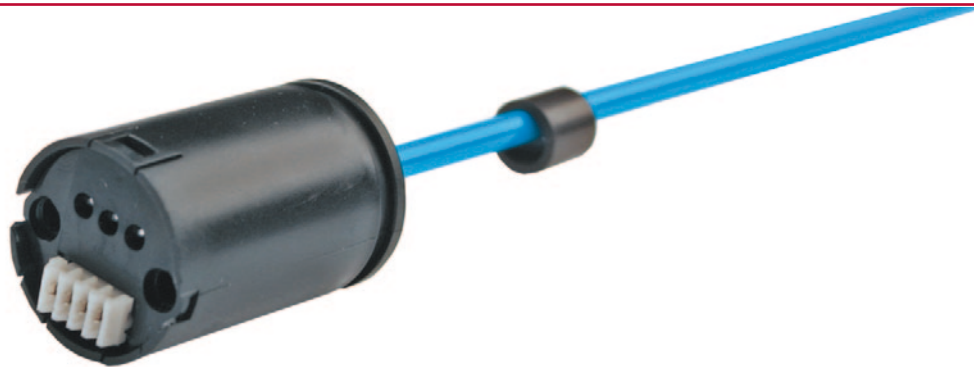


Absolute, Non-Contact Position Sensors

C-Series Core Sensor PWM

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 analogue 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

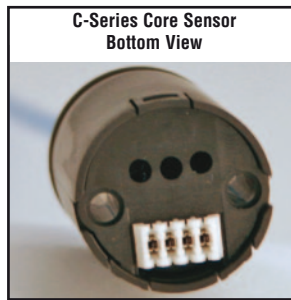
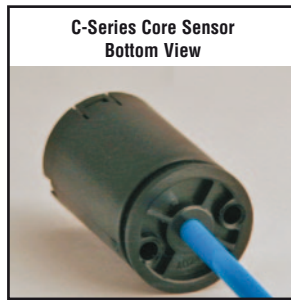
The C-Series modular sensor line was created to support industrial, medical and consumer product OEMs who recognize the benefits of magnetostrictive position sensing technology but didn't have a product solution that could be tailored to their high volume but low-cost driven sensing needs. This line 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.

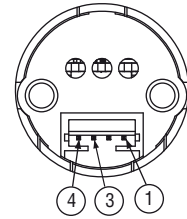
The Core Sensor

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 pigtailed. The connection is also compatible with the JST KRD 04-KR-06 insulation displacement 26 AWG Connector.

Other Views



CS Connector PIN Designations 24 AWG



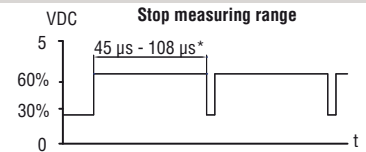
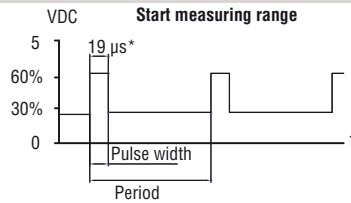
Wiring Pin Designations

| Pin | Color Convention (Optional wire/cable) | Signal |
|-----|--|--------------------|
| 1 | White | Common |
| 3 | Brown | Supply Voltage (+) |
| 4 | Green | PWM Output |

Technical Data

Output:

Digital: PWM (Pulse width signal)



*Dependent on measuring range and wave guide

Update frequency:

2,6 kHz (0.385 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 μm

Hysteresis:

± 25 μm

Operating temperature:

-40°C to +75°C (for 105°C consult MTS)

Supply requirements: DC

CS: 5 VDC -5%, +10%; CM: 12 VDC ± 25%

Current consumption:

max. 40 mA

Mounting:

2 x M3 screws

Temperature drift:

± 20 μm/°C

Output load:

>= 400 Ω

Standard magnet:

401842 (float and other magnets optional)

Package rating:

IP30, H2-Model: IP67, M-Model: IP69K

Zero tolerance:

± 1.0 mm

RF emissions and immunity:

Contact MTS

Mating connector:

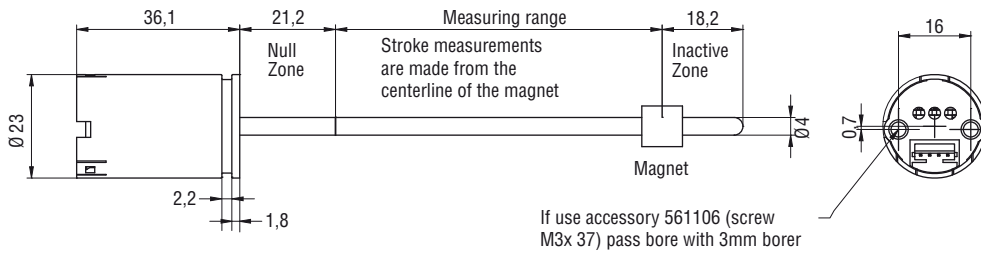
JST PHR-4 socket female (24 AWG) crimp pin

JST 04KR-D6S (26 AWG) insulation displacement

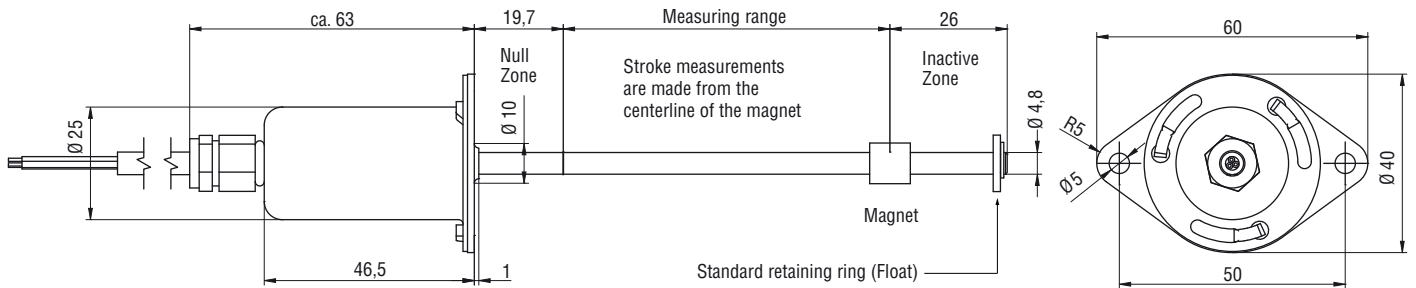
Protective housing IP67- IP69K

H2: Material 1.4404 / 316L - M1: Material 1.4305 / 303

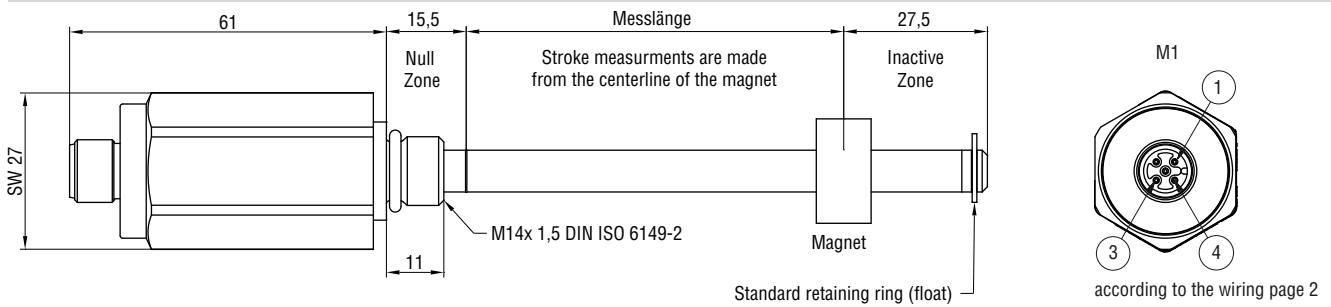
Dimensions



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



Temposonics® C-Series - Basis sensor with IP69 standard housing M

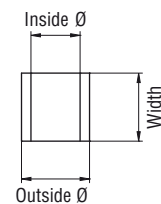


Magnets and Floats

Ring Magnets

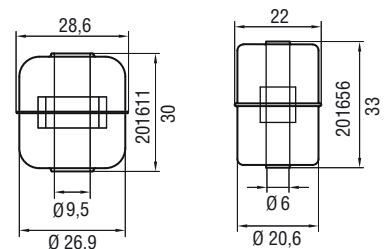
| Description | Part No. | I.D. | O.D. | Thickness |
|---|----------|---------|-------|-----------|
| 6 mm standard ring magnet | 401842 | 6.5 mm | 9 mm | 9 mm |
| 19,3 mm ring magnet (optional after approval) | 400424 | 19,3 mm | 28 mm | 4,9 mm |
| 13,5 mm ring magnet (optional after approval) | 254012 | 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 = 12VDC

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

D = Digital Voltage

IP67 and IP69 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 M12x1 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 with magnet | 201611 |
| Float 2 with magnet | optional after approval with magnet | 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 | (PWM) Mating connector with 1 meter cable | 253398-1000 |

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

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