Analog Linear Displacement Sensor

FEATURES

- Conductive plastic potentiometer technology. Infinite resolution
- Anodized light alloy housing
- Precious metal multi-contact wiper
- Stainless steel floating shaft
- Flange mounting
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

QUICK REFERENCE DATA	
Sensor type	LINEAR, conductive plastic
Output type	Output by cable
Market appliance	Industrial
Dimensions	35 mm

ELECTRICAL SPECIFICATIONS												
PARAMETER												
Theoretical electrical travel (TET)	UET - 0 mm + 2 mm											
Independent linearity standard	± 0.1 %											
Independent linearity optional	± 0.05 %											
Tolerance on R_n	± 20 %											
Temperature coefficient	-300 ± 300 ppm/°C											
Wiper current	≤ 1 mA											
Recommended load impedance	≥ 1000 R_n											
Dielectric strength	500 V_{RMS}, 50 Hz, 1 min											
Insulation resistance	≥ 10 GΩ at 500 V_{DC}											
Output smoothness	≤ 0.05 %											
Useful electrical travel (UET)	100 mm	150 mm	200 mm	250 mm	300 mm	400 mm	500 mm	600 mm	700 mm	800 mm	900 mm	1000 mm
Total resistance R_n (E3 series)	4.7 kΩ	4.7 kΩ	4.7 kΩ	4.7 kΩ	4.7 kΩ	10 kΩ	10 kΩ	22 kΩ	22 kΩ	47 kΩ	47 kΩ	47 kΩ
Power rating at +70 °C (0.15 W/cm of travel)	1.5 W	2.25 W	3 W	3.75 W	4.5 W	6 W	7.5 W	9 W	10.5 W	12 W	13.5 W	15 W

SPECIFIC CHARACTERISTICS	
PARAMETER	
Shaft version	F = floating
	G = guided (on request)
Connector output	S = standard (straight plug)
	C = with right angle plug (on request)
Cable output	A = axial cable sheath (on request)
	R = radial cable (on request)

MECHANICAL SPECIFICATIONS												
PARAMETER												
Mechanical travel	UET + 3 mm min.											
Driving force	≤ 5 N in F version (floating shaft)											
	≤ 10 N in G version (guided shaft)											
Backlash	< 10 µm											
Protection class	IP 50 in F version (floating shaft)											
	IP 64 in G version (guided shaft)											
Maximum displacement speed	1.5 m/s											
Shaft / body misalignment	≤ ± 0.5 mm in F version											
Mounting	Flanges											
Useful electrical travel (UET)	100 mm	150 mm	200 mm	250 mm	300 mm	400 mm	500 mm	600 mm	700 mm	800 mm	900 mm	1000 mm
Weight – Shaft + wiper	46 g	56 g	67 g	78 g	89 g	110 g	131 g	153 g	175 g	196 g	220 g	240 g
Weight – Sensor	450 g	540 g	620 g	720 g	800 g	970 g	1140 g	1320 g	1490 g	1660 g	1830 g	2000 g

PERFORMANCE

PARAMETER	
Operating temperature range	-40 °C to +105 °C
Storage temperature range	-55 °C to +125 °C
Life	20M operations for UET ≤ 250 mm
	10M operations for 250 < UET ≤ 600 mm
	5M operations for UET < 600 mm

Note

- Nothing stated herein shall be construed as a guarantee of quality or durability.

SAP PART NUMBERING GUIDELINES

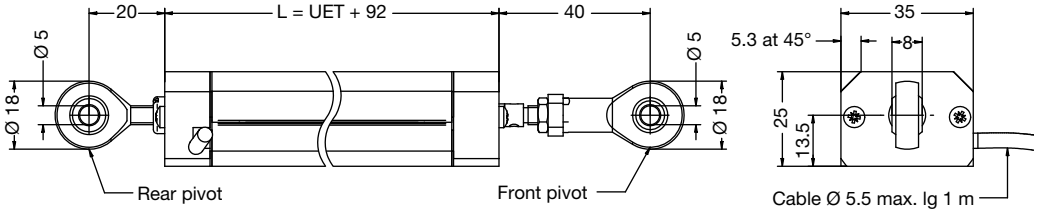
MODEL	USEFUL ELECTRICAL TRAVEL (mm)	SHAFT VERSION	VALUE	LINEARITY	LEADS	PACKAGING
RH28	0025 0050 0100 0150 0200 0250 0300 0350 0400 0500 0600 0700 0800 0900 1000	F = floating shaft	472 = 4K7 103 = 10K 223 = 22K 473 = 47K In accordance with UET, see “Electrical Specifications”	D = 0.1 %	S = standard (straight plug)	B = box

ACCESSORY

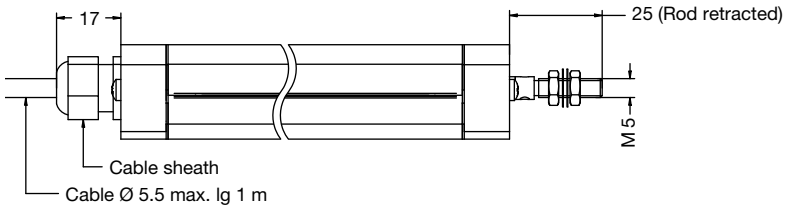
Front pivot	ACCSRH28EPIVOTB
Rear pivot	ACCSRH28MPIVOTB
Straight angle plug	ACCSRH28SCONNEB
Right angle plug	ACCSRH28ACONNEB

DIMENSIONS in millimeters

RADIAL CABLE OUTPUT VERSION (R) (WITH OPTIONAL FRONT AND REAR PIVOTS) (ON REQUEST)

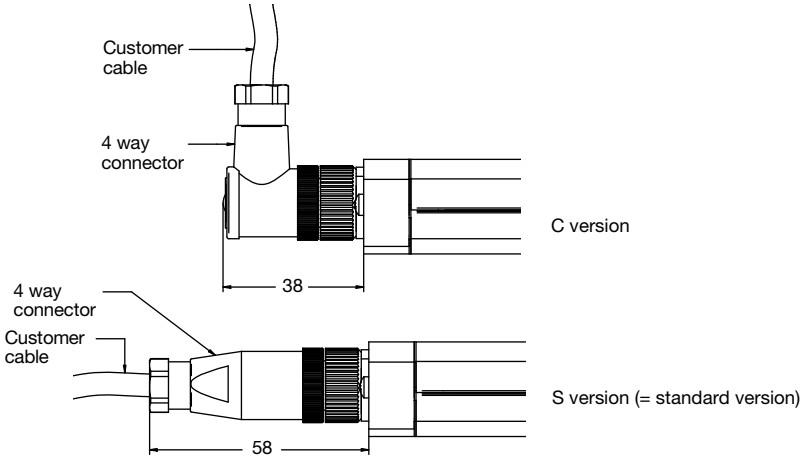


AXIAL CABLE OUTPUT VERSION (A) (ON REQUEST)

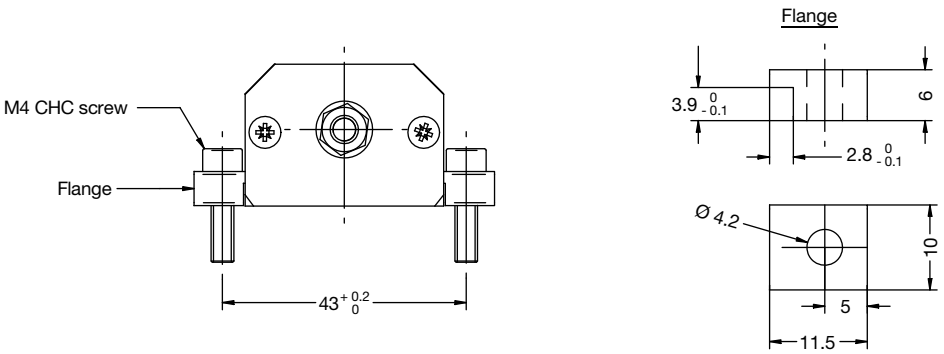


DIMENSIONS in millimeters

CONNECTOR OUTPUT VERSION (WITH STRAIGHT OR RIGHT ANGLE PLUG, S OR C VERSION)

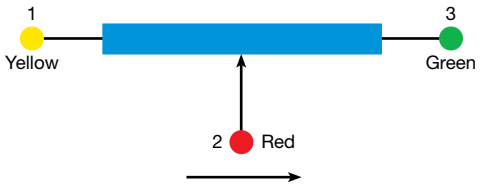


MOUNTING

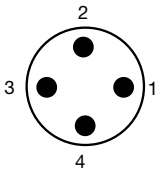


Useful electrical travel UET	Up to 250 mm	300 mm to 550 mm	600 mm to 900 mm	1000 mm
Number of flanges	4	6	8	10

ELECTRICAL DIAGRAM



Direction of wiper displacement with shaft extended



BINDER 713 Series M12 connector (4 pin)
for use with a 3 mm to 6 mm diameter cable
Soldering contacts for 0.75 mm^2 max. wires

OPTIONS (on request)

- Independent linearity ± 0.05 %
- 25 mm and 50 mm electrical travels
- Front pivot
- Rear pivot (with radial cable output only)

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