

CS14 - CARBON ENDLESS SENSOR



14mm rotary position sensor with **360° mechanical rotation** angle (**Electrical 330°**) and up to 1.000.000 cycles of mechanical life.

The CS14 can be manufactured in a wide range of possibilities regarding:

- resistance value, tolerance and tapers,
- **click effect (up to 50 detents)**, featuring ACP's patented detent mechanism,
- positioning of the wiper, housing and rotor color.

Standard taper is linear, featuring upon request absolute linearity up to 2%. ACP can study other **special tapers** (even cut tracks, step curves with areas of constant value, etc)

Through-hole configuration is available; for SMD version, please, enquire. Terminals for through-hole models can be provided straight or crimped, which helps hold the component to the PCB during soldering.

CS14 has plastic housing and Ingress Protection rating type IP 54 (high level of protection against dust and also against water splashing), according to IEC 60529. Plastic materials can be self-extinguishable according to UL 94 V-0 by request.

Thumbwheels and shafts can be provided either separately or already inserted in the sensor.

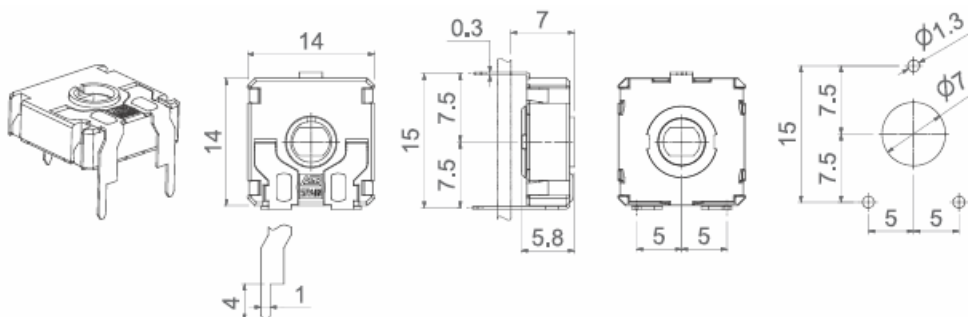
Applications

- Household appliances: control, position sensor.
- Automotive: position adjustment and sensing.
- Industrial: position sensor.

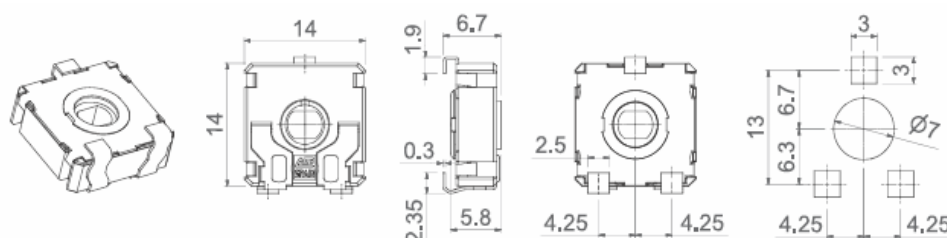
Models:

The model available at launch is V15. VSMD will follow soon. Other models, could be available on request. Please, enquire.

CS14 V15



CS14 VSMD



Electric Specifications

These are standard features, other specifications and out of range values can be studied on request.

	CS14 Through-hole	CS14 SMD
Range of resistance values* Lin (A) Log (B) Antilog (C)	100Ω ≤ Rn ≤ 5MΩ 1 KΩ ≤ Rn ≤ 2M2Ω	100Ω ≤ Rn ≤ 1MΩ 1 KΩ ≤ Rn ≤ 1 MΩ
Tolerance* (please, enquire for >100Kcycles) 100Ω ≤ Rn ≤ 100KΩ 100K < Rn ≤ 1MΩ: 1MΩ < Rn ≤ 5MΩ: Rn > 5MΩ:	±20% ±20% ±30% +50%, -30% (out of range)	±30% ±40% ±50% -
Variation laws	Lin (A) Other tapers available on request	
Residual resistance	Minimum value: 2Ω	
CRV - Contact Resistance Variation (dynamic)	≤3%Rn	
CRV - Contact Resistance Variation (static)	≤5%Rn	
Maximum power dissipation* Lin (A)	at 50°C, 0,15W	
Maximum voltage Lin (A)	250VDC	
Operating temperature	-25°C ... +70 (+85°C on request)	
Temperature coefficient 100Ω ≤ Rn ≤ 10KΩ 10KΩ < Rn ≤ 5MΩ	+200/ -300 ppm +200/ -500 ppm	+200/ -500 ppm +200/ -1000 ppm

* Out of range ohm values and tolerances are available on request, please, enquire.

** Dissipation of special tapers will vary, please, enquire.

Mechanical Specifications

	CS14 Through-hole and SMD
Resistive element	Carbon technology
Angle of rotation (mechanical)	360°
Angle of rotation (electrical)	330°±20°
Wiper standard delivery position	50% ± 15°
Max. push/pull on rotor	50 N
Wiper torque*	For up to 100.000 turns: <2.5 Ncm For over 100.000 turns: <1.5 Ncm
Mechanical life	Standard is 1000 turns. Up to 1.000.000 turns available (please, specify the number needed).

* Stronger or softer torque feeling is available on request.

Test results

The following typical test results (with 95% confidence) are given at 23°C ±2°C and 50% ±25% RH

	Test conditions	Typical variation of Rn*
Damp heat	500 h. at 40°C and 95% RH	±20%
Temperature Coefficient	16h at 85°C, plus 2h at -25°C	±20%
Load life	1.000 h. at 50°C	±20%
Mechanical life	1000 cycles at 10 c.p.m. and at 23°C ± 2°C	±20%
Storage (3 years)	3 years at 23°C ± 2°C	±3%

* Specific conditions can be tested on request.