



Temposonics

AN AMPHENOL COMPANY

Data Sheet

R-Series V RFV Analog

Magnetostrictive Linear Position Sensors

- Flexible sensor rod
- Stroke length up to 20 m
- Field adjustments and diagnostics using the new TempoLink® smart assistant



THE NEW **V** GENERATION

MEASURING TECHNOLOGY

The absolute, linear position sensors provided by Tempsonics rely on the company's proprietary magnetostrictive technology, which can determine position with a high level of precision and robustness. Each Tempsonics position sensor consists of a ferromagnetic waveguide, a position magnet, a strain pulse converter and a supporting electronics. The magnet, connected to the object in motion in the application, generates a magnetic field at its location on the waveguide. A short current pulse is applied to the waveguide. This creates a momentary radial magnetic field and torsional strain on the waveguide. The momentary interaction of the magnetic fields releases a torsional strain pulse that propagates the length of the waveguide. When the ultrasonic wave reaches the beginning of the waveguide it is converted into an electrical signal. Since the speed of the ultrasonic wave in the waveguide is precisely known, the time required to receive the return signal can be converted into a linear position measurement with both high accuracy and repeatability.

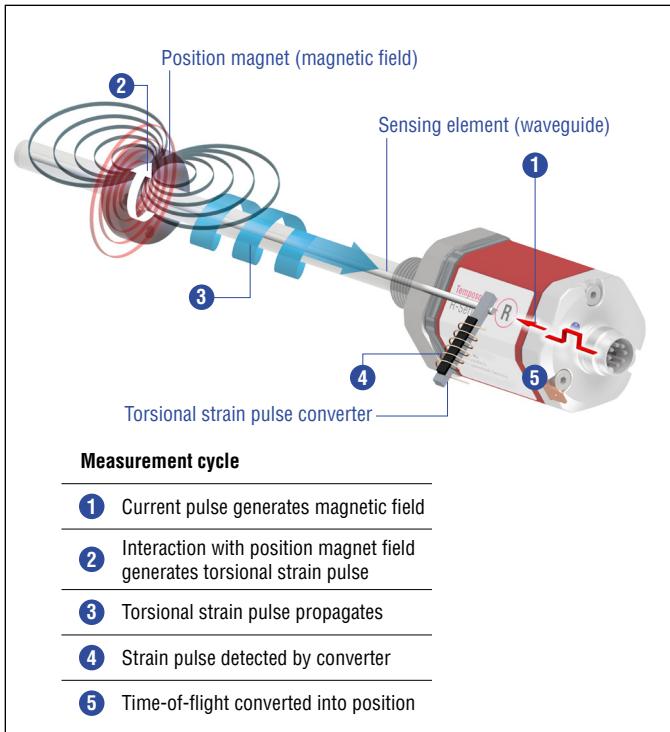
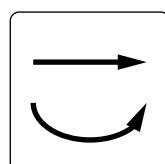


Fig. 1: Time-of-flight based magnetostrictive position sensing principle

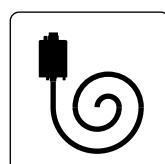
R-SERIES V RFV Analog

The Tempsonics® R-Series V brings very powerful sensor performance to meet the many demands of your application. The RFV sensor is the R-Series V with flexible rod. The main advantages of the flexible rod are:



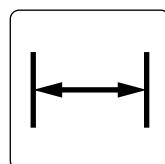
Straight and curved line

The flexible measuring rod enables position measurement on straight and also curved line.



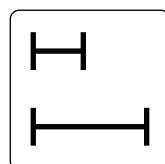
Compact for transport and storage

For transport and storage, the RFV sensor can be coiled up. This saves costs and space.



Installation with little space

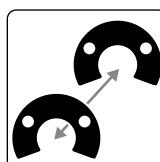
Due to the bendable rod, the RFV sensor can be installed even if only little space is available.



Large stroke length range

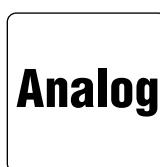
The sensor is available with stroke lengths from 150 mm to 20,000 mm and thus can be used in both short and long distance applications.

In addition the R-Series V Analog scores with the following features:



2 positions simultaneously

The R-Series V Analog can detect and report the position of up to 2 magnets simultaneously.



R-Series V Analog

With the R-Series V Analog you can configure the Analog output (current/voltage) that it fits best for your application and also adjust it on site with the sensor assistant.

All settings under control with the sensor assistant for the R-Series V

The TempoLink® smart assistant supports you in setup and diagnostics of the R-Series V. For more information of the assistant please see the data sheet:

- TempoLink® smart assistant
([Document part number: 552070](#))



TECHNICAL DATA

Output																		
Analog	Voltage: 0...10 / 10...0/-10...+10/+10...-10 VDC (min. controller load > 5 kΩ) Current: 4(0)...20/20...4(0) mA (min./max. load 0/500 Ω)																	
Measured output variables	Position for one or two position magnets Position + speed (without direction) or velocity (with direction) for one position magnet Position for one position magnet + temperature inside the sensor electronics housing																	
Measurement parameters																		
Position measurement																		
Null/Span adjustment	100 % of electrical stroke																	
Resolution	16 bit (internal resolution 0.1 μm)																	
Update time	Stroke length	≤ 200 mm	≤ 350 mm	≤ 1200 mm	≤ 2400 mm	≤ 4800 mm	≤ 7620 mm	≤ 10,000 mm	≤ 20,000 mm									
	Update time	0.25 ms	0.333 ms	0.5 ms	1.0 ms	2.0 ms	5.0 ms	7.5 ms	15.0 ms									
Linearity deviation ¹	< ±0.02 % F.S. (minimum ±100 μm)																	
Repeatability	< ±0.001 % F.S. (minimum ±2.5 μm) typical																	
Hysteresis	< 4 μm typical																	
Temperature coefficient	< 30 ppm/K typical																	
Velocity measurement																		
Range	0.01...10 m/s or 1...400 in./s																	
Deviation	≤ 0.05 %																	
Resolution	16 bit (minimum 0.01 mm/s)																	
Operating conditions																		
Operating temperature	-40...+85 °C (-40...+185 °F)																	
Humidity	90 % relative humidity, no condensation																	
Ingress protection	IP30 (IP65 rating only for professional mounted guide pipe and if mating connectors are correctly fitted)																	
Shock test	100 g/6 ms IEC standard 60068-2-27																	
Vibration test	5 g/10...2000 Hz, IEC standard 60068-2-6 (excluding resonant frequencies)																	
EMC test	Electromagnetic emission according to EN 61000-6-3 Electromagnetic immunity according to EN 61000-6-2 The RFV sensors fulfill the requirements of the EMC directives 2014/30/EU, UKSI 2016 No. 1091 and TR CU 020/2011 under the condition of an EMC compliant installation ²																	
Magnet movement velocity	Any																	
Design/Material																		
Sensor electronics housing	Aluminum (painted), zinc die cast																	
Sensor flange	Stainless steel 1.4305 (AISI 303)																	
Sensor rod	Stainless steel conduit with PTFE coating																	
RoHS compliance	The used materials are compliant with the requirements of EU Directive 2011/65/EU and EU Regulation 2015/863 as well as UKSI 2022 No. 622																	
Stroke length	150...20,000 mm (6...787 in.)																	
Mechanical mounting																		
Mounting position	Any																	
Mounting instruction	Please consult the technical drawings on page 5 and page 6 and the operation manual (document part number: 552063)																	

Technical data "Electrical connection" on [page 4](#)

1/ With position magnet # 251 416-2

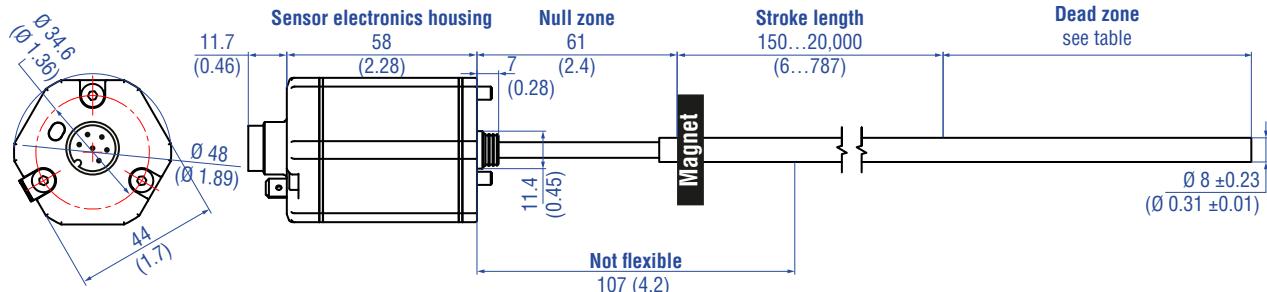
2/ The flexible sensor element must be mounted in an appropriately shielded environment

Electrical connection

Connection type	1 × M16 male connector (6 pin) or 1 × M12 male connector (5 pin) or cable outlet
Operating voltage	12...30 VDC ±20 % (9.6...36 VDC)
Power consumption	< 3.25 W
Dielectric strength	500 VDC (DC ground to machine ground)
Polarity protection	Up to -36 VDC
Overvoltage protection	Up to 36 VDC

TECHNICAL DRAWING

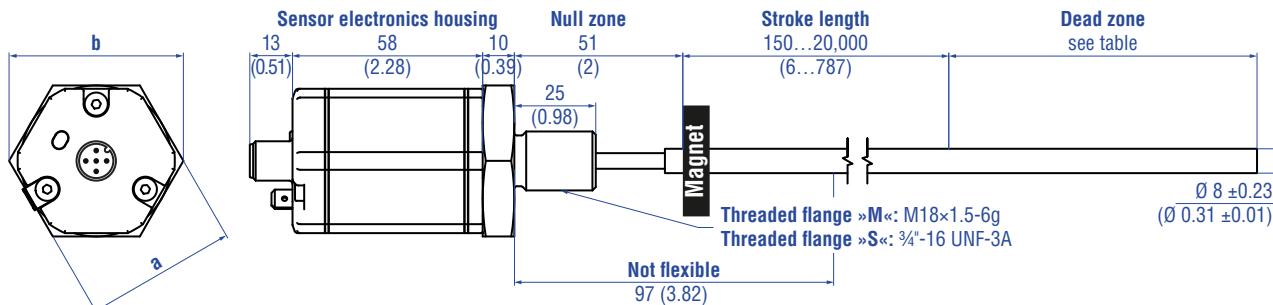
RFV-B – RFV base unit, example: Connection type D60 (connector outlet)



Stroke length	Tolerance of total length	Dead zone
Up to 7620 mm (300.00 in.)	+8 mm (0.31 in.)/-5 mm (0.20 in.)	94 mm (3.70 in.)
Up to 10,000 mm (393.70 in.)	+15 mm (0.59 in.)/-15 mm (0.59 in.)	100 mm (3.94 in.)
Up to 15,000 mm (590.55 in.)	+15 mm (0.59 in.)/-30 mm (1.18 in.)	120 mm (4.72 in.)
Up to 20,000 mm (787.00 in.)	+15 mm (0.59 in.)/-45 mm (1.77 in.)	140 mm (5.51 in.)

Note: Tolerance of total length has no influence on the stroke length.

RFV-M/-S – RFV with threaded flange M18×1.5-6g or 3/4"-16 UNF-3A, example: Connection type D34 (connector outlet)



Stroke length	Tolerance of total length	Dead zone
Up to 7620 mm (300.00 in.)	+8 mm (0.31 in.)/-5 mm (0.20 in.)	94 mm (3.70 in.)
Up to 10,000 mm (393.70 in.)	+15 mm (0.59 in.)/-15 mm (0.59 in.)	100 mm (3.94 in.)
Up to 15,000 mm (590.55 in.)	+15 mm (0.59 in.)/-30 mm (1.18 in.)	120 mm (4.72 in.)
Up to 20,000 mm (787.00 in.)	+15 mm (0.59 in.)/-45 mm (1.77 in.)	140 mm (5.51 in.)

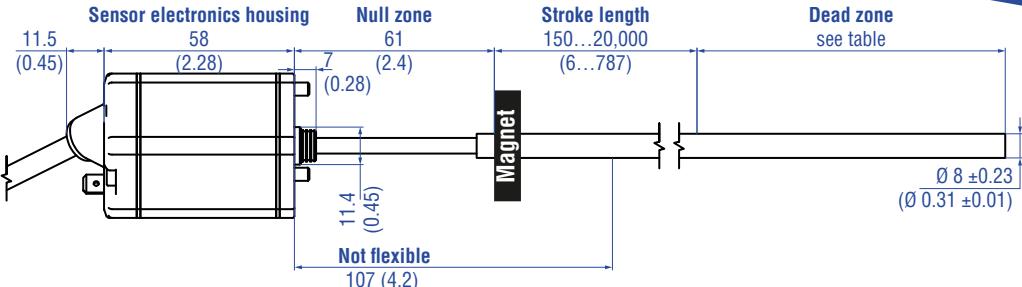
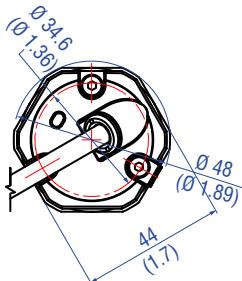
Note: Tolerance of total length has no influence on the stroke length.

Controlling design dimensions are in millimeters and measurements in () are in inches

Fig. 2: Tempsonics® RFV with ring magnet, part 1

NEW

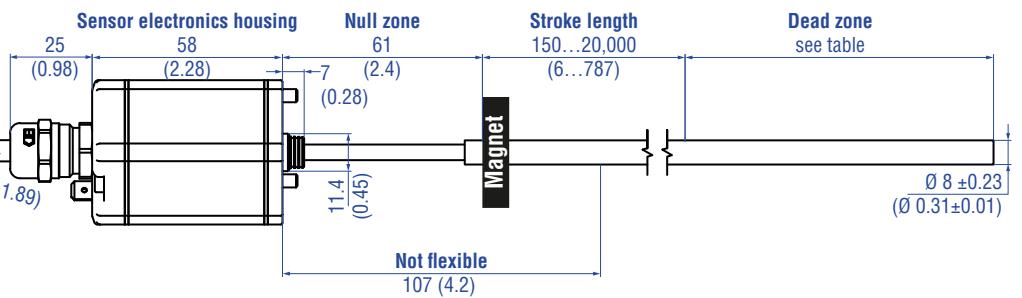
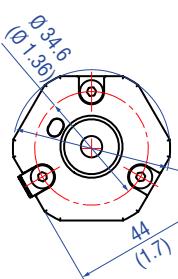
RFV-B – RFV base unit, example: Connection type EXX/GXX/LXX/UXX (angled cable outlet)



Stroke length	Tolerance of total length	Dead zone
Up to 7620 mm (300.00 in.)	+8 mm (0.31 in.)/-5 mm (0.20 in.)	94 mm (3.70 in.)
Up to 10,000 mm (393.70 in.)	+15 mm (0.59 in.)/-15 mm (0.59 in.)	100 mm (3.94 in.)
Up to 15,000 mm (590.55 in.)	+15 mm (0.59 in.)/-30 mm (1.18 in.)	120 mm (4.72 in.)
Up to 20,000 mm (787.00 in.)	+15 mm (0.59 in.)/-45 mm (1.77 in.)	140 mm (5.51 in.)

Note: Tolerance of total length has no influence on the stroke length.

RFV-B – RFV base unit, example: Connection type HXX/RXX/TXX (straight cable outlet)



Stroke length	Tolerance of total length	Dead zone
Up to 7620 mm (300.00 in.)	+8 mm (0.31 in.)/-5 mm (0.20 in.)	94 mm (3.70 in.)
Up to 10,000 mm (393.70 in.)	+15 mm (0.59 in.)/-15 mm (0.59 in.)	100 mm (3.94 in.)
Up to 15,000 mm (590.55 in.)	+15 mm (0.59 in.)/-30 mm (1.18 in.)	120 mm (4.72 in.)
Up to 20,000 mm (787.00 in.)	+15 mm (0.59 in.)/-45 mm (1.77 in.)	140 mm (5.51 in.)

Note: Tolerance of total length has no influence on the stroke length.

Controlling design dimensions are in millimeters and measurements in () are in inches

Fig. 3: Tempsonics® RFV with ring magnet, part 2

CONNECTOR WIRING

D34				
Signal + power supply				
M12 male connector	Output	Pin	Function	
	1	1	+12...30 VDC ($\pm 20\%$)	
		2	Position (magnet 1)	
	2*	3	DC Ground (0 V)	
		4	Position (magnet 2) or reverse position (magnet 1) or speed or velocity (magnet 1) or temperature inside the sensor electronics housing	
		5	Signal Ground	

Fig. 4: Connector wiring D34

D60				
Signal + power supply				
M16 male connector	Output	Pin	Function	
	1	1	Position (magnet 1)	
		2	Signal Ground	
	2*	3	Position (magnet 2) or reverse position (magnet 1) or speed or velocity (magnet 1) or temperature inside the sensor electronics housing	
		4	Signal Ground	
		5	+12...30 VDC ($\pm 20\%$)	
		6	DC Ground (0 V)	

Fig. 5: Connector wiring D60

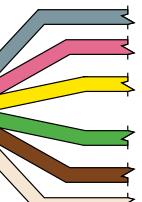
HXX or LXX / RXX or EXX / TXX or GXX / UXX					
Signal + power supply					
Cable	Output	Color	Function		
	1	GY	Position (magnet 1)		
		PK	Signal Ground		
	2*	YE	Position (magnet 2) or reverse position (magnet 1) or speed or velocity (magnet 1) or temperature inside the sensor electronics housing		
			GN	Signal Ground	
			BN	+12...30 VDC ($\pm 20\%$)	
		WH	DC Ground (0 V)		

Fig. 6: Connector wiring cable outlet

Straight cable outlet			Cable type		Angled cable outlet				
H	X	X	Part no. 530 052	PUR	→	L	X	X	Part no. 530 052
R	X	X	Part no. 530 032	PVC	→	E	X	X	Part no. 530 032
T	X	X	Part no. 530 112	FEP	→	G	X	X	Part no. 530 157

Fig. 7: Cable types assignment

FREQUENTLY ORDERED ACCESSORIES

– Additional options available in our [Accessories Catalog 551444](#)

Position magnets			
U-magnet OD33 Part no. 251 416-2	Ring magnet OD60 Part no. MT0162	Ring magnet Part no. 402 316	U-magnet OD63.5 Part no. 201 553
<p>Material: PA ferrite GF20 Weight: Approx. 11 g Surface pressure: Max. 40 N/mm² Fastening torque for M4 screws: 1 Nm Operating temperature: -40...+105 °C (-40...+221 °F)</p> <p>Material: AlCuMgPb, magnets compound-filled Weight: Approx. 90 g Surface pressure: Max. 20 N/mm² Fastening torque for M4 screws: 1 Nm Operating temperature: -40...+75 °C (-40...+167 °F)</p> <p>Material: PA ferrite coated Weight: Approx. 13 g Surface pressure: Max. 20 N/mm² Operating temperature: -40...+100 °C (-40...+212 °F)</p> <p>Material: PA 66-GF30, magnets compound-filled Weight: Approx. 26 g Surface pressure: 20 N/mm² Fastening torque for M4 screws: 1 Nm Operating temperature: -40...+75 °C (-40...+167 °F)</p>			
O-rings		Mounting accessories	
O-ring for threaded flange M18x1.5-6g Part no. 401 133	O-ring for threaded flange 3/4"-16 UNF-3A Part no. 560 315	Hex jam nut M18x1.5-6g Part no. 500 018	Hex jam nut 3/4"-16 UNF-3A Part no. 500 015
<p>Material: Fluoroelastomer Durometer: 75 ± 5 Shore A Operating temperature: -40...+204 °C (-40...+400 °F)</p> <p>Material: Fluoroelastomer Durometer: 75 ± 5 Shore A Operating temperature: -40...+204 °C (-40...+400 °F)</p>		<p>Material: Steel, zinc plated</p> <p>Material: Steel, zinc plated</p>	
Mounting accessories			
Threaded flange M18x1.5-6g Part no. 404 874	Threaded flange 3/4"-16 UNF-3A Part no. 404 875		
Material: Stainless steel 1.4305 (AISI 303)	Material: Stainless steel 1.4305 (AISI 303)		

Controlling design dimensions are in millimeters and measurements in () are in inches

Mounting accessories



**Pressure rod with threaded flange
with flat-face (M18×1.5-6g)
and O-ring**

HD [length mm: XXXX] M
HD [length in.: XXX.X] U

Pressure rod Ø: 12.7 mm (0.5 in.)
Length: 100...7500 mm (4...295 in.)
Operating pressure: 350 bar (5076 psi)
Material flange:
Stainless steel 1.4305 (AISI 303)
Material rod:
Stainless steel 1.4301 (AISI 304)



**Pressure rod with threaded flange
with flat-face (3/4"-16 UNF-3A)
and O-ring**

HL [length mm: XXXX] M
HL [length in.: XXX.X] U

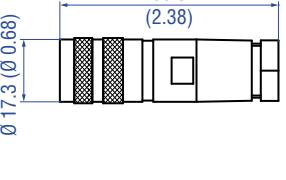
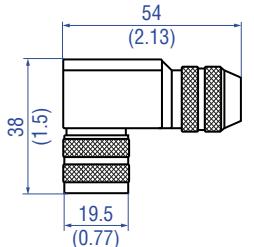
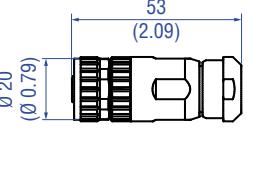
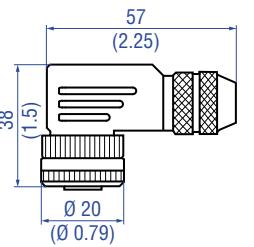
Pressure rod Ø: 12.7 mm (0.5 in.)
Length: 100...7500 mm (4...295 in.)
Operating pressure: 350 bar (5076 psi)
Material flange:
Stainless steel 1.4305 (AISI 303)
Material rod:
Stainless steel 1.4301 (AISI 304)



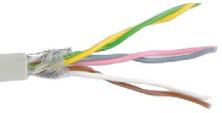
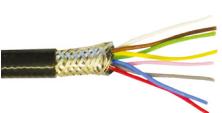
**Profile with flange
HFP [length mm: XXXXX] M
HFP [length in.: XXXX.X] U**

Length: Max. 20 000 mm (max. 787 in.)
Ingress protection: IP30
Material: Aluminum

Cable connectors*

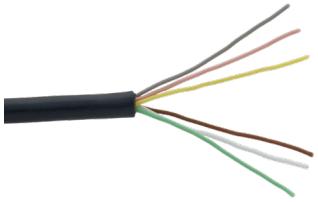
			
M16 female connector (6 pin), straight Part no. 370 423	M16 female connector (6 pin), angled Part no. 370 460	M12 A-coded female connector (4 pin/5 pin), straight Part no. 370 677	M12 A-coded female connector (5 pin), angled Part no. 370 678
Material: Zinc nickel plated Termination: Solder Cable Ø: 6...8 mm (0.24...0.31 in.) Operating temperature: -40...+100 °C (-40...+212 °F) Ingress protection: IP65/IP67 (correctly fitted) Fastening torque: 0.6 Nm	Material: Zinc nickel plated Termination: Solder Cable Ø: 6...8 mm (0.24...0.31 in.) Wire: 0.75 mm ² (20 AWG) Operating temperature: -40...+95 °C (-40...+203 °F) Ingress protection: IP67 (correctly fitted) Fastening torque: 0.6 Nm	Material: GD-Zn, Ni Termination: Screw Contact insert: CuZn Cable Ø: 4...8 mm (0.16...0.31 in.) Wire: 1.5 mm ² Operating temperature: -30...+85 °C (-22...+185 °F) Ingress protection: IP67 (correctly fitted) Fastening torque: 0.6 Nm	Material: GD-Zn, Ni Termination: Screw; max. 0.75 mm ² Contact insert: CuZn Cable Ø: 5...8 mm (0.2...0.31 in.) Wire: 0.75 mm ² (18 AWG) Operating temperature: -25...+85 °C (-13...+185 °F) Ingress protection: IP67 (correctly fitted) Fastening torque: 0.4 Nm

Cables

			
PVC cable Part no. 530 032	PUR cable Part no. 530 052	FEP cable Part no. 530 112	FEP cable Part no. 530 157
Material: PVC jacket; gray Features: Twisted pair, shielded, flexible Cable Ø: 6 mm (0.23 in.) Cross section: 3 x 2 x 0.14 mm ² Bending radius: 10 x D (fixed installation) Operating temperature: -40...+105 °C (-40...+221 °F)	Material: PUR jacket; orange Features: Twisted pair, shielded, highly flexible, halogen free, suitable for drag chains, mostly oil & flame resistant Cable Ø: 6.4 mm (0.25 in.) Cross section: 3 x 2 x 0.25 mm ² Bending radius: 5 x D (fixed installation) Operating temperature: -30...+80 °C (-22...+176 °F)	Material: FEP jacket; black Features: Twisted pair, shielded, flexible, high thermal resistance, mostly oil & acid resistant Cable Ø: 7.6 mm (0.3 in.) Cross section: 4 x 2 x 0.25 mm ² Bending radius: 8 – 10 x D (fixed installation) Operating temperature: -100...+180 °C (-148...+356 °F)	Material: FEP jacket; black Features: Twisted pair, shielded Cable Ø: 6.7 mm (0.26 in.) Cross section: 3 x 2 x 0.14 mm ² Operating temperature: -100...+180 °C (-148...+356 °F)

*/ Follow the manufacturer's mounting instructions

Controlling design dimensions are in millimeters and measurements in () are in inches

Cables	Cable sets	
		
Silicone cable Part no. 530 176 <p>Material: Silicone jacket; black Features: Twisted pair, shielded Cable Ø: 6.3 mm (0.25 in.) Cross section: 3 x 2 x 0.14 mm² Bending radius: 7 x D (fixed installation) Operating temperature: -50...+150 °C (-58...+302 °F)</p>	Cable with M12 A-coded female connector (5 pin), straight – pigtail Part no. 370 673 <p>Material: PUR jacket; black Features: Shielded Cable length: 5 m (16.4 ft) Ingress protection: IP67 (correctly fitted) Operating temperature: -25...+80 °C (-13...+176 °F)</p>	Cable with M12 A-coded female connector (5 pin), angled – pigtail Part no. 370 675 <p>Material: PUR jacket; black Features: Shielded Cable length: 5 m (16.4 ft) Ingress protection: IP67 (correctly fitted) Operating temperature: -25...+80 °C (-13...+176 °F)</p>
Programming tools		
		
Hand programmer for analog output Part no. 253 124 <p>Easy teach-in-setups of stroke length and direction on desired zero / span positions. For sensors with 1 magnet.</p>	Cabinet programmer for analog output Part no. 253 408 <p>Features snap-in mounting on standard DIN rail (35 mm). This programmer can be permanently mounted in a control cabinet and includes a program/run switch. For sensors with 1 magnet.</p>	TempoLink® kit for Tempsonics® R-Series V <p>Part no. TL-1-0-AD60 (for D60) Part no. TL-1-0-AS00 (for cable outlet) Part no. TL-1-0-AD34 (for D34)</p> <ul style="list-style-type: none"> • Connect wirelessly via Wi-Fi enabled device or via USB with the diagnostic tool • Simple connectivity to the sensor via 24 VDC power line (permissible cable length: 30 m) • User friendly interface for mobile devices and desktop computers • See data sheet "TempoLink® smart assistant" (document part no.: 552070) for further information

Controlling design dimensions are in millimeters and measurements in () are in inches
Color of connectors and cable jacket may change. Colors of the cores and technical properties remain unchanged.

Extension cables



PVC cable with M16 female connector (6 pin), straight – pigtail

PVC cable (part no. 530 032) with M16 female connector, straight (part no. 370 423)

Order code:

K2-A-370423-xxxxyy-530032-0

(where xxxx = cable length and yy = unit in centimeters „CM“ or feet „FT“)



PUR cable with M16 female connector (6 pin), straight – pigtail

PUR cable (part no. 530 052) with M16 female connector, straight (part no. 370 423)

Order code:

K2-A-370423-xxxxyy-530052-0

(where xxxx = cable length and yy = unit in centimeters „CM“ or feet „FT“)



Teflon® cable with M16 female connector (6 pin), straight – pigtail

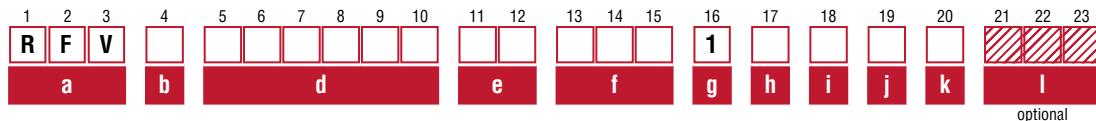
FEP cable (part no. 530 112) with M16 female connector, straight (part no. 370 423)

Order code:

K2-A-370423-xxxxyy-530112-0

(where xxxx = cable length and yy = unit in centimeters „CM“ or feet „FT“)

ORDER CODE



a	Sensor model
R F V	Flexible rod

b	Design
B	Base unit
M	Threaded flange M18x1.5-6g (standard)
S	Threaded flange 3/4"-16 UNF-3A (standard)

Section **c** is intentionally omitted.

d	Stroke length
X X X X X M	00150...20000 mm
Stroke length (mm) Ordering steps	
150... 1000 mm	50 mm
1000... 5000 mm	100 mm
5000...10000 mm	250 mm
10000...15000 mm	500 mm
15000...20000 mm	1000 mm
X X X X X U	0006.0...0787.0 in.

Stroke length (in.)	Ordering steps
6... 40 in.	2 in.
40...197 in.	4 in.
197...394 in.	10 in.
394...591 in.	20 in.
591...787 in.	40 in.

Non standard stroke lengths are available;
must be encoded in 5 mm/0.1 in. increments

e	Number of magnets
0 X	01...02 Position(s) (1...2 magnet(s))

f	Connection type
Connector	
D 3 4	M12 male connector (5 pin)
D 6 0	M16 male connector (6 pin)
Angled cable outlet	
E X X	XX m/ft. PVC cable (part no. 530 032) E01...E30 (1...30 m/3...99 ft.) See "Frequently ordered accessories" for cable specifications
G X X	XX m/ft. FEP cable (part no. 530 157) G01...G30 (1...30 m/3...99 ft.) See "Frequently ordered accessories" for cable specifications
L X X	XX m/ft. PUR cable (part no. 530 052) L01...L30 (1...30 m/3...99 ft.) (Note the temperature range of the cable!) See "Frequently ordered accessories" for cable specifications
U X X	XX m/ft. Silicone cable (part no. 530 176) U01...U30 (1...30 m/3...99 ft.) See "Frequently ordered accessories" for cable specifications
Straight cable outlet	
H X X	XX m/ft. PUR cable (part no. 530 052) H01...H30 (1...30 m/3...99 ft.) (Note the temperature range of the cable!) See "Frequently ordered accessories" for cable specifications
R X X	XX m/ft. PVC cable (part no. 530 032) R01...R30 (1...30 m/3...99 ft.) See "Frequently ordered accessories" for cable specifications
T X X	XX m/ft. FEP cable (part no. 530 112) T01...T30 (1...30 m/3...99 ft.) See "Frequently ordered accessories" for cable specifications
Encode in meters if using metric stroke length. Encode in feet if using US customary stroke length.	

g	System
1	Standard
h	
A	Current
V	Voltage

i	Function
1	Position (1 or 2 magnets/outputs)
2	Position and speed (1 magnet and 2 outputs)
3	Position and velocity (1 magnet and 2 outputs)
4	Position and reverse position (1 magnet and 2 outputs)
5	Position and temperature inside the sensor electronics housing (1 magnet and 2 outputs)
6	Differential (2 magnets and 1 output)

j	Options
0	Standard
3	Over range output mode

k	Output range
0	0...10 VDC or 4...20 mA
1	10...0 VDC or 20...4 mA
2	-10...+10 VDC or 0...20 mA
3	+10...-10 VDC or 20...0 mA
V	0...10 VDC for position, -10...+10 VDC for velocity

l	Max speed or velocity value
(optional: use when i "Function" is 2 or 3)	
<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	For metric stroke lengths encode speed or velocity in m/s for the values 0.01 to 9.99 m/s (001...999) For US customary stroke lengths encode speed or velocity in inches/s for the values 1 to 400 in./s (001...400)
	Use the codes (00E) for 0.025 m/s, and (A00) for 10.0 m/s to provide backwards compatibility for these predecessor models of the R-Series.

NOTICE

- Specify the number of magnets for your application and order the magnets separately.
- The number of magnets is limited by the stroke length. The minimum allowed distance between magnets (i.e. front face of one to the front face of the next one) is 75 mm (3 in.).
- Use magnets of the same type for multi-position measurement.

DELIVERY



RFV-B:

- Base unit (without flange & rod assembly)
- 3 x socket screws M4x59

RFV-M/-S:

- Sensor
- O-ring

Accessories have to be ordered separately.

Manuals, Software & 3D Models available at:
www.temposonics.com

GLOSSARY

A

Analog output

For a sensor with analog output, the measured value is output as an analog voltage signal or current signal.

D

Differential

For differential measurement, the distance between the two position magnets is output as a value.
(→ Multi-position measurement)

M

Max speed or velocity value

For speed or velocity, the output value generated is scaled based on the maximum speed or velocity value indicated in the order code.

Measuring direction

- Forward: Values increasing from sensor electronics housing to rod end/profile end
- Reverse: Values decreasing from sensor electronics housing to rod end/profile end

Multi-position measurement

During the measurement cycle, the positions of every magnet on the sensor are simultaneously reported. The velocity or speed are continuously calculated based on these changing position values as the magnets are moved.

O

Over range output mode

When enabled this mode allows the position output values to continue to increase or decrease when the magnet travels beyond the active stroke range.

R

Resolution

The sensor precisely measures time to provide the position measurement. For the analog output the measured time value is converted into an analog voltage signal or current signal using a high-performance **Digital to Analog Converter (DAC)** having 16 bits of resolution.

S

Speed

The output value for speed indicates how fast the position magnet is being moved, independent of the measuring direction. (→ Velocity)

T

Temperature inside the sensor electronics housing

The temperature inside the sensor electronics housing is reported as an analog voltage signal or current signal. For each output range, the 0 % output value has the factory default setpoint at -40 °C, and the 100 % output value has the default setpoint at +100 °C.
Note: a dedicated temperature chip is used for the output signal and its values may vary from those reported on the TempoLink® application screen.

V

Velocity

The output value for velocity indicates how fast the position magnet is being moved, and in which direction. (→ Speed)



Tempsonics

AN AMPHENOL COMPANY

UNITED STATES 3001 Sheldon Drive
Tempsonics, LLC Cary, N.C. 27513
Americas & APAC Region Phone: +1 919 677-0100
E-mail: info.us@tempsonics.com

GERMANY Auf dem Schüffel 9
Tempsonics 58513 Lüdenscheid
GmbH & Co. KG Phone: +49 2351 9587-0
EMEA Region & India E-mail: info.de@tempsonics.com

ITALY Phone: +39 030 988 3819
Branch Office E-mail: info.it@tempsonics.com

FRANCE Phone: +33 6 14 060 728
Branch Office E-mail: info.fr@tempsonics.com

UK Phone: +44 79 21 83 05 86
Branch Office E-mail: info.uk@tempsonics.com

SCANDINAVIA Phone: +46 70 29 91 281
Branch Office E-mail: info.sca@tempsonics.com

CHINA Phone: +86 21 2415 1000 / 2415 1001
Branch Office E-mail: info.cn@tempsonics.com

JAPAN Phone: +81 3 6416 1063
Branch Office E-mail: info.jp@tempsonics.com

Document Part Number:
552123 Revision A (EN) 02/2026



ISO 9001
CERTIFIED



tempsonics.com