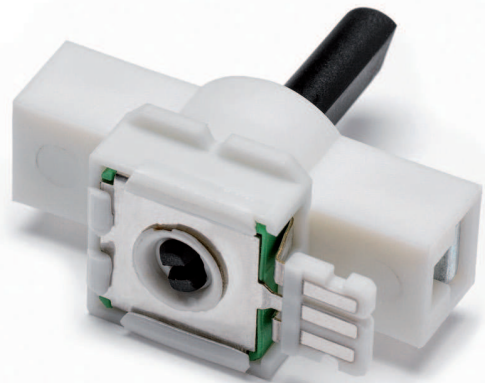


3 Control panel potentiometers

CSF14

Control Panel Potentiometer



CSF14

The CSF14 belongs to the patented ACP Pluggable series. The three pins of the potentiometer are fitted into a 1,55 mm thick plastic part with a pitch of 2,5mm, allowing its connection to the suitable RAST2,5 card edge connector.

The external housing contains two washers for direct panel fixation through M4 screws into the customer device. ACP can also study other options for direct panel fixation.

The standard CSF14 has 360° of mechanical angle. However, there are possibilities to provide other different mechanical angles. This series is also interesting when customers want to use their own detent mechanism.

Extended temperature versions covering a range from -40°C to +120°C are available for applications where the working temperature interval exceeds the standard limits of -25°C to +70°C. Ingress Protection rating type is IP54 and plastic materials can be self-extinguishable according to UL 94V0 whenever required.

The ACP pluggable series is an appealing cost saving option as customer can remove both PCB and soldering process. The electrical signal is directly transmitted from the front panel to the electronics using the suitable RAST2,5 connector.

The CSF14 is commonly used as a voltage divider feeding the microcontroller with an accurate voltage level, ensuring non-overlapping between contiguous positions.

Typical applications: function selector or T^a switch in Home Appliances market such as washing machines, tumble dryers, dishwashers, cooking ovens...

CSF14 HOW TO ORDER

EXAMPLE: CSF14RHPL-10KA3030 LV15 S WT-14315-NE VO

Standard features								Extra features								Assembled accessory			
Series	Rotor	Model	Connector	Value	Taper	Tol.	Life	Track	Wiper	Housing	Rotor	Linearity	Plates	Oper.T ^a	Mechan. Angle	Accessory	Ref	Color	Flam.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
CSF14	R	HPL	SI	10K	A	3030	LV15						S			WT	14315	NE	

Standard configuration:

CSF14

Dimensions:	36x16mm
Protection:	IP 54
Core potentiometer:	CS14
Packaging:	Bulk
Wiper position:	at 50% ±15°
Terminals:	Pluggable to RAST 2.5 card edge connector
Marking:	Resistive value marked on external housing. Others on request.

1 - Series

■ CSF14

2 - Rotors

B D* E F* G K M N* P T* X Y* Z* R

* Rotors available for versions with > 15.000 turns.

3 - Model and pitch

HP HPL

4 - Connector

SI SF LI LF

5 - Resistance value

100 Ω	200 Ω	220 Ω	250 Ω	470 Ω	500 Ω	1K Ω	10K Ω (standard)...	5M Ω
100	200	220	250	470	500	1K	10K	5M

6 - Taper

Lin - Linear A

Others under study. Code will be assigned case by case.

7 - Tolerance

100 Ω ≤ Rn ≤ 100KΩ:	100 KΩ < Rn ≤ 1MΩ:	1 MΩ < Rn ≤ 5MΩ:
±30%	±30%	+50%,-30%
3030	3030	5030

8 - Operating Life (Turns)

Standard (15.000 turns) (others on request).	LV15
Long life: LV + number of turns. (please inquire availability)	LVXXX: ex: LV20

9 - Cut Track - Open circuit

CS14 already has an open circuit area at the base of the potentiometer (between 330° and 0°). Additional cut tracks can be studied on request.

10 - Wiper

Wiper position (Standard: 50% ± 15°)	(leave blank)
Others: following clock positions. Ex at 3 hours: P3H	PXH, ex: P3H
Wiper torque (Standard <2.5 Ncm)	(leave blank)

11 - Housing

Color: For colors other than standard: -See color chart below- CJ-color, ex., red: CJ-RO

12 - Rotor

Rotors N, T, Z RSN

All others rotors: (leave blank)

Color: For colors other than standard: -See color chart below- RT-color; ex., blue: RT-AZ

13 - Linearity

Standard	(leave blank)
Independent linearity controlled and below x%. Ex: 3%	LNx%, ex: LN3%
Absolute linearity controlled and below x%. Ex: 2%	LAX%, ex: LA2%

14 - Plates

with plates	S
withOUT plates	N

15 - Operating T^a

-25...+7 C (standard)	(leave blank)
-25...+85°C	T ^a D
-25...+105°C	T ^a B

Others under request. Please check availability.

16 - Mechanical Angle

Standard 360	(leave blank)
Others: AM + degrees (please inquire availability).	AMXXX: ex: AM270

17 - Assembled Accesories (shafts)

Assembled from terminal side	WT
Accessory Reference	-XXXXX Example: 14117
See list of shafts and thumbwheels available	
Color of shaft or thumbwheel	-YY Example, white: BA
Non self-extinguishable.	(leave blank)
Self-extinguishable according to standard UL 94 (-V0 in box 20 modifies only the accessory, please, note.)	-V0

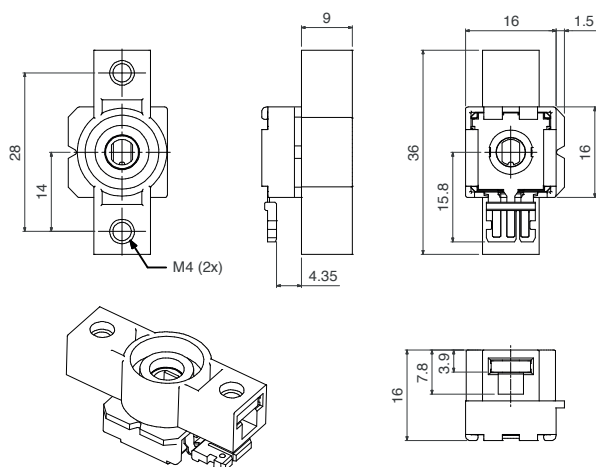
Color chart for rotor, housing and accessories

Black ⁽¹⁾	White	Neutral	Transp.	Red	Green	Yellow	Blue	Grey	Brown
NE	BA	IN	TA	RO	VE	AM	AZ	GS	MR

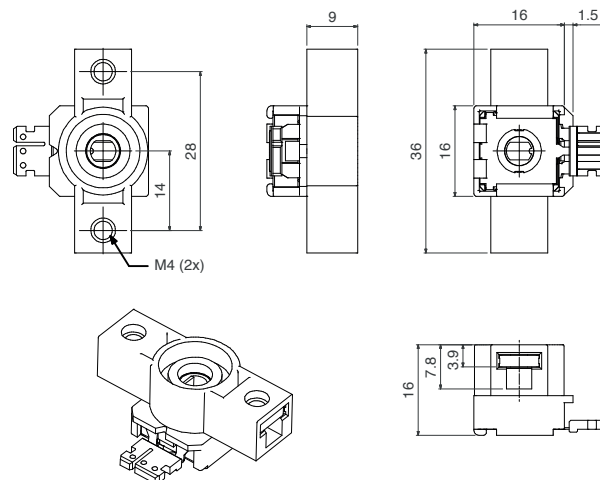
Models

HPL and HP are the standard models. For others, please, inquire

HPL



HP



Tapers

The Standard taper is linear (A). Special tapers can be provided under study.

Connector

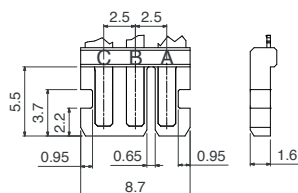
ACP offers the possibility to turn one CSF14 standard into a pluggable version. Thanks to an external RAST 2,5 card edge connector in which terminals are embedded, customer can transmit the output signal from the potentiometer to the electronic module. The three pins of the potentiometer (the collector and the two terminals) are fitted into a 1,55 mm thick plastic part with a pitch of 2,5mm.

Extended temperature versions covering a range from -40°C to +120°C are available for applications where the working temperature interval exceeds the standard limits of -25°C to +70°C. The self-extinguishable version of the plastic parts, V0, can be supplied under request.

A typical application would be as feedback position sensor of the cooking style selector for kitchen ovens. ACP is able to supply different kind of connectors:

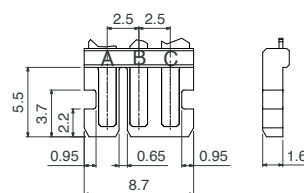
SI

SHORT latching shape and groove at INITIAL terminal side.



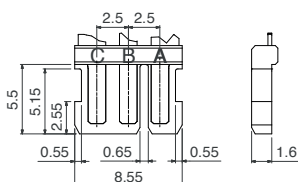
SF*

SHORT latching shape and groove at FINAL terminal side.



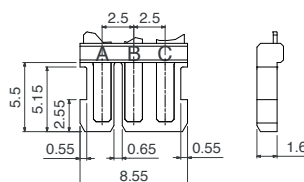
LI*

LONG latching shape and groove at INITIAL terminal side.



LF*

LONG latching shape and groove at FINAL terminal side.



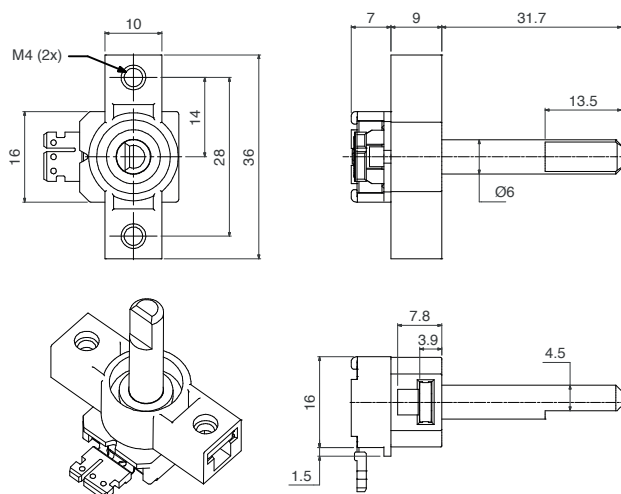
*Please, inquiry.

Shafts

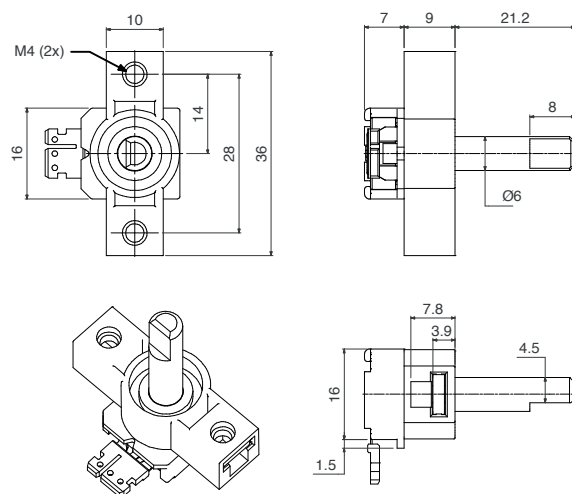
Shafts are available in different colors (color chart in “how to order” section) and with self-extinguishable property, according to UL 94 V-0, under request. ACP can study special shaft designs.

Shafts can be sold separately or already mounted on the potentiometer.

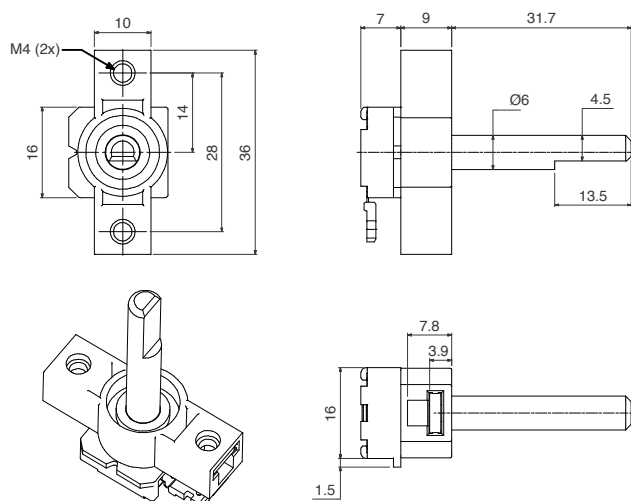
HP... WT-14301



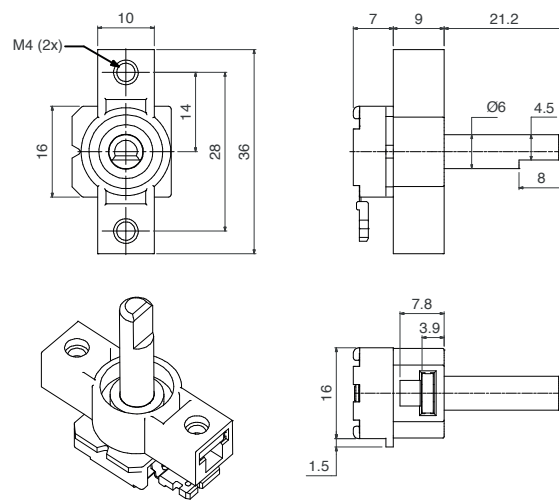
HP... WT-14315



HPL... WT-14301

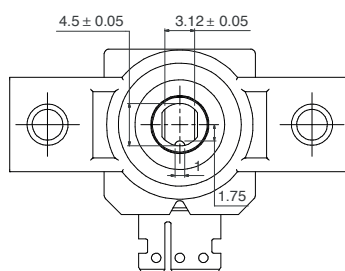


HPL... WT-14315



Rotor inner dimensions

This drawing shows the rotor at 50% position in order to better depict the dimensions and tolerances.



Packaging

Bulk packaging:

Pieces per box (250 x 150 x 70)

CSF14 model
without shaft

90

Electric Specifications

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

CSF14

Range of resistance values* Lin (A)	Standard: 10KΩ Others: $1K\Omega \leq R_n \leq 5M\Omega$, on request
Tolerance*	±30%
Variation laws	Lin (A). Other tapers available on request
CRV - Contact Resistance Variation (dynamic)	Lin (A) Electrical Angle $330^\circ \pm 20^\circ \leq 3\%R_n$. Other tapers, please inquire
CRV - Contact Resistance Variation (static)	Lin (A) Electrical Angle $330^\circ \pm 20^\circ \leq 5\%R_n$. Other tapers, please inquire
Maximum power dissipation** Lin (A)	at 50°C, 0.15W
Maximum voltage Lin (A)	250VDC
Operating temperature	standard: -25°C ... +70°C T [°] D: -25°C ... +85°C T [°] B: -25°C ... +105°C (+120°C, on request)
Temperature coefficient $1K \leq R_n \leq 10K\Omega$ $10K\Omega < R_n \leq 5M\Omega$	+200/-300 ppm +200/-500 ppm

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

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

Mechanical Specifications

CSF14

Resistive element	Carbon technology
Angle of rotation (mechanical)	360°
Angle of rotation (electrical)	$330^\circ \pm 20^\circ$
Wiper standard delivery position	$50\% \pm 15^\circ$
Max. push/pull on rotor	35 N / 50 N
Wiper torque*	For 15.000 turns <2.5 Ncm For >15.000 turns <1.5 Ncm
Mechanical life	Standard is 15.000 turns. Long life: Up to 250.000 turns

* 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.

CSF14

	Test conditions	Typical variation of R _n
Damp heat	500 h. at 40°C and 95% RH	±20%
Temperature Coefficient	16 h at 85°C, plus 2 h at -25°C	±20%
Load life	1.000 h. at 50°C	±20%
Mechanical life	15.000 turns at 10 c.p.m. and at 23°C ± 2°C	±20%
Storage (3 years)	3 years at 23°C ± 2°C	±3%