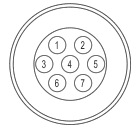


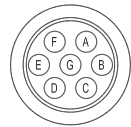
CONNECTIONS

Function	Cable C / P	Cable L / RS	7 pin J C / P	7 pin J L / RS no Zero	7 pin M C / P	7 pin M L / RS no Zero	10 pin J L / RS with Zero	10 pin M L / RS with Zero
+V DC	red	red	6	4	F	D	4 - 5	D - E
0 V	black	black	1	6	A	F	6	F
A+	green	green	3	1	C	A	1	A
A-	/	brown or grey	/	3	/	C	7	G
B+	yellow	yellow	5	2	E	B	2	B
B-	/	orange	/	5	/	E	8	H
Z+	blue	blue	4	/	D	/	3	C
Z-	/	white	/	/	/	/	9	I
⊕	shield	shield	7	7	G	G	10	J

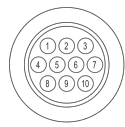
J connector (7 pin)
JIS-C-5432 Size 16
solder side view FV



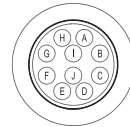
M connector (7 pin)
Amphenol MS3102-E-16-S
solder side view FV



J connector (10 pin)
JIS-C-5432 Size 16
solder side view FV



M connector (10 pin)
Amphenol MS3102-E-18-1
solder side view FV



MAIN FEATURES

Measuring wheel series designed for specific industrial applications where is required to measure a linear movement (i.e. continuous sheet cutting machines of wood, textiles, glass, etc.). The body is entirely designed of aluminium and mounted using an oscillating arm pivoted on the shaft. The weight of the metric wheel keeps a stable contact with the material, allowing an accurate measurement of both length and speed. Wheel surface can be in crossed-knurl aluminium, special anti-oil or anti-sliding rubber.

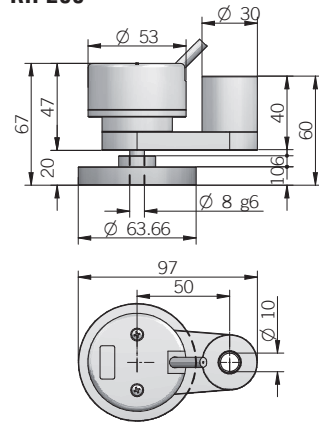
- 3 channel encoder (A / B / Z) up to 1024 ppr
- Power supply up to +30 V DC with several electrical interfaces available
- Up to 105 kHz output frequency
- Compact size
- Cable output



ORDERING CODE

ORDERING CODE	RH200	A	500	S	5/28	P	8	X	3	PR	.XXX
200 mm measuring wheel	MODEL RH200										
	WHEEL SURFACE smooth A knurled B rubberized C without wheel /										
	RESOLUTION ppr from 50 to 1024 refer to the available pulses list										
	ZERO PULSE without zero pulse S with zero pulse Z										
	POWER SUPPLY (with L electrical interface) 5 V DC 5 5 ... 28 V DC 5/28										
	ELECTRICAL INTERFACE NPN open collector C push-pull P line driver L power supply 5/28V - output RS-422 RS										
	SHAFT DIAMETER mm 8										
	ENCLOSURE RATING IP 54 X										
	MAX ROTATION SPEED 3000 rpm 3										
	OUTPUT TYPE cable (standard length 0,5 m) PR preferred cable lengths 1,5 / 2 / 3 / 5 / 10 m, to be added after DIRECTION TYPE (eg. PR5)										
	VARIANT custom version XXX										

RH 200



dimensions in mm

ELECTRICAL SPECIFICATIONS

Resolution	from 50 to 1024 ppr
Power supply¹	5 = 4,5 ... 5,5 V DC 5/28 = 4,5 ... 30 V DC (reverse polarity protection)
Current consumption without load	100 mA max
Max load current	C / P = 50 mA / channel L / RS = 20 mA / channel
Electrical interface²	NPN open collector (AEIC-7273, pull-up max +30 V DC) push-pull / line driver HTL (AEIC-7272) line driver RS-422 (AELT-5000 or equivalent)
Max output frequency	105 kHz
Counting direction	A leads B clockwise (shaft view)
Electromagnetic compatibility	according to 2014/30/EU directive
RoHS	according to 2011/65/EU (01/09/2020) directive
UL / CSA	certificate n. E212495

¹ as measured at the transducer without cable influences

² for further details refer to OUTPUT LEVELS on TECHNICAL BASICS section

³ measured on the transducer flange

⁴ condensation not allowed

CONNECTIONS

Function	Cable C / P	Cable L / RS
+V DC	red	red
0 V	black	black
A+	green	green
A-	/	brown or grey
B+	yellow	yellow
B-	/	orange
Z+	blue	blue
Z-	/	white
⊕	shield	shield

MECHANICAL SPECIFICATIONS

Shaft diameter	ø 8 mm
Enclosure rating	IP 54 (IEC 60529)
Max rotation speed	3000 rpm
Shock	50 G, 11 ms (IEC 60068-2-27)
Vibration	10 G, 10 ... 2000 Hz (IEC 60068-2-6)
Starting torque (at +20°C / +68°F)	< 0,01 Nm (1,42 Ozin)
Bearing stage material	EN-AW 2011 aluminum
Housing material	PA66 glass fiber reinforced
Shaft material	1.4305 / AISI 303 stainless steel
Support material	EN-AW 2011 aluminum
Wheel material	EN-AW 2011 aluminum
Surface material	Smooth / Knurled = EN-AW 2011 aluminium Rubberized = Nitrile NBR 80 ± 5 Shore A
Bearings	n.2 ball bearings
Bearings life	10 ⁹ revolutions
Operating temperature^{3,4}	-10° ... +70°C (+14° ... +158°F)
Storage temperature⁴	-25° ... +70°C (-13° ... +158°F)
Encoder + support weight	250 g (8,82 oz)
Wheel weight	90 g (3,17 oz)

RESOLUTIONS

50* - 100 - 200 - 250 - 400 - 500 - 512 - 1000 - 1024

*available without zero pulse

please directly contact our offices for other pulses, preferred resolutions in bold

MAIN FEATURES

Measuring wheel series designed for specific industrial applications where is required to measure a linear movement (i.e. continuous sheet cutting machines of wood, textiles, glass, etc.).

The body is entirely designed of aluminium and mounted using an oscillating arm pivoted on the shaft. The weight of the metric wheel keeps a stable contact with the material, allowing an accurate measurement of both length and speed. Wheel surface can be in crossed-knurled aluminium, special anti-oil or anti-sliding rubber.

- 3 channel encoder (A / B / Z) up to 10000 ppr
- Power supply up to +28 V DC with several electrical interfaces available
- Up to 500 kHz output frequency
- Model RM with internal coupling
- Cable or connector output



ORDERING CODE RL500 A 500 S 5/28 P 10 X 3 M R .162 +XXX

MODEL 500 mm measuring wheel - RL series RL500 500 mm measuring wheel - RM series RM500	WHEEL SURFACE smooth A knurled B rubberized C without wheel /	RESOLUTION (mod. RL) ppr from 10 to 2500 (mod. RM) ppr from 1 to 10000 refer to the available pulses list	ZERO PULSE without zero pulse S with zero pulse Z	POWER SUPPLY (with L electrical interface) 5 V DC 5 5 ... 28 V DC 5/28	ELECTRICAL INTERFACE NPN open collector C push-pull P line driver L power supply 5/28V - output RS-422 RS	SHAFT DIAMETER mm 10	ENCLOSURE RATING IP 64 X IP 66 S	MAX ROTATION SPEED 3000 rpm 3	OUTPUT TYPE cable (standard length 1,5 m) P preferred cable lengths 2 / 3 / 5 / 10 m, to be added after DIRECTION TYPE (eg. PR5) MIL male connector M JIS-C-5432 male connector J M12 male connector M12 M23 male connector H IP40 M16 male connector C
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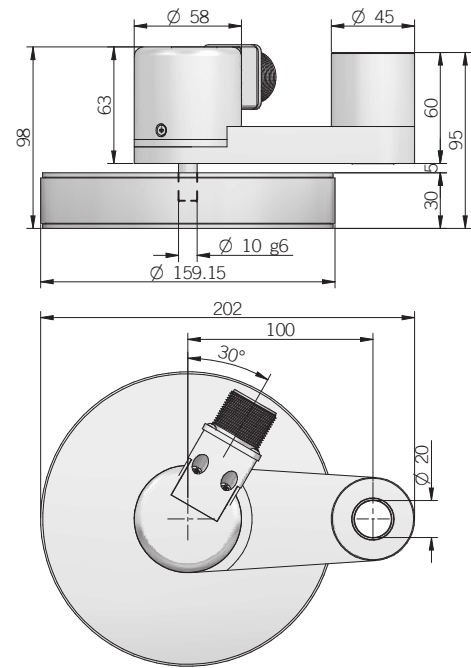
DIRECTION TYPE
axial **A**
radial **R**

MATING CONNECTOR
mating connector not included **.162**

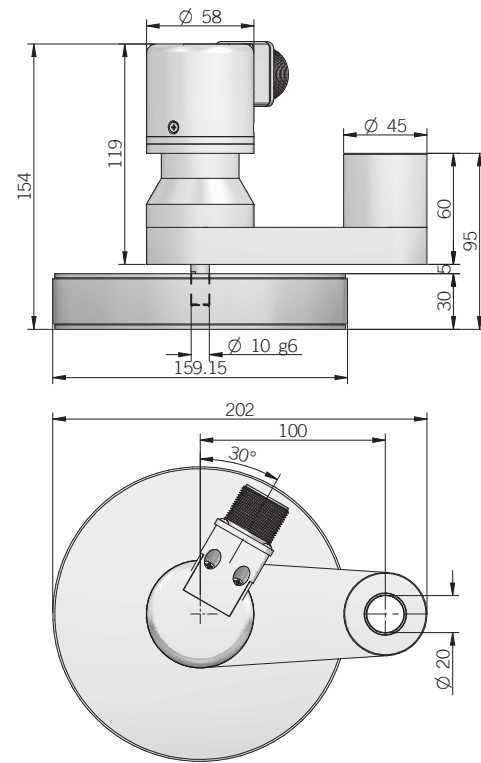
to be reported only with connector output (eg. M12R.162), for mating connector see Accessories

VARIANT
custom version **XXX**

RL 500



RM 500



dimensions in mm

ELECTRICAL SPECIFICATIONS

Resolution	from 1 to 10000 ppr
Power supply¹	5 = 4,5 ... 5,5 V DC 5/28 = 4,5 ... 30 V DC (reverse polarity protection)
Power draw without load	800 mW
Max load current	C / P = 50 mA / channel L / RS = 20 mA / channel
Electrical interface²	NPN open collector (AEIC-7273, pull-up max +30 V DC) push-pull / line driver HTL (AEIC-7272) line driver RS-422 (AELT-5000 or equivalent)
Max output frequency	250 kHz up to 6000 ppr 500 kHz from 7200 ppr
Counting direction	A leads B clockwise (shaft view)
Electromagnetic compatibility	according to 2014/30/EU directive
RoHS	according to 2011/65/EU (01/09/2020) directive
UL / CSA	certificate n. E212495

¹ as measured at the transducer without cable influences

² for further details refer to OUTPUT LEVELS on TECHNICAL BASICS section

³ measured on the transducer flange

⁴ condensation not allowed

RL SERIES RESOLUTIONS

10 - 20 - 50 - **100** - 150 - 200 - 250 - 300 - **360** - 400 - **500** - **512** - 600 - 720 - **1000** - **1024** - 1200 - 1440 - **2000** - **2048** - 2500

RM SERIES RESOLUTIONS

1 - 2 - 4 - 5 - 10 - 15 - 16 - 20 - 25 - 30 - 32 - 40 - 50 - 60 - 70 - 80 - 90 - **100** - 120 - 128 - 150 - 200 - 240 - 250 - 256 - 300 - **360** - 400 - 480 - **500** - **512** - **600** - 625 - **720** - 750 - 800 - 900 - **1000** - **1024** - 1200 - 1250 - 1440 - 1500 - 1600 - 1800 - **2000** - **2048** - **2500** - 3000 - **3600** - 4000 - 4096 - **5000** - 6000 - **7200** - 8000 - 8192 - 9000 - **10000**

please directly contact our offices for other pulses, preferred resolutions in bold

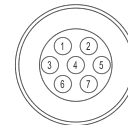
MECHANICAL SPECIFICATIONS

Shaft diameter	∅ 10 mm
Enclosure rating	X = IP 64 (IEC 60529) S = IP 66 (IEC 60529)
Max rotation speed	3000 rpm
Shock	50 G, 11 ms (IEC 60068-2-27)
Vibration	10 G, 10 ... 2000 Hz (IEC 60068-2-6)
Starting torque (at +20°C / +68°F)	mod. RL / RM IP64 < 0,03 Nm (4,25 Ozin) mod. RL / RM IP66 < 0,06 Nm (8,50 Ozin)
Bearing stage material	EN-AW 2011 aluminum
Housing material	PA66 glass fiber reinforced
Shaft material	1.4305 / AISI 303 stainless steel
Support material	EN-AW 2011 aluminum
Wheel material	EN AB 43100
Surface material	Smooth / Knurled = EN-AW 2011 aluminium Rubberized = PUR 50 ± 7 Shore A
Bearings	n.2 ball bearings n.2 ball bearings on support (mod. RM)
Bearings life	10 ⁹ revolutions
Operating temperature^{3,4}	-10° ... +70°C (+14° ... +158°F)
Storage temperature⁴	-25° ... +70°C (-13° ... +158°F)
Encoder + support weight	1000 g (35,27 oz)
Wheel weight	mod. A/B 900 g (31,75 oz) mod. C with rubber belt 850g (30 oz)

CONNECTIONS

Function	Cable C / P	Cable L / RS	7 pin J C / P	7 pin J L / RS no Zero	7 pin M C / P	7 pin M L / RS no Zero	10 pin J L / RS with Zero	10 pin M L / RS with Zero	5 pin M12 C / P	8 pin M12 L / RS	12 pin H	5 pin C C / P	8 pin C L / RS
+V DC	red	red	6	4	F	D	4 - 5	D - E	2	7	12	5	7
0 V	black	black	1	6	A	F	6	F	4	1	10	1	8
A+	green	green	3	1	C	A	1	A	3	6	5	2	1
A-	/	brown or grey	/	3	/	C	7	G	/	5	6	/	2
B+	yellow	yellow	5	2	E	B	2	B	1	4	8	4	3
B-	/	orange	/	5	/	E	8	H	/	3	1	/	4
Z+	blue	blue	4	/	D	/	3	C	5	2	3	3	5
Z-	/	white	/	/	/	/	9	I	/	8	4	/	6
≡	shield	shield	7	7	G	G	10	J	housing	housing	9	/	/

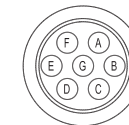
J connector (7 pin)
JIS-C-5432 Size 16
solder side view FV



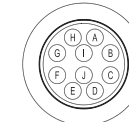
J connector (10 pin)
JIS-C-5432 Size 16
solder side view FV



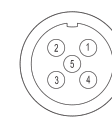
M connector (7 pin)
Amphenol MS3102-E-16-S
solder side view FV



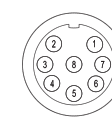
M connector (10 pin)
Amphenol MS3102-E-18-1
solder side view FV



M12 connector (5 pin)
M12 A coded
solder side view FV



M12 connector (8 pin)
M12 A coded
solder side view FV



C connector (5 pin)
circular M16
solder side view FV



C connector (8 pin)
IEC 60130-9
solder side view FV



H connector (12 pin) - M23 CCW
Hummel 7.410.000000 -
7.002.912.603
solder side view FV

