

IVT 3 SERIES

Compact High Precision Current Measurement Device



Introduction

The IVT 3 Base is a compact high precision current measurement device, which is built on a platform concept where functional components can be added to adapt to many different use cases. The IVT 3 Base Series is developed according to ISO 26262:2018 (Road vehicles – Functional safety”).

Applications

The IVT 3 Base Series can be used for a wide range of DC applications, like:

- Hybrid and full electric vehicle drives
- Stationary energy storage systems
- Uninterruptable power supply (UPS) systems
- Battery and storage based applications
- Industrial Applications
- Fuel cells

Current/Voltage/Insulation Monitoring Sensor

- Shunt based current measuring system
- ASIL C on current
- Nominal current measurement range = $\pm 1.000A$
- Extended Measurement range: $\pm 4000 A$
- Initial Accuracy = 0,1 % of rdg. +0.05A of range at room temperature
- Total accuracy $\pm (0.4 \% \text{ of rdg.} + 0.1 A)$
- Isolation according to ISO 60664 basic isolation
- CAN 2.0B
- Firmware update via OBD
- Temperature measurement
- Supply Voltage 12V-24V



IVT 3 Base

	IVT 3 Base
Current Measurement (ASIL C)	✓
Voltage Measurement 3 - 6 channels (ASIL B)	not available
Insulation monitoring (ASIL B)	not available
Temp. Measurement	✓
Firmware update via OBD	✓
AUTOSAR 4.0.3	✓
CAN 2.0 B	✓
CAN Termination	optional
Analog Output	optional
Sleep mode	optional
Supply Voltage 24 V	development

For further information, please contact sales@isabellenhuette.com.



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TECHNICAL DATA CURRENT

Description	Value			Unit
Measurement range	nominal: $\pm 1,000$	overcurrent: $\pm 1,500$	extended: $\pm 4,000$	A
Resolution	2			mA
Initial accuracy	$\pm (0.1\% \text{ of rdg.}^* + 0.05)$			A
Total accuracy	$\pm (0.4\% \text{ of rdg.}^* + 0.1)$	$\pm (0.4\% \text{ of rdg.}^* + 0.1)$	$\pm (1.0\% \text{ of rdg.}^* + 0.1)$	A
Linearity	± 0.01			% of rng.**
Noise	≤ 70			mA (RMS)



Functional Safety ISO 26262 Assessment

Current measurement sensor, IVT 3.0 project by Isabellenhütte Report 4922495-20230517

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* rdg. = reading
** rng. = range

