C	Connection: Primary PCB	Connection: Primary Aperture, busbar, other	Connection: Secondary PCB	Connection: Secondary Other	UR or UL	Packaging No	Type	Features
2.67	± 6.67	O/L	+ 5/0	2.5V or V_{ref} ±0.8V	DC-250 (-3dB)	1	-40...+105	●		●		●	4	HO 8-NP-0000 1)	
2.67	± 6.67	O/L	+ 5/0	2.5V or V_{ref} ±0.8V	DC-250 (-3dB)	1	-40...+105	SMD		SMD		●	3	HO 8-NSM-0000 1)	
2.67	± 6.67	O/L	+ 3.3/0	1.65V or V_{ref} ±0.460V	DC-250 (-3dB)	1	-40...+105	●		●		●	4	HO 8-NP/ SP33-1000 1)	
2.67	± 6.67	O/L	+ 3.3/0	1.65V or V_{ref} ±0.460V	DC-250 (-3dB)	1	-40...+105	SMD		SMD		●	3	HO 8-NSM/ SP33-1000 1)	
4	± 10	O/L	+ 5/0	2.5V or V_{ref} ±0.8V	DC-250 (-3dB)	1	-40...+105	●		●		●	4	HO 8-NP-0000 1)	
4	± 10	O/L	+ 5/0	2.5V or V_{ref} ±0.8V	DC-250 (-3dB)	1	-40...+105	SMD		SMD		●	3	HO 8-NSM-0000 1)	
4	± 10	O/L	+ 3.3/0	1.65V or V_{ref} ±0.460V	DC-250 (-3dB)	1	-40...+105	●		●		●	4	HO 8-NP/ SP33-1000 1)	
4	± 10	O/L	+ 3.3/0	1.65V or V_{ref} ±0.460V	DC-250 (-3dB)	1	-40...+105	SMD		SMD		●	3	HO 8-NSM/ SP33-1000 1)	
5	± 12.5	O/L	+ 5/0	2.5V or V_{ref} ±0.8V	DC-250 (-3dB)	1	-40...+105	●		●		●	4	HO 15-NP-0000 1)	
5	± 12.5	O/L	+ 5/0	2.5V or V_{ref} ±0.8V	DC-250 (-3dB)	1	-40...+105	SMD		SMD		●	3	HO 15-NSM-0000 1)	
5	± 12.5	O/L	+ 3.3/0	1.65V or V_{ref} ±0.460V	DC-250 (-3dB)	1	-40...+105	●		●		●	4	HO 15-NP/ SP33-1000 1)	
5	± 12.5	O/L	+ 3.3/0	1.65V or V_{ref} ±0.460V	DC-250 (-3dB)	1	-40...+105	SMD		SMD		●	3	HO 15-NSM/ SP33-1000 1)	
7.5	± 18.75	O/L	+ 5/0	2.5V or V_{ref} ±0.8V	DC-250 (-3dB)	1	-40...+105	●		●		●	4	HO 15-NP-0000 1)	
7.5	± 18.75	O/L	+ 5/0	2.5V or V_{ref} ±0.8V	DC-250 (-3dB)	1	-40...+105	SMD		SMD		●	3	HO 15-NSM-0000 1)	
7.5	± 18.75	O/L	+ 3.3/0	1.65V or V_{ref} ±0.460V	DC-250 (-3dB)	1	-40...+105	●		●		●	4	HO 15-NP/ SP33-1000 1)	
7.5	± 18.75	O/L	+ 3.3/0	1.65V or V_{ref} ±0.460V	DC-250 (-3dB)	1	-40...+105	SMD		SMD		●	3	HO 15-NSM/ SP33-1000 1)	
8	± 20	O/L	+ 5/0	2.5V or V_{ref} ±0.8V	DC-250 (-3dB)	1	-40...+105	●		●		●	4	HO 8-NP-0000 1)	
8	± 20	O/L	+ 5/0	2.5V or V_{ref} ±0.8V	DC-250 (-3dB)	1	-40...+105	SMD		SMD		●	3	HO 8-NSM-0000 1)	
8	± 20	O/L	+ 3.3/0	1.65V or V_{ref} ±0.460V	DC-250 (-3dB)	1	-40...+105	●		●		●	4	HO 8-NP/ SP33-1000 1)	
8	± 20	O/L	+ 3.3/0	1.65V or V_{ref} ±0.460V	DC-250 (-3dB)	1	-40...+105	SMD		SMD		●	3	HO 8-NSM/ SP33-1000 1)	
8.33	± 20.83	O/L	+ 5/0	2.5V or V_{ref} ±0.8V	DC-250 (-3dB)	1	-40...+105	●		●		●	4	HO 25-NP-0000 1)	
8.33	± 20.83	O/L	+ 5/0	2.5V or V_{ref} ±0.8V	DC-250 (-3dB)	1	-40...+105	SMD		SMD		●	3	HO 25-NSM-0000 1)	
8.33	± 20.83	O/L	+ 3.3/0	1.65V or V_{ref} ±0.460V	DC-250 (-3dB)	1	-40...+105	●		●		●	4	HO 25-NP/ SP33-1000 1)	
8.33	± 20.83	O/L	+ 3.3/0	1.65V or V_{ref} ±0.460V	DC-250 (-3dB)	1	-40...+105	SMD		SMD		●	3	HO 25-NSM/ SP33-1000 1)	
12.5	± 31.25	O/L	+ 5/0	2.5V or V_{ref} ±0.8V	DC-250 (-3dB)	1	-40...+105	●		●		●	4	HO 25-NP-0000 1)	
12.5	± 31.25	O/L	+ 5/0	2.5V or V_{ref} ±0.8V	DC-250 (-3dB)	1	-40...+105	SMD		SMD		●	3	HO 25-NSM-0000 1)	
12.5	± 31.25	O/L	+ 3.3/0	1.65V or V_{ref} ±0.460V	DC-250 (-3dB)	1	-40...+105	●		●		●	4	HO 25-NP/ SP33-1000 1)	
12.5	± 31.25	O/L	+ 3.3/0	1.65V or V_{ref} ±0.460V	DC-250 (-3dB)	1	-40...+105	SMD		SMD		●	3	HO 25-NSM/ SP33-1000 1)	

Fixed setting:
- Current range
- Internal reference
- Response time = 3.5 µs
- Low power mode non active
- Fault reporting mode active
- OCD set @ 3 x I_{PN} (peak value)

1) Ref_{IN} & Ref_{out} modes

**

HO Series

I_{PN} = 15 A ... 25 A

HO 8 ... 25-NP-xxxx

Programmed at factory
HO 8 ... 25-NSM-xxxx

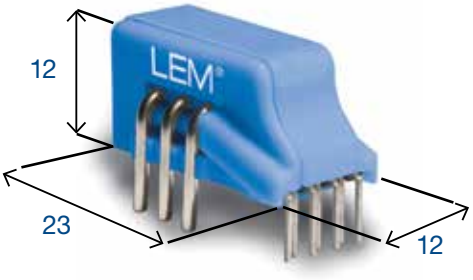
I_{PN} A	I_P A	Technology	U_C V	V_{out} @ I_{PN}	BW kHz	X @ I_{PN}, T_A = 25°C %	T_A °C	Connection Primary PCB	Connection Primary Aperture, busbar, other	Connection Secondary PCB	Connection Secondary Other	UR or UL	Packaging No	Type	Features
15	± 37.5	O/L	+ 5/0	2.5V or V_{ref} ±0.8V	DC-250 (-3dB)	1	-40...+105	●		●		●	4	HO 15-NP-0000 1)	
15	± 37.5	O/L	+ 5/0	2.5V or V_{ref} ±0.8V	DC-250 (-3dB)	1	-40...+105	SMD		SMD		●	3	HO 15-NSM-0000 1)	
15	± 37.5	O/L	+ 3.3/0	1.65V or V_{ref} ±0.460V	DC-250 (-3dB)	1	-40...+105	●		●		●	4	HO 15-NP/ SP33-1000 1)	
15	± 37.5	O/L	+ 3.3/0	1.65V or V_{ref} ±0.460V	DC-250 (-3dB)	1	-40...+105	SMD		SMD		●	3	HO 15-NSM/ SP33-1000 1)	
25	± 62.5	O/L	+ 5/0	2.5V or V_{ref} ±0.8V	DC-250 (-3dB)	1	-40...+105	●		●		●	4	HO 25-NP-0000 1)	
25	± 62.5	O/L	+ 5/0	2.5V or V_{ref} ±0.8V	DC-250 (-3dB)	1	-40...+105	SMD		SMD		●	3	HO 25-NSM-0000 1)	
25	± 62.5	O/L	+ 3.3/0	1.65V or V_{ref} ±0.460V	DC-250 (-3dB)	1	-40...+105	●		●		●	4	HO 25-NP/ SP33-1000 1)	
25	± 62.5	O/L	+ 3.3/0	1.65V or V_{ref} ±0.460V	DC-250 (-3dB)	1	-40...+105	SMD		SMD		●	3	HO 25-NSM/ SP33-1000 1)	

**

Fixed setting:

- Current range
- Internal reference
- Response time = 3.5 µs
- Low power mode non active
- Fault reporting mode active
- OCD set @ 3 x I_{PN} (peak value)

Ask your sales person about kits (5 pieces) for tests purpose at special price.



1) Ref_{IN} & Ref_{out} modes

** Dedicated data sheets are the only recognized reference documents for the given performances and data – Data sheets: www.lem.com

HO Series
HO name and codification

as example

HO 15-NP/SPXXX-[1)2)3)4)]
HO 15-NP-[1)2)3)4)]

The [1)2)3)4)] digits indicate the individual transducer programming options.

1) Reference out:
- 2.5 V → Code: 0
- 1.65 V → Code: 1
- 1.5 V → Code: 2
- 0.5 V → Code: 3
- Only $V_{ref\ IN}$ → Code: 4

(Low power mode engaged)

2) Response time:
- 3.5 µs → Code: 0
- 2 µs → Code: 1
- 6 µs → Code: 2

3) Control EEPROM:
- YES → Code: 0
- NO → Code: 1

4) Over-current detection (value x I_{PN}):

SET_THRESH = 0
- 2.9 → Code: 0
- 3.6 → Code: 1
- 4.0 → Code: 2
- 4.8 → Code: 3
- 5.2 → Code: 4
- 5.8 → Code: 5
- 1.7 → Code: 6
- 2.3 → Code: 7

SET_THRESH = 1
- 0.67 → Code: A
- 0.94 → Code: B
- 1.17 → Code: C
- 1.4 → Code: D
- 1.6 → Code: E
- 1.9 → Code: F
- 2.1 → Code: G
- 2.3 → Code: H

HO 15-NP/SP33-[1)2)3)4)] → + 3.3 V power supply
HO 15-NP-[1)2)3)4)] → + 5 V power supply

As an example:
HO 25-NP-0000: performances and functions are set as follows:

- First digit = 0 → Reference out = 2.5 V
- Second digit = 0 → Response time = 3.5 µs
- Third digit = 0 → Control EEPROM = YES
- Fourth digit = 0 → Overcurrent detection = 2.9 x I_{PN}

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