

## IN SERIES Current Transducers



LEM reinvents fluxgate technology, with its IN Family of high accuracy current transducers for non-intrusive and isolated measurement of DC, AC and pulsed nominal current from 100A to 3000 A.

LEM's patented innovations are at the heart of these transducers, performing maximum signal processing in the digital domain, and applying a new approach to the fluxgate technology architecture for the ripple cancellation of the fluxgate drive frequency. These improvements have resulted in a compact transducer that maintains its high accuracy over a wider temperature range, with reduced noise level vs the previous generation.

### Key points:

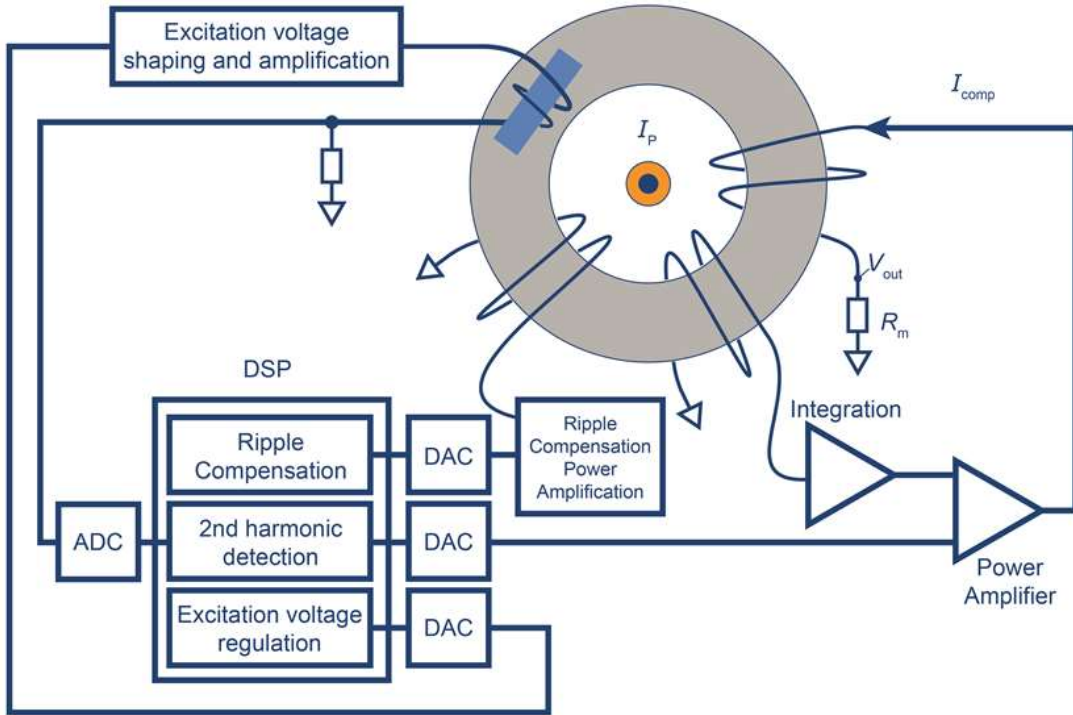
- Closed-loop Fluxgate transducer measures DC, AC or pulsed current up to 3000A
- Wide operating temperature range from -40 to +85°C
- Very low offset over temperature range up to 10 ppm
- Excellent linearity over temperature range up to 3 ppm
- Low noise level & high accuracy over a wide temperature range thanks to a patented fluxgate technology
- Compact size

### Application Domains :

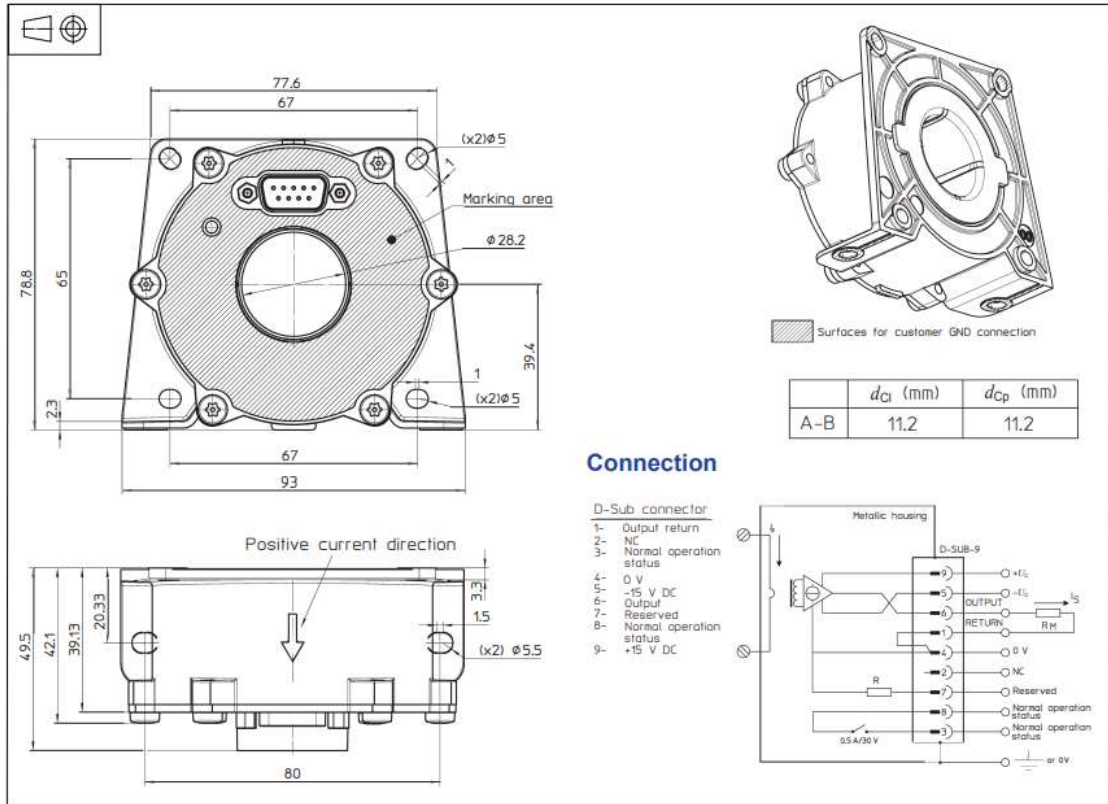
- Industrial • Laboratory

### Applications :

- Feedback element in high performance gradient amplifiers for MRI
- Feedback element in high-precision, high-stability power supplies
- Calibration unit
- Energy measurement
- Medical Equipment.



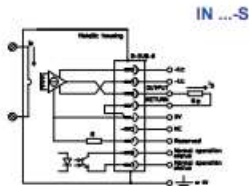
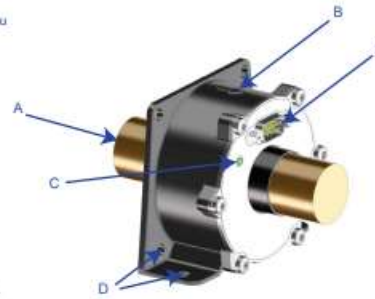
**Dimensions (in mm)**



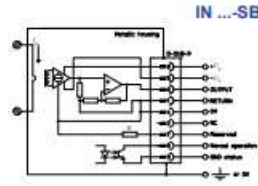
## Description / Beschreibung / Description

- A = Primary conductor  
Primärfahrer  
Conducteur primaire
- B = Current direction  
Stromrichtung  
Sens du courant
- C = LED indicator confirms normal operation  
LED-Anzeige bestätigt normalen Betrieb  
L'indicateur LED confirme le fonctionnement normal
- D = Mounting holes (for horizontal or vertical position)  
Befestigungslöcher (für horizontale oder vertikale Lage)  
Trous de fixation (pour position horizontale ou verticale)
- E = D-Sub 9 pin connection (consistent with use of D-Sub in connection drawing and pin description below: female with UNC 4-40 screws)  
Sub-D 9-poliger Anschluss (Gegenstecker: Buchse mit UNC 4-40 Schrauben)  
Connexion Sub-D 9 pôles (connecteur compatible: femelle avec vis UNC 4-40)
- F = For IN 2000-S and SB, a connector M8 is added to have access to the test or calibration winding.  
Für IN 2000-S und SB wird ein M8-Stecker hinzugefügt, um auf die Test oder Kalibrierwicklung zuzugreifen.  
Pour les IN 2000-S et SB, un connecteur M8 est ajouté pour accéder au bobinage de test ou d'étalonnage.

= Direct Current Power Supply  
Gleichstromversorgung  
Alimentation en courant continu



- IN ...-S**
- D-Sub connection
- 1: Output return
  - 2: NC
  - 3: Normal operation
  - 4: 0 V
  - 5: -15 V DC -
  - 6: Output
  - 7: Reserved
  - 8: Normal operation status
  - 9: +15 V DC -



- IN ...-SB**
- D-Sub connection
- 1: Output return
  - 2: NC
  - 3: GND status
  - 4: 0 V
  - 5: -15 V DC -
  - 6: Output
  - 7: Reserved
  - 8: Normal operation status
  - 9: +15 V DC -

**EN**

IN products are high accuracy current IN-Produkte sind hochgenaue Stromsensoren. Les produits IN sont des capteurs de courant de haute précision. Full datasheet specification is available on [www.lem.com](http://www.lem.com). Ein Datenblatt mit vollständiger Spezifikation ist auf [www.lem.com](http://www.lem.com) verfügbar. et la fiche technique sont disponibles sur le site [www.lem.com](http://www.lem.com).

- Temperature range: -40 °C ... +85 °C
- Power supply (DC): ±15 V
- DC nominal current consumption @ 15 V  
320 mA (IN 100) 790 mA (IN 500)  
320 mA (IN 200) 790 mA (IN 1000)  
387 mA (IN 400) 920 mA (IN 1200)  
1225 mA (IN 2000) 1340 mA (IN 2000-SB)
- EMC: IEC 61326-1,  
Safety: IEC 61010-1, PD2, 1000 V RMS,  
CAT II, stationary use in a secure location
- Altitude < 2000 m
- RH < 80 %, non-condensing
- IEC 60068-2-27 test:  
IK 06, 1 J at -40 °C (IN 100, IN 200, IN 400)  
IK 08, 5 J at -40 °C (other IN family).

**DE**

- Temperaturbereich: -40 °C ... +85 °C
- Spannungsversorgung (DC): ±15 V
- DC-Nennstromaufnahme bei @15 V  
320 mA (IN 100) 790 mA (IN 500)  
320 mA (IN 200) 790 mA (IN 1000)  
387 mA (IN 400) 920 mA (IN 1200)  
1225 mA (IN 2000) 1340 mA (IN 2000-SB)
- EMV: IEC 61326-1,  
Sicherheit: IEC 61010-1, PD2, 1000 V RMS  
CAT II, stationärer Einsatz an einem sicheren Ort.
- Seehöhe < 2 000 m
- RH < 80 %, keine Betauung
- Prüfung nach IEC 60068-2-27:  
IK 06, 1 J at -40 °C (IN 100, IN 200, IN 400)  
IK 08, 5 J at -40 °C (andere IN family).

**FR**

- Plage de température : -40 °C ... +85 °C
- Alimentation électrique (DC) : ±15 V
- Consommation nominal du courant @ 15 V :  
320 mA (IN 100) 790 mA (IN 500)  
320 mA (IN 200) 790 mA (IN 1000)  
387 mA (IN 400) 920 mA (IN 1200)  
1225 mA (IN 2000) 1340 mA (IN 2000-SB)
- CEM : IEC 61326-1,  
Sécurité : IEC 61010-1, PD2, 1000 V RMS,  
CAT II, utilisation à poste fixe dans un endroit sécurisé
- Altitude < 2 000 m
- RH < 80 %, pas de condensation
- Essai IEC 60068-2-27:  
IK 06, 1 J à -40 °C (IN 100, IN 200, IN 400)  
IK 08, 5 J à -40 °C (autres IN family).

### IN Family Parts Available

LEM PART NUMBER	Nominal Current	Measuring Range	Farnell PN
IN 100-S	±100A	±150A	3889267
IN 200-S	±200A	±300A	3889268
IN 400-S	±400A	±600A	3889271
IN 500-S	±500A	±800A	3889272
IN 1000-S	±1000A	±1500A	4129692
IN 1200-S	±1200A	±1500A	4129693
IN 2000-S	±2000A	±3000A	4129694