

Absolute, Non-Contact Position Sensors

C-Series Core Sensor Analog

Temposonics® C-Series
Measuring length 72 - 250 mm



- **Non-contact** - No wear, such as found with pot wipers on conductive mylar, particularly when mounted on dithered actuators
- **Light Weight** - Ideal for small portable OEM products
- **Low Cost** - Total Cost Competitive* with linear pots or LVDT's
- **Short Operating Space** - Half the space needed compared to LVDTs or rod and cylinder pots
- **Small Size** - This smallest package in the market that has all the benefits of magnetostrictive sensing yet fits where no other can
- **Low Power Needs** - Allows use with printed circuit-level supplies of 5 VDC
- **No Drift** - No periodic re-calibration needed
- **Optional Supply Voltages** - Allows use in 5 or 12-Volt systems
- **Optional Housings** - Allows exposed use by offering mounting options and several levels of environmental protection up to protection IP67 / IP69K
- **Optional Magnets** - Other magnet configurations allow greater range of installation choices
- **Customizable Active Zones** - Offers full output sensitivity for smaller active zones
- **Customizable Reading Direction** - Forward or Reverse acting analog output allows match to control requirements

Applications

OEM products needing embedded or externally mounted continuous position or liquid level information.

Markets

Medical treatment equipment and mobility devices, a wide range of tools, entertainment automations, marine steering and trim, HVAC, food preparation equipment, exercise equipment, off-road equipment, and any high volume market needing low cost, small, embeddable position sensing.

Temposonics-C

Core Sensor

C-Series Product Line

The C-Series modular sensor line was created to support industrial, medical and consumer product OEMs who recognize the benefits of magnetostrictive position sensing technology but didn't have a product solution that could be tailored to their high volume but low-cost driven sensing needs. This line is a more reliable, no wear measurement system compared to traditional alternatives such as pots and lvdts. No other magnetostrictive sensor manufacturer can offer such a small, embeddable or externally mountable, yet highly malleable sensor at high volume pricing that is attractive for high volume OEM products.

The C-Series Core Sensor is the common sensor for all C-Series models. C-Series additional protective housings and accessories can be added to this Core Sensor.

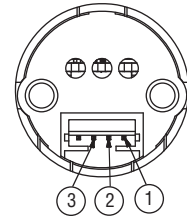
The Core Sensor

The Core Sensor is a complete, functional sensor in every respect making it ideal for embedded sensor applications where the OEM product provides all the environmental protection necessary for the application and any additional sensor protective housing would be redundant, representing unnecessary cost in extremely cost sensitive moderate to high volume OEM products. There are two models, the CS and CM. The CS is designed for general purpose applications and requires 5 Volt power supply. The CM is designed specifically for mobile equipment applications by including additional protection from over voltage and reverse connection and requiring a 12 or 24 Volt supply. Connection is made via a four-pin, JST PHR-4 model mating connector for use with 24 AWG wire in MTS provided cables or discrete wire pigtails. The connection is also compatible with the JST KRD 04-KR-06 installation displacement 26 AWG Connector.

Other Views



CS Connector PIN Designations 24 AWG



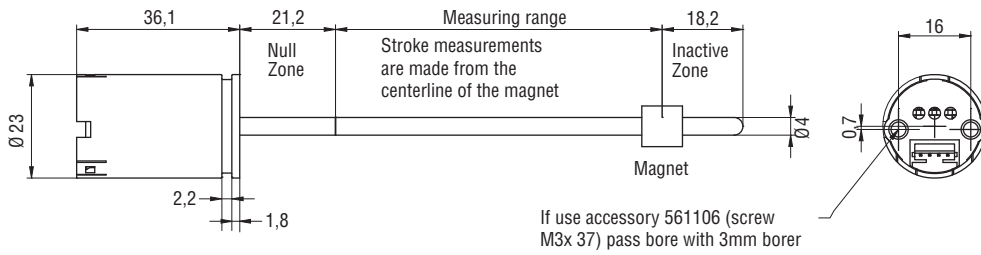
Wiring Pin Designations

Pin	Color Convention (Optional wire/cable)	Signal
1	White	Common
2	Green	Voltage Output
3	Brown	Supply Voltage (+)

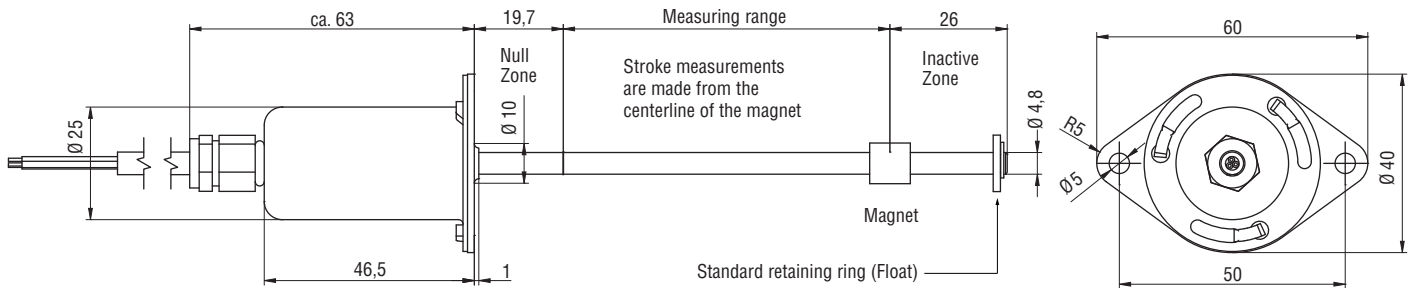
Technical Data

Output:	
Analog:	Type CS 0.1 to 4.9 VDC 5 VDC supply, ratiometric with V supply Type CM 0.1 to 4.9 VDC, fixed output 12 VDC supply $\pm 25\%$; forward acting (Contact MTS about customized reverse acting or redefined active zones)
Update frequency:	500 Hz (2 ms)
Active strokes available:	72.3, 109.5, 128.3, 148.0, 162.3, 186.3, 194.3, 217.3 and 250.1 mm
Non-linearity:	± 0.15 mm without correction, using a 401842 magnet measured between 5% and 95% of active stroke.
Repeatability:	± 25 μ m
Hysteresis:	± 25 μ m
Operating temperature:	-40°C to +75°C (for 105°C consult MTS)
Supply requirements:	CS: 5 VDC -5%, +10%; CM: 12 VDC $\pm 25\%$
Current consumption:	max. 40 mA
Mounting:	2 x M3 screws
Temperature drift:	± 20 μ m/°C
Output load:	≥ 10 k Ω
Standard magnet:	401842 (float and other magnets optional)
Package rating:	IP30, H2-Model: IP67, M1-Model: IP69K
Zero tolerance:	± 1.0 mm
RF emissions and immunity:	Contact MTS
Mating connector:	JST PHR-4 socket female (24 AWG) crimp pin JST 04KR-D6S (26 AWG) insulation displacement
Protective housing IP67 - IP69K	H2: Material 1.4404 / 316L - M1: Material 1.4305 / 303

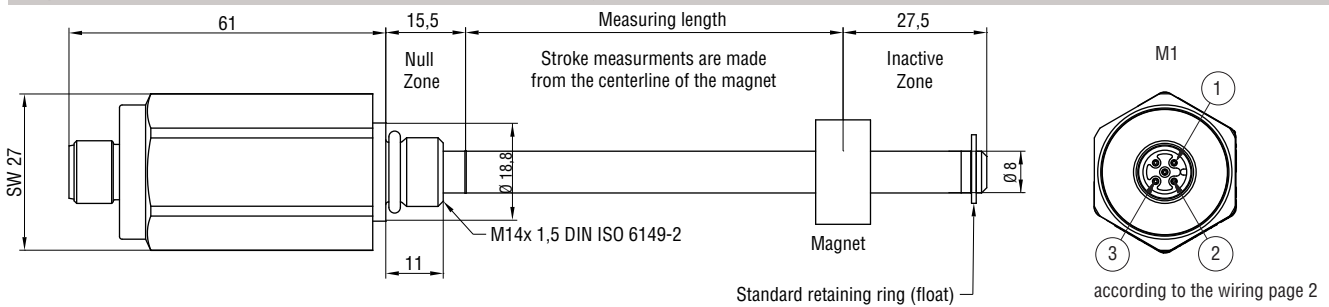
Dimensions



Temposonics® C-Series - Basis sensor with IP67 standard housing H2



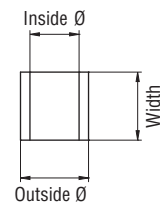
Temposonics® C-Series - Basis sensor with IP69K standard housing M1



Magnets and Floats

Ring Magnets

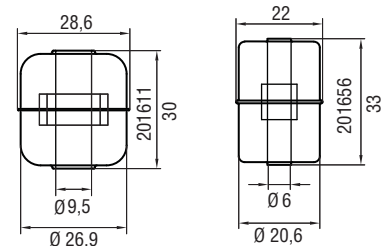
Description	Part No.	I.D.	O.D.	Thickness
6 mm standard ring magnet	401842	6.5 mm	9 mm	9 mm
19,3 mm ring magnet (optional after approval)	400424	19,3 mm	28 mm	4,9 mm
13,5 mm ring magnet (optional after approval)	254012	13,5 mm	20 mm	10,5 mm



See "Technical Note 551056" for magnet installation

Float Kit

Description	Part No.	O.D.	I.D.	Depth
Float 1 (optional after approval)	201611	28.6 mm	9.5 mm	30 mm
Float 2 (optional after approval)	201656	22 mm	6 mm	32 mm



Temposonics-C

Core Sensor

Temposonics®

C

Sensor Model

C-Series Sensor

Standard or mobile supply

S = 5 VDC

M = 12 VDC

Stroke length

072 = 72.3mm

109 = 109.5mm

128 = 128.3mm

148 = 148.0mm

162 = 162.3mm

186 = 186.3mm

194 = 194.3mm

217 = 217.3mm

250 = 250.1mm

Connection options

A = JST PHR-4 Connector

Output

V = Analog Voltage

IP67 and IP69K housing (options)

Blank = No housing; core sensor only.

H2 = Standard IP67 two-hole flange housing, incl. 1m connecting cable without connector

M1 = IP69K-Standard housing with connector M14x1,5 connecting thread, pressure-resistant measuring tube

How to Order - Required

1. ORDER PART NUMBER FOR SENSOR with or without IP67 and IP69 housing.
2. ORDER appropriate magnet or float (one per sensor)

How to Order - Options

3. ORDER mating connector or cable assemblies as needed.
4. IP67 housing component kits are available for those wishing to purchase housings as separate line items.
5. M1 Standard housing delivered without cable.

Magnet and Float Options (one required per sensor)

Description	Function/Notes	Part No.
6 mm ring magnet	standard	401842
19,3 mm optional ring magnet	optional after approval for applications requiring a magnet with more clearance	400424
13,5 mm optional ring magnet	optional after approval for applications requiring a magnet with more clearance	254012
Button magnet	optional after approval for applications that cannot use a ring magnet (note operating clearance limits)	253619
Float 1 with magnet	optional after approval	201611
Float 2 with magnet	optional after approval	201656

Mating Connector & Cable Assembly Options

Description	Function/Notes	Part No.
JST KRD connector only	Insulation displacement mating connector only	370500
JST PHR-4 connector & cable	(Analog) Mating connector with 1 meter cable	253396-1000

IP67 Housing Component Kits

Description	Function/Notes	Part No.
Cover kit H2	Electronics housing, strain relief, O-Ring	253525
Flange and pipe kit H2	2-hole flange/pipe assemble order with -XXX	253526 -XXX = 072 - 250 Stroke length
Screw	M3 X 37 DIN 7500 (Two required for each sensor)	561106

www.mtssensor.de

www.temposonics-shop.de

Service Hotline: 01805 - mtssensor

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