

Axle speed sensor

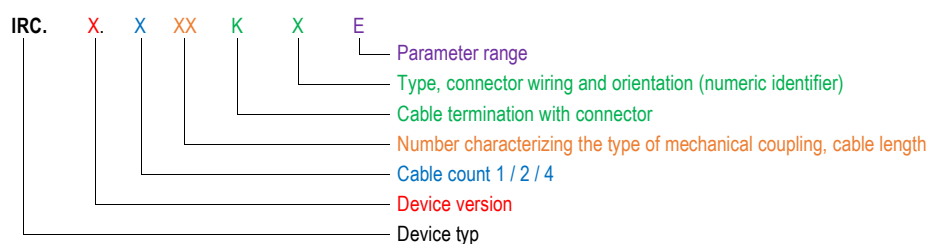
Type **IRC**

illustrative pictures

Axle speed sensor MIREL IRC provides for transfer of driving rail vehicle's mechanical axle rotation to sequence of electrical pulses, from which rolling stock speed and acceleration, as well as travel direction and covered distance are determined by means of subsequent processing. Dependent on sensor modification, it features one, two or four speed channels, where each channel consists of two electrical, phase-shifted signals. Power supply of IRC sensor is provided by device to which the sensor is wired. On rolling stock, the sensor is located on cover of axle bearing housing. Modifications, which haven't been fitted with a wiring connector, are terminated with a grommet.



Nomenclature



Versions

Designation	Dimensions	Maximum weight [kg]	Cable guard	Maximum output frequency [kHz]	Temperature range [°C]	Supply voltage [VDC]	Tolerance of supply voltage [%]
0	1)	3,4	no	2,0	-25 to +45	24	-30 / +25
1 ²⁾	1)	3,4	no	2,0	-25 to +45	24	-30 / +25
1 ³⁾	1)	3,4	no	6,0	-50 to +50	24	-46 / +25
2	1)	3,4	yes	4,0	-25 to +45	24	±40

1) stated in document 319M

2) apply to IRC.1.XXXX

3) apply to IRC.1.XXXXE

Modifications

Description	Number of channels	Pulse quantity per turn	Modification of fork / axle	Cable length [m] ¹⁾ ₃₎	Connector	Temperature range [°C]	Tolerance of supply voltage [%]
IRC.1.1	1	100	IRCV.1.318MP	0,9	2)	-25 to +45	-30 / +25
IRC.1.16	1	100	IRCV.1.1118MP	0,9	2)	-25 to +45	-30 / +25
IRC.1.16K	1	100	IRCV.1.1118MP	0,9	HAN10-A	-25 to +45	-30 / +25
IRC.1.110KE	1	100	IRCV.1.453MP	1,7	HAN6-B	-50 to +50	-46 / +25
IRC.1.111KE	1	100	IRCA.1.FD	1,7	HAN6-B	-50 to +50	-46 / +25
IRC.1.116	1	100	IRCV.1.318MP	3,4	2)	-25 to +45	-30 / +25
IRC.1.117	1	100	IRCV.1.641MP	3,4	2)	-25 to +45	-30 / +25
IRC.1.23K	2	100	IRCV.1.641MP	1,1	HAN6-A	-25 to +45	-30 / +25
IRC.1.25K	2	100	IRCV.1.318MP	3,4	HAN10-A	-25 to +45	-30 / +25
IRC.1.26	2	100	IRCV.1.1118MP	0,9	2)	-25 to +45	-30 / +25
IRC.1.27	2	100	IRCV.1.641MP	1,5	2)	-25 to +45	-30 / +25
IRC.1.28	2	100	IRCV.1.717MP	2,2	2)	-25 to +45	-30 / +25
IRC.1.29	2	100	IRCV.1.453MP	1,7	2)	-25 to +45	-30 / +25
IRC.1.212E	2	100	IRCV.1.453MP	1,7	2)	-50 to +50	-46 / +25

Description	Number of channels	Pulse quantity per turn	Modification of fork / axle	Cable length [m] ¹⁾ ₃₎	Connector	Temperature range [°C]	Tolerance of supply voltage [%]
IRC.1.213K	2	100	IRCA.1.FA	0,9	HAN10-B	-25 to +45	-30 / +25
IRC.1.215K	2	100	IRCA.1.FC	1,5	HAN10-A	-25 to +45	-30 / +25
IRC.1.218K	2	100	IRCV.1.641MP	1,7	HAN10-A	-25 to +45	-30 / +25
IRC.1.220K	2	100	IRCV.1.717MP	1,5	HAN10-A	-25 to +45	-30 / +25
IRC.1.221	2	100	IRCV.1.453MPS	3,4	²⁾	-25 to +45	-30 / +25
IRC.2.2	2	100	IRCV.1.318MP	0,9	²⁾	-25 to +45	±40
IRC.2.2K	2	100	IRCV.1.318MP	0,9	HAN10-A	-25 to +45	±40
IRC.2.21	2	100	IRCV.1.453MP	0,9	²⁾	-25 to +45	±40
IRC.2.22	2	100	IRCV.1.318MP	1,5	²⁾	-25 to +45	±40
IRC.2.22K	2	100	IRCV.1.318MP	1,5	HAN10-A	-25 to +45	±40
IRC.2.24K	2	100	IRCV.1.717MP	2,0	HAN6-A	-25 to +45	±40
IRC.2.25	2	100	IRCV.1.318MP	3,4	²⁾	-25 to +45	±40
IRC.2.26K	2	100	IRCV.1.1118MP	0,9	HAN10-A	-25 to +45	±40
IRC.2.214	2	100	IRCA.1.FB	1,5	²⁾	-25 to +45	±40
IRC.2.214K	2	100	IRCA.1.FB	1,5	HAN10-A	-25 to +45	±40
IRC.2.219K	2	100	IRCV.1.2582MP	1,5	HAN10-A	-25 to +45	±40
IRC.2.4K	4	100	IRCV.1.318MP	0,9	HAN10-C	-25 to +45	±40
IRC.2.414K	4	100	IRCA.1.FB	1,5	HAN10-C	-25 to +45	±40

¹⁾ supplied lengths for IRC.1.* 0,9 / 1,1 / 1,5 / 1,7 / 2,2 / 3,4 m

²⁾ supply cable is without connector and is equipped with threaded grommet PG16

³⁾ supplied lengths for IRC.2.* 0,9 / 1,5 / 2,0 / 3,4 m

Modifications not recommended for new applications

Description	Number of channels	Pulse quantity per turn	Modification of fork / axle	Cable length [m] ¹⁾	Connector	Temperature range [°C]	Tolerance of supply voltage [%]	Replacement
IRC.0.1	1	100	IRCV.1.318M	0,9	²⁾	-25 to +45	-30 / +25	IRC.1.1
IRC.0.16	1	100	IRCV.1.1118M	0,9	²⁾	-25 to +45	-30 / +25	IRC.1.16
IRC.0.16K	1	100	IRCV.1.1118M	0,9	HAN10-A	-25 to +45	-30 / +25	IRC.1.16K
IRC.0.2	2	100	IRCV.1.318M	0,9	²⁾	-25 to +45	-30 / +25	IRC.1.2
IRC.0.2K	2	100	IRCV.1.318M	0,9	HAN10-A	-25 to +45	-30 / +25	IRC.1.2K
IRC.0.21	2	100	IRCV.1.453M	0,9	²⁾	-25 to +45	-30 / +25	IRC.1.21
IRC.0.22	2	100	IRCV.1.318M	1,5	²⁾	-25 to +45	-30 / +25	IRC.1.22
IRC.0.22K	2	100	IRCV.1.318M	1,5	HAN10-A	-25 to +45	-30 / +25	IRC.1.22K
IRC.0.23	2	100	IRCV.1.641M	1,1	HAN6-A	-25 to +45	-30 / +25	IRC.1.23
IRC.0.24	2	100	IRCV.1.717M	2,0	HAN6-A	-25 to +45	-30 / +25	IRC.1.24
IRC.0.25	2	100	IRCV.1.318M	3,4	²⁾	-25 to +45	-30 / +25	IRC.1.25
IRC.0.26	2	100	IRCV.1.1118M	0,9	²⁾	-25 to +45	-30 / +25	IRC.1.26
IRC.0.26K	2	100	IRCV.1.1118M	0,9	HAN10-A	-25 to +45	-30 / +25	IRC.1.26K
IRC.0.27	2	100	IRCV.1.641M	1,5	²⁾	-25 to +45	-30 / +25	IRC.1.27
IRC.0.28	2	100	IRCV.1.717M	2,2	²⁾	-25 to +45	-30 / +25	IRC.1.28
IRC.0.29	2	100	IRCV.1.453M	1,7	²⁾	-25 to +45	-30 / +25	IRC.1.29
IRC.1.2	2	100	IRCV.1.318MP	0,9	²⁾	-25 to +45	-30 / +25	IRC.2.2
IRC.1.2K	2	100	IRCV.1.318MP	0,9	HAN10-A	-25 to +45	-30 / +25	IRC.2.2K
IRC.1.21	2	100	IRCV.1.453MP	0,9	²⁾	-25 to +45	-30 / +25	IRC.2.21
IRC.1.22	2	100	IRCV.1.318MP	1,5	²⁾	-25 to +45	-30 / +25	IRC.2.22
IRC.1.22K	2	100	IRCV.1.318MP	1,5	HAN10-A	-25 to +45	-30 / +25	IRC.2.22K
IRC.1.24K	2	100	IRCV.1.717MP	2,0	HAN6-A	-25 to +45	-30 / +25	IRC.2.24K
IRC.1.25	2	100	IRCV.1.318MP	3,4	²⁾	-25 to +45	-30 / +25	IRC.2.25
IRC.1.26K	2	100	IRCV.1.1118MP	0,9	HAN10-A	-25 to +45	-30 / +25	IRC.2.26K
IRC.1.214	2	100	IRCA.1.FB	1,5	²⁾	-25 to +45	-30 / +25	IRC.2.214
IRC.1.214K	2	100	IRCA.1.FB	1,5	HAN10-A	-25 to +45	-30 / +25	IRC.2.214K
IRC.1.219K	2	100	IRCV.1.2582MP	1,5	HAN10-A	-25 to +45	-30 / +25	IRC.2.219K

¹⁾ supplied lengths 0,9 / 1,1 / 1,5 / 1,7 / 2,0 / 2,2 / 3,4 m

²⁾ supply cable is without connector and is equipped with threaded grommet PG16

Specifications

No.	Version	Title
1758M	191016	IRC Conditions of Use
319M	191008	IRC Installation Conditions

Application

MIREL VZ1 – Train protection
MIREL RM1 – Registration speedometer
MIREL RM2 – Integrated On-Board System
MIREL control systems

Modifications with Phased-out Production

Description	Number of channels	Pulse quantity per turn	Modification of fork / axle	Cable length [m]	Connector	Replacement
IRC.1.30KE ³⁾	1	200	IRCV.1.453MPS	1,7	HAN6-B	-
IRC.1.31KE ³⁾	1	200	IRCA.1.FD	1,7	HAN6-B	-
IRC.1.42 ³⁾	2	100	IRCA.1.FA	2,2	2)	-
IRC.1.43 ³⁾	2	100	1)	1,5	2)	IRC.1.214 ⁴⁾
IRC.1.43K ³⁾	2	100	IRCA.1.FC	1,5	HAN10-A	IRC.1.215K ⁵⁾

1) without flexible axle

2) supply cable is without connector and is equipped with threaded grommet PG16

3) code doesn't correspond to nomenclature system

4) limited replacement

5) full replacement