ISABELLENHÜTTE

BS-series

SHUNT BASED ANALOG CURRENT SENSORS

Battery Management Systems & intelligent Battery Sensors (BMS & iBS)

INTRODUCTION

Our shunt based analog sensors are the perfect solution with high precision and high power current sensing for a wide range of our customer applications in the areas of 12 V, 24 V, 48 V and high-voltage environments – wether in the automotive, truck or alternative mobility industry, from battery electric vehicles to trucks, scooters and mobile robots.

BSL (5216)

Up to 310 A continuous current

Pulse loads of 3,600 A for 100 ms

1 voltage an 1 NTC channel

BSS (8420)

Up to 600 A continuous current

Pulse loads of 3,600 A for 100 ms

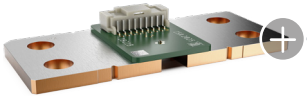
2 voltage an 1 NTC channel

BSN (8436)

Up to 1,100 A continuous current

Pulse loads of 5,200 A for 100 ms

Various voltage an NTC channel configurations



BSX (8436)

Up to 1,340 A continuous current

Pulse loads of 7,500 A for 100 ms

Various voltage an NTC channel congurations

APPLICATIONS

- Battery Disconnection Units (BDU)
- Battery Junction Boxes (BJB)
- Power Distribution Unit (PDU)
- Battery Monitoring Unit (BMU)
- Pack monitoring for Energy Storage Systems (ESS)
- Phase current for HV-inverters

FEATURES

- Up to 1,340 A continuous current
- Pulse loads up to 7,500 A for 100 ms
- Ready for applications with ISO 26262 requirements (ASIL-rating)
- From cross sections 16 x 2 mm to 36 x 4 mm
- Single piece TCR-Calibration
- DMC-Code with calibration parameters

BS-series

Series	Size (metric)	Resistance value [mΩ]	Continuous load up to [A]	10 s load [A]	1 s load [A]	100 ms load [A]	Measurement channels	NTC channels
BSL	5216 x 3	100	±310	±500	±800	±2,300	1	1
BSS	8420 x 3	50 100	±600 ±450	±800 ±600	±1,500 ±1,100	±3,600 ±3,500	2	1
BSN	8436 x 3	25	±1,100	±1,300	±5,500	±5,200	Up to 3	2
BSX	8436 x 3	25	±1,340	±1,500	±3,400	±7,500	2	2

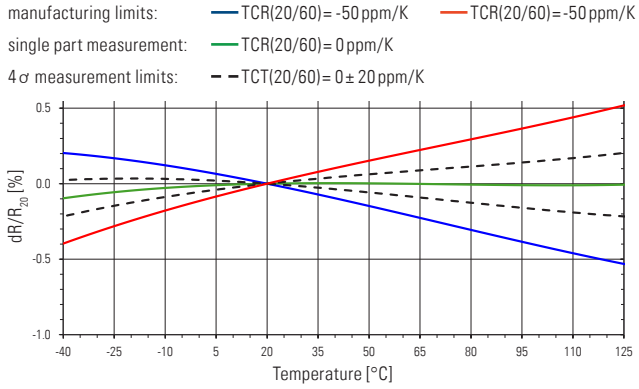
CUSTOMIZATION POSSIBILITIES

- Connector
- Orientation of connector
- NTC-quantity
- Current measurement sense position quantity
- Shunt-dimensions & plating
- Total tolerance over lifetime aging behavior for specific requirements (upon mission prfile of customer)
- Packaging
- and more...

Note: Customizes parameters may raise initial costs, different leadtimes nad may need a new qualification process.

EXAMPLE TCR MEASUREMENT FOR BSN

Resistance change with temperature, ZERANIN®



EXAMPLE DATA-MATRIX-CODE FOR BSN AND BSX

Name	Explanation	Start position	Number of Digits	Meaning	Code*
PPPPPP	ERP-system part number	1	6	BSN-L025-003	164935
XXX	manufacturing plant code	7	3	Dillenburg	000
YY	manufacturing year (Gregorian calendar)	10	2	2023	23
JJJ	day of manufacturing (Gregorian calendar)	12	3	25.08.2023	237
vvvvvvvvv	production batch number	15	10	1000907226	1000907226
nnnnnn	starting consecutive number per month each	25	6	000013	000013
RRRRRR1	resistance value 1 in nano ohms @20°C	31	6	024997	024997
RRRRRR2	resistance value 2 in nano ohms @20°C	37	6	024998	024998
±a','aaa'e-'x	cubic polynom coefficient sign (+/-)**	43	6	9,952E-08	199528
±b','bbb'e-'y	quadratic polynom coefficient sign (+/-)**	49	6	-1,712E-05	017125
±c','ccc'e-'z	linear polynom coefficient 1 sign (+/-)**	55	6	9,602E-04	196024
±c','ccc'e-'z	linear polynom coefficient 2 sign (+/-)**	61	6	9,385E-04	193854

*not applicable or used digits will have only zeros at their digit numbers
** Prefix „+" = „1"; Prefix „-" = „0"

B-samples will have „0" on these positions: XXX, vvvvvvvvvv, nnnnnn, RRRRRR2
B-samples will have Batch-R(t) curve instead of 100% measured value for each shunt, has to be measured in our lab