

HRS1000-T ... HRS2500-T railway current sensors

Closed loop technology for rolling stock and infrastructure 1000 to 2500 A



HRS1000-T-014



HRS1500-T-004



HRS2000-T-004



HRS2500-T-014

Ordering details

Nominal primary Current	Secondary current at IPN	Supply voltage	Secondary connection	Type
A r.m.s	mA	VDC		
1000	200	$\pm 15 \dots \pm 24V$	3 x M5 studs // 3 x 6.35 x 0.8 Faston	HRS1000-T-003
1000	200	$\pm 15 \dots \pm 24V$	3 x M5 studs // 3 x 6.35 x 0.8 Faston	HRS1000-T-013
1000	200	$\pm 15 \dots \pm 24V$	4 x M5 studs // 3 x 6.35 x 0.8 Faston	HRS1000-T-004
1000	200	$\pm 15 \dots \pm 24V$	4 x M5 studs // 3 x 6.35 x 0.8 Faston	HRS1000-T-014
1000	200	$\pm 15 \dots \pm 24V$	Minifit Jr 4 pins	HRS1000-T-005
1500	300	$\pm 15 \dots \pm 24V$	3 x M5 studs // 3 x 6.35 x 0.8 Faston	HRS1500-T-003
1500	300	$\pm 15 \dots \pm 24V$	3 x M5 studs // 3 x 6.35 x 0.8 Faston	HRS1500-T-013
1500	300	$\pm 15 \dots \pm 24V$	4 x M5 studs // 3 x 6.35 x 0.8 Faston	HRS1500-T-004
1500	300	$\pm 15 \dots \pm 24V$	4 x M5 studs // 3 x 6.35 x 0.8 Faston	HRS1500-T-014
1500	300	$\pm 15 \dots \pm 24V$	Minifit Jr 4 pins	HRS1500-T-005
2000	400	$\pm 15 \dots \pm 24V$	3 x M5 studs // 3 x 6.35 x 0.8 Faston	HRS2000-T-003
2000	400	$\pm 15 \dots \pm 24V$	3 x M5 studs // 3 x 6.35 x 0.8 Faston	HRS2000-T-013
2000	400	$\pm 15 \dots \pm 24V$	4 x M5 studs // 3 x 6.35 x 0.8 Faston	HRS2000-T-004
2000	400	$\pm 15 \dots \pm 24V$	4 x M5 studs // 3 x 6.35 x 0.8 Faston	HRS2000-T-014
2000	400	$\pm 15 \dots \pm 24V$	Minifit Jr 4 pins	HRS2000-T-005
2000	400	$\pm 15 \dots \pm 24V$	Minifit Jr 4 pins	HRS2000-T-015
2500	500	$\pm 15 \dots \pm 24V$	3 x M5 studs // 3 x 6.35 x 0.8 Faston	HRS2500-T-003
2500	500	$\pm 15 \dots \pm 24V$	3 x M5 studs // 3 x 6.35 x 0.8 Faston	HRS2500-T-013
2500	500	$\pm 15 \dots \pm 24V$	4 x M5 studs // 3 x 6.35 x 0.8 Faston	HRS2500-T-004
2500	500	$\pm 15 \dots \pm 24V$	4 x M5 studs // 3 x 6.35 x 0.8 Faston	HRS2500-T-014
2500	500	$\pm 15 \dots \pm 24V$	Minifit Jr 4 pins	HRS2500-T-005

* HRSxxxx-t/l--00xxx : without side plates
HRSxxxx-t/l--01xxx : with side plates

HRS1000-T ... HRS2500-T railway current sensors

For rolling stock and infrastructure

Technical data

Application

Sensors to measure DC, AC or pulsating currents with a galvanic insulation between primary and secondary circuits.



HRS1000-I-XXX HRS1500-I-XXX HRS2000-I-XXX HRS2500-I-XXX

			HRS1000-I-XXX	HRS1500-I-XXX	HRS2000-I-XXX	HRS2500-I-XXX
Nominal primary current		A r.m.s	1000	1500	2000	2500
Measuring range	@± 24V (±5%), 15min/h	A	2700	3000	4000	4500
Not measurable overload	10ms/h	A	10 000	10 000	10 000	10 000
Max. measuring resistance (see datasheet for details)	@± 15V (±5%), 15min/h	Ω	0	0	0	0
Max. measuring resistance (see datasheet for details)	@± 24V (±5%), 15min/h	Ω	0	0	0	0
Min. measuring resistance (see datasheet for details)	@± 15V (±5%), 15min/h	Ω	0	0	0	0
Min. measuring resistance (see datasheet for details)	@± 24V (±5%), 15min/h	Ω	0	0	0	0
Turn number			5000	5000	5000	5000
Secondary current at INP		mA	200	300	400	500
Accuracy at IPN	@ +25°C	%	≤ ±0,25	≤ ±0,25	≤ ±0,25	≤ ±0,25
Accuracy at IPN	-40...-20°C, +70...85°C	%	≤ ±0,5	≤ ±0,5	≤ ±0,5	≤ ±0,5
Offset current	@+25°C	mA	≤ 0,2	≤ 0,2	≤ 0,2	≤ 0,2
Linearity		%	≤ 0,1	≤ 0,1	≤ 0,1	≤ 0,1
Thermal drift coefficient on offset		mA/K	≤ 0,025	≤ 0,025	≤ 0,025	≤ 0,025
Delay time		μs	≤ 1	≤ 1	≤ 1	≤ 1
Di / dt correctly followed		A/ μs	100	100	100	100
Bandwidth		kHz	≤ 100	≤ 100	≤ 100	≤ 100
Max no load consumption current		mA	≤ 20	≤ 20	≤ 20	≤ 20
Secondary resistance	@+85°C	Ω	≤ 42	≤ 42	≤ 30	≤ 30
Dielectric strength Primary/Secondary	@50Hz, 1min	kV	12	12	12	12
Dielectric strength Primary/Secondary	@50Hz, 1min	kV	0.5	0.5	0.5	0.5
Supply voltage		V	±15...±24	±15...±24	±15...±24	±15...±24
Voltage drop		V	≤ 1,6	≤ 1,6	≤ 1,6	≤ 1,6
Mass		g	850	850	1500	1500
Mass with side plates		g	1000	1000	1660	1660
Operating temperature		°C	-40...+85	-40...+85	-40...+85	-40...+85
Storage temperature		°C	-50...+90	-50...+90	-50...+90	-50...+90

General data

- Plastic case and insulating resin are self-extinguishing.
- Fixing holes in the case moulding for horizontal or vertical mounting, with side plates.
- Direction of the current: A primary current flowing in the direction of the arrow results in a positive secondary output current from terminal M.
- Internal electrostatic screen: All HRS-T sensors have an electrostatic screen, this is connected to the screen terminal "E". Depending on the version, when this screen terminal "E" is not provided, the screen is connected to the (-) terminal of the sensor.

– Protections:

- of the measuring circuit against short-circuits.
 - of the measuring circuit against opening.
 - of the power supply against polarity reversal.
- Burn-in test in accordance with FPTC 404304 cycle.

Primary connection

Hole for primary conductor. The temperature of the primary conductor in contact with the case must not exceed 100 °C.

Conformity

- EN 50155
- EN 50121-3-2
- EN 50124-1