

Axle speed sensor

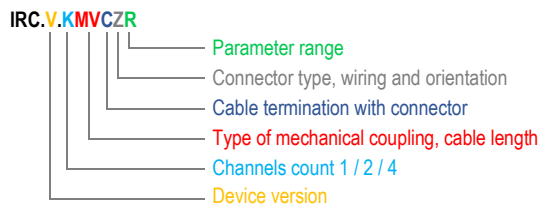
Type **IRC**

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



Modifications

Designation	Channels count	Pulse quantity per turn	Modification of fork / axle	Cable length [m] ^{4) 5)}	Connector	Notes
IRC.1.1	1	100	IRCV.1.318MP	0,9	–	1), 3)
IRC.1.16	1	100	IRCV.1.1118MP	0,9	–	1), 3)
IRC.1.16K	1	100	IRCV.1.1118MP	0,9	HAN10-A	1)
IRC.1.116	1	100	IRCV.1.318MP	3,4	–	1), 3)
IRC.1.117	1	100	IRCV.1.641MP	3,4	–	1), 3)
IRC.1.23K	2	100	IRCV.1.641MP	1,1	HAN6-A	1)
IRC.1.25K	2	100	IRCV.1.318MP	3,4	HAN10-A	1)
IRC.1.26	2	100	IRCV.1.1118MP	0,9	–	1), 3)
IRC.1.27	2	100	IRCV.1.641MP	1,5	–	1), 3)
IRC.1.28	2	100	IRCV.1.717MP	2,2	–	1), 3)
IRC.1.29	2	100	IRCV.1.453MP	1,7	–	1), 3)
IRC.1.213K	2	100	IRCA.1.FA	0,9	HAN10-B	1)
IRC.1.215K	2	100	IRCA.1.FC	1,5	HAN10-A	1)
IRC.1.218K	2	100	IRCV.1.641MP	1,7	HAN10-A	1)
IRC.1.220K	2	100	IRCV.1.717MP	1,5	HAN10-A	1)
IRC.1.221	2	100	IRCV.1.453MPS	3,4	–	1), 3)
IRC.2.2	2	100	IRCV.1.318MP	0,9	–	2), 3)
IRC.2.2K	2	100	IRCV.1.318MP	0,9	HAN10-A	2)
IRC.2.21	2	100	IRCV.1.453MP	0,9	–	2), 3)
IRC.2.22	2	100	IRCV.1.318MP	1,5	–	2), 3)
IRC.2.22K	2	100	IRCV.1.318MP	1,5	HAN10-A	2)
IRC.2.24K	2	100	IRCV.1.717MP	2,0	HAN6-A	2)
IRC.2.25	2	100	IRCV.1.318MP	3,4	–	2), 3)
IRC.2.26K	2	100	IRCV.1.1118MP	0,9	HAN10-A	2)

Designation	Channels count	Pulse quantity per turn	Modification of fork / axle	Cable length [m] ⁴⁾⁵⁾	Connector	Notes
IRC.2.214	2	100	IRCA.1.FB	1,5	-	2), 3)
IRC.2.214K	2	100	IRCA.1.FB	1,5	HAN10-A	2)
IRC.2.219K	2	100	IRCV.1.2582MP	1,5	HAN10-A	2)
IRC.2.4K	4	100	IRCV.1.318MP	0,9	HAN10-C	2)
IRC.2.414K	4	100	IRCA.1.FB	1,5	HAN10-C	2)

¹⁾ homologated in Slovakia, Czech Republic, Hungary, Poland

²⁾ homologated in Slovakia and Czech Republic

³⁾ supply cable is without connector and is equipped with threaded grommet PG16

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

⁵⁾ supply lengths for IRC.2: 0,9 / 1,5 / 2,0 / 3,4 m

Modifications prepared for new applications

Designation	Channels count	Pulse quantity per turn	Modification of fork / axle	Cable length [m]	Connector	Notes
IRC.1.222K	2	100	IRCV.1.453MPS	0,9	HAN10-A	WF953
IRC.2A.22	2	100	IRCV.1.318MP	1,5	-	WF990

Device version

Designation	Parameter range	Dimensions	Max. weight [kg]	Cable protector	Max. output frequency [kHz]	Temperature range [°C]	Tolerance of supply [%]
0	-	1)	3,4	-	2,0	-25 to +45	-30 / +25
1	-	1)	3,4	-	2,0	-25 to +45	-30 / +25
	E	1)	3,4	-	6,0	-50 to +50	-46 / +25
2	-	1)	3,4	✓	4,0	-25 to +45	±40
2A	-	1)	3,6	✓	4,0	-25 to + 45	±40

¹⁾ specified in 319M Installation conditions

Specifications

The catalogue sheet was prepared on the basis of the following specifications:

Number	Version	Name
1758M	220412	IRC Conditions of use
319M	220331	IRC Installation conditions

Usage

MIREL VZ1 – train protection

MIREL RM1 – registration speedometer

MIREL RM2 – integrated on-board system

MIREL RS812 – control system

MIREL RS813 – control system

MIREL RS361 – control system

MIREL RS363 – control system

Modifications not recommended for new applications

Designation	Channels count	Pulse quantity per turn	Modification of fork / axle	Cable length [m]	Connector	Notes	Substitute
IRC.0.1	1	100	IRCV.1.318M	0,9	–	1), 2)	IRC.1.1
IRC.0.16	1	100	IRCV.1.1118M	0,9	–	1), 2)	IRC.1.16
IRC.0.16K	1	100	IRCV.1.1118M	0,9	HAN10-A	1)	IRC.1.16K
IRC.0.2	2	100	IRCV.1.318M	0,9	–	1), 2)	IRC.1.2
IRC.0.2K	2	100	IRCV.1.318M	0,9	HAN10-A	1)	IRC.1.2K
IRC.0.21	2	100	IRCV.1.453M	0,9	–	1), 2)	IRC.1.21
IRC.0.22	2	100	IRCV.1.318M	1,5	–	1), 2)	IRC.1.22
IRC.0.22K	2	100	IRCV.1.318M	1,5	HAN10-A	1)	IRC.1.22K
IRC.0.23	2	100	IRCV.1.641M	1,1	HAN6-A	1)	IRC.1.23
IRC.0.24	2	100	IRCV.1.717M	2,0	HAN6-A	1)	IRC.1.24
IRC.0.25	2	100	IRCV.1.318M	3,4	–	1), 2)	IRC.1.25
IRC.0.26	2	100	IRCV.1.1118M	0,9	–	1), 2)	IRC.1.26
IRC.0.26K	2	100	IRCV.1.1118M	0,9	HAN10-A	1)	IRC.1.26K
IRC.0.28	2	100	IRCV.1.717M	2,2	–	1), 2)	IRC.1.28
IRC.0.29	2	100	IRCV.1.453M	1,7	–	1), 2)	IRC.1.29
IRC.1.2	2	100	IRCV.1.318MP	0,9	–	1), 2)	IRC.2.2
IRC.1.2K	2	100	IRCV.1.318MP	0,9	HAN10-A	1)	IRC.2.2K
IRC.1.21	2	100	IRCV.1.453MP	0,9	–	1), 2)	IRC.2.21
IRC.1.22	2	100	IRCV.1.318MP	1,5	–	1), 2)	IRC.2.22
IRC.1.22K	2	100	IRCV.1.318MP	1,5	HAN10-A	1)	IRC.2.22K
IRC.1.24K	2	100	IRCV.1.717MP	2,0	HAN6-A	1)	IRC.2.24K
IRC.1.25	2	100	IRCV.1.318MP	3,4	–	1), 2)	IRC.2.25
IRC.1.26K	2	100	IRCV.1.1118MP	0,9	HAN10-A	1)	IRC.2.26K
IRC.1.214	2	100	IRCA.1.FB	1,5	–	1), 2)	IRC.2.214
IRC.1.214K	2	100	IRCA.1.FB	1,5	HAN10-A	1)	IRC.2.214K
IRC.1.219K	2	100	IRCV.1.2582MP	1,5	HAN10-A	1)	IRC.2.219K

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