

ACP Pluggable Potentiometers



Technical information



Aragonesa de Componentes Pasivos

CONTENT

Introduction	2
How to order	3
Possibilities of connection	4
Technical information: Table	4
Technical information: Drawings	5
Electrical Curves	7

INTRODUCTION

ACP introduces the PLUGGABLE to RAST 2,5 card edge connector series. All available models share the same concept: the three pins of the endless-turn potentiometer are embedded in a plastic housing allowing its connection to the suitable card edge connector.

PLUGGABLE series are also capable of fixing themselves directly to the front panel through M4 screws or Nut&Washer (MCS14 HP) contained into its external housing.

Thanks to this concept, the output signal can be transmitted from the potentiometer to the customer electronics just using the suitable connector. In this way, you will save important costs such as the removal of the soldering process and the need for a PCB suited for a card edge connection.

Tight absolute linearity, softer/stronger mechanical detents, high-temperature fitting (up to 120°C), etc... are available options under request. Pluggable series can be customized to meet specific customer requirements.

APPLICATIONS

Cooking ovens as feedback position sensor, cooking style selector, or temperature/time setting dial. Switch selector for washing machines, dishwashers, tumble dryers...

HOW TO ORDER

Example: CS14NHP SI-10KA3030 LV15 RSN LN3% T^BB
 CSF14RHP SI-10KA3030 LV15 RSN LA4% S T^BB WT-14015-NE-V0
 QC16RHPL SI-10KA3030 LV10 16DT 5N S LA3% T^BB PDT1 WT-14315-NE-V0

Standard features

1	2	3	4	5	6	7	8	9
Series	Rotor ¹	Model	Connector.	Value ²	Taper	Tolerance	Life	Detents
CS14	B, D*, E, F*, G, K, M, N*, P, T*, X, Y*, Z*	HP					Std: LV15 Others: LVXX	No detents: Blank Other detents: XXDT
MCS14	N, Z							
CSF14	B, D*, E, F*, G, K, M, N*, P, T*, X, Y*, Z*, R	HPL HP	SI, SF LI, LF	Std: 10K Others: 1K ≤ Rn ≤ 5M on request	Linear: A Others: Special code	1K ≤ Rn ≤ 5M: ±30%	Std: LV10 Others: LVXX	No detents: Blank
QC16	R							Up to 16 detents:XXDT
QCJ16								No detents: Blank

Extra features

Assembled accessory

10	11	12	13	14	15	16	17	18			
Wiper	Rotor	Torque	Linearity	Plates	Oper. T ^a	Detent Position	Mechanical Angle	Accessy ³	Ref #	Color	Flam.
CS14	Position Central: Blank	N, T, Z: RSN					PDTXX				
MCS14	Initial: PI Final: PF										
CSF14			Indep. X%: LNx%		-25...+85°C: T ^B D			WT	Accessory reference	Others, pls. check availability	-V0 (Optional)
QC16			Absolute X%: LAX%	With plates: S Without plates: N	-25...+105°C: T ^B B		PDTXX		Std 360°: Blank Other: AMXXX	Color- HT (optional)	
QCJ16			Std: 3N, 5N Other on request								

¹ Rotor drawings, ² Standard ohmic values, ³ Accessory drawings : please refer to the General Catalogue at www.acpttechnologies.com

Color chart, for rotor, housing and accessories HT

Grey	Neutral	Red	Blue
GS	IN	RO	AZ

Color chart, for accessories (NO HT)

Black	White	Red
NE	BA	RO

Note: Rotor and Housing are according to UL 94V0.
 HT accessories are recommended, V0 versions under request.
 *Rotors available for more than 50.000 turns

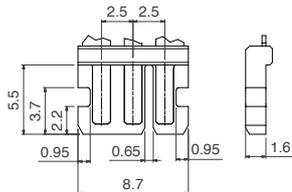
Possibilities of connection

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.

ACP is able to supply different kind of connectors:

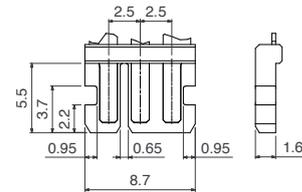
SI

SHORT latching shape and groove at INITIAL terminal side.



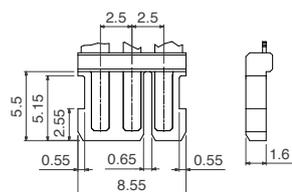
SF

SHORT latching shape and groove at FINAL terminal side.



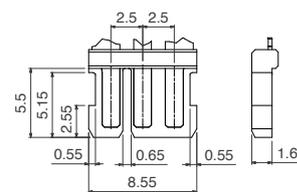
LI

LONG latching shape and groove at INITIAL terminal side.



LF

LONG latching shape and groove at FINAL terminal side.



Technical information table

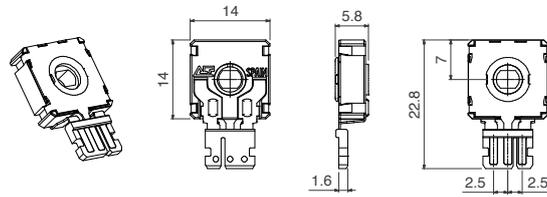
		CS14	MCS14	CSF14	QC16	QCJ16
Range of resistance value*	Lin (A)	Std: 10K Others: 1KΩ ≤ Rn ≤ 5MΩ, on request				
Tolerance*	1KΩ ≤ Rn ≤ 5MΩ	±30%				
Variation laws		Lin (A). Other tapers available on request				
CRV - Contact Resistance Variation (dynamic)		≤ 3% Rn				
CRV - Contact Resistance Variation (static)		≤ 5% Rn				
Maximum power dissipation	Lin (A)	at 50°C 0.15W				
Maximum voltage	Lin (A)	250VDC				
Operating temperature*		T° Std: -25°C...+70°C T° D: -25°C...+ 85°C T° B: -25°C...+105°C (+125°C, on request)				
Temperature coefficient	100Ω ≤ Rn ≤ 10KΩ 10KΩ < Rn ≤ 5MΩ	+200/ -300 ppm ±200 ppm				
Resistive element		Carbon technology				
Angle of rotation (mechanical)		360°				± 45° ± 5°
Angle of rotation (electrical)		330° ± 20°				245° ± 20°
Wiper standard delivery position		50% ± 15°			PDT1	50% ± 5°
Max. stop torque		-				
Max. push/pull on rotor		35N / 50N		50 N		
Wiper torque*		LV15: < 2,5 Ncm > LV15: > 1,5Ncm			-	0,5-3,5Ncm
Wiper torque with detents*		<3,5 Ncm		-	3 Ncm, 5 Ncm Others on request	-
Mechanical life		15.000 turns Long Life: Up to 250.000turns			10.000 turns Others, on request	
Detent Option (For value discrimination)-non overlapping		Up to 16	Up to 16	-	Up to 16	n.a

*Other (tapers, resistance value, operating temperature, wiper torque and mechanical life) please inquire.

Rotors can be chosen according to customer specifications; the rotors shown here are examples, please refer to the General Catalogue at www.acptechologies.com

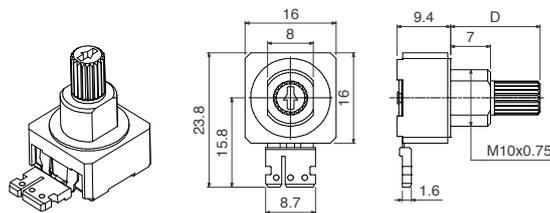
CS14

HP



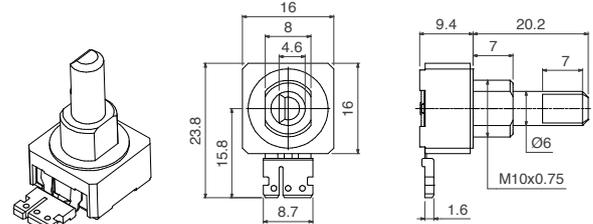
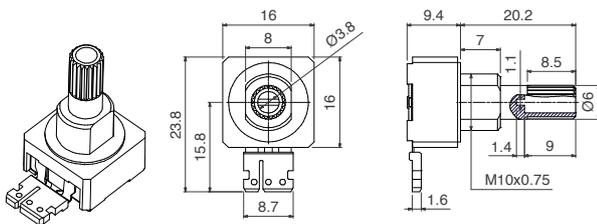
MCS14

HP



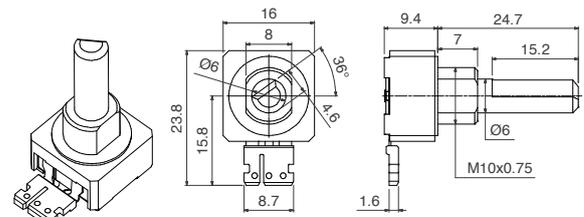
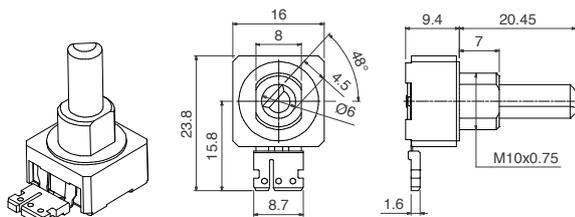
HP... WT-14008

HP... WT-14015



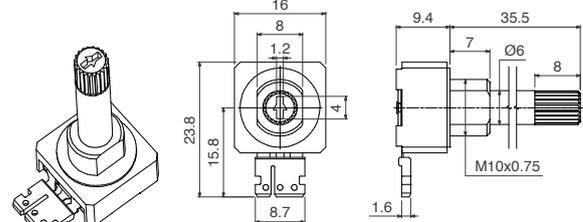
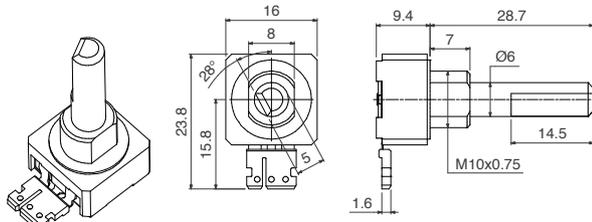
HP... WT-14066

HP... WT-14067



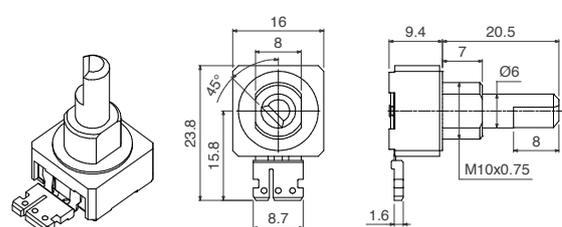
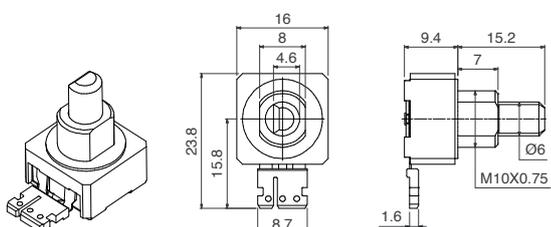
HP... WT-14072

HP... WT-14073

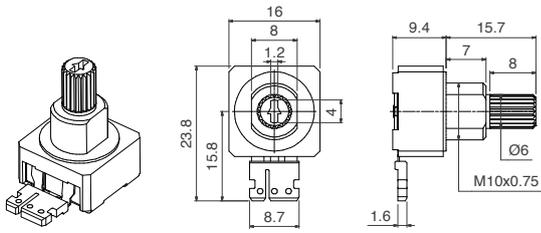


HP... WT-14081

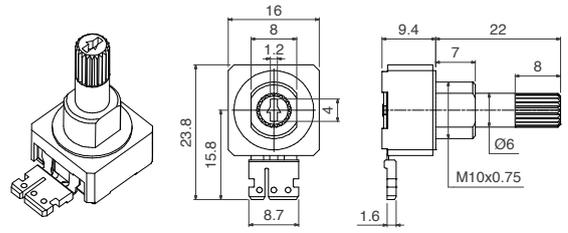
HP... WT-14084



HP... WT-14187

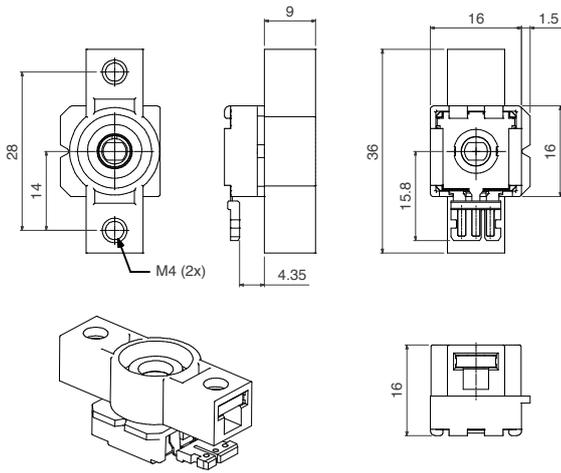


HP... WT-14250

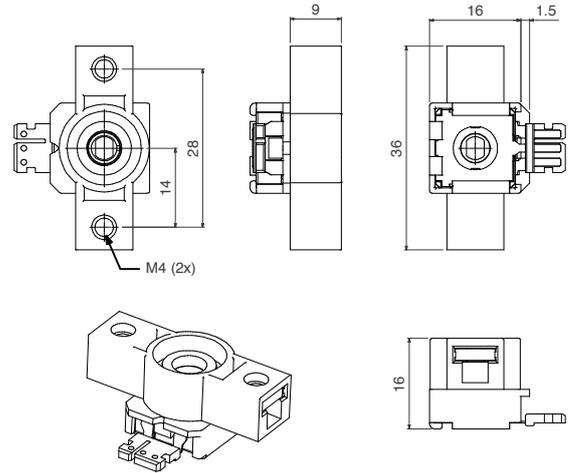


CSF14 / QC16 / QCJ16

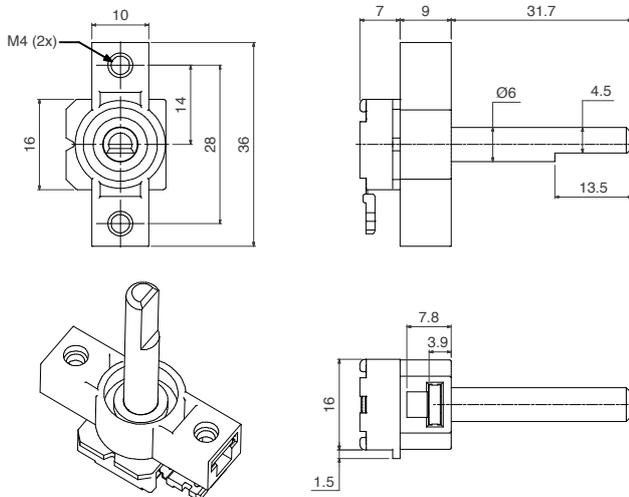
HPL



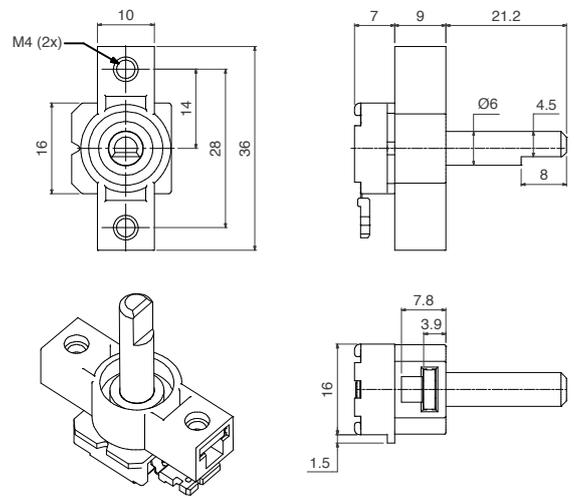
HP



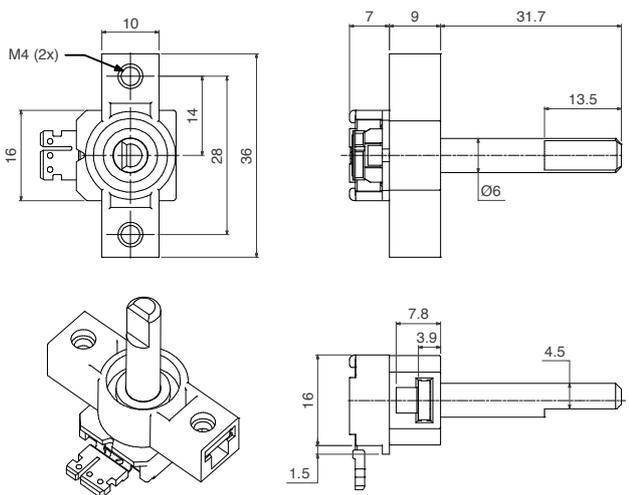
HPL... WT-14301



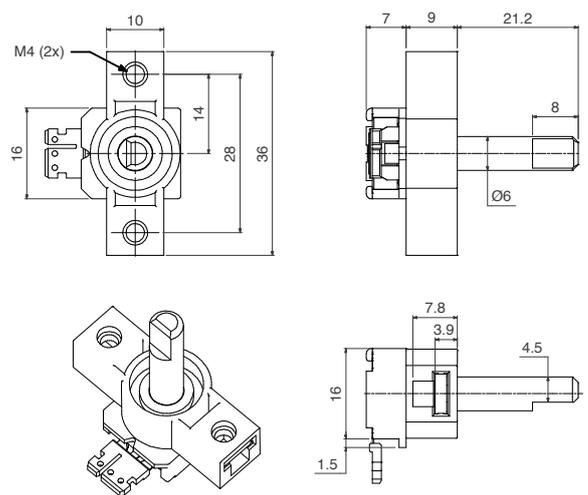
HPL... WT-14315



HP... WT-14301

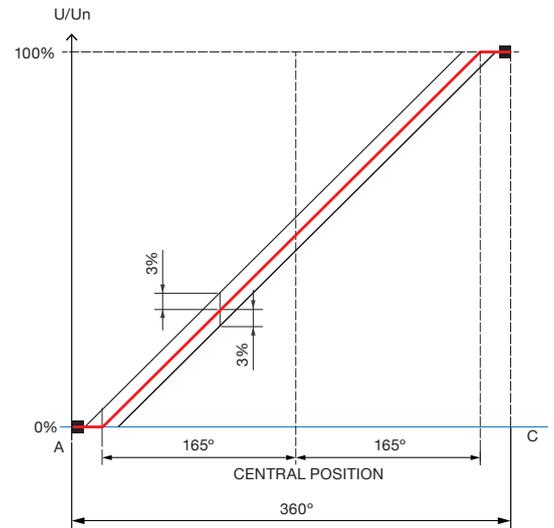
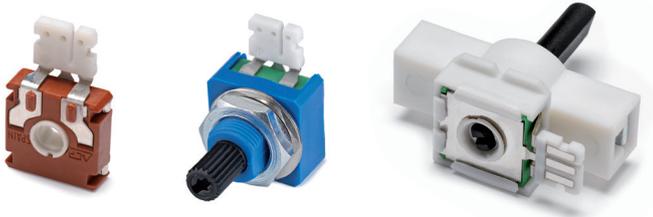


HP... WT-14315



CS14 HP / MCS14 HP / CSF14 HP

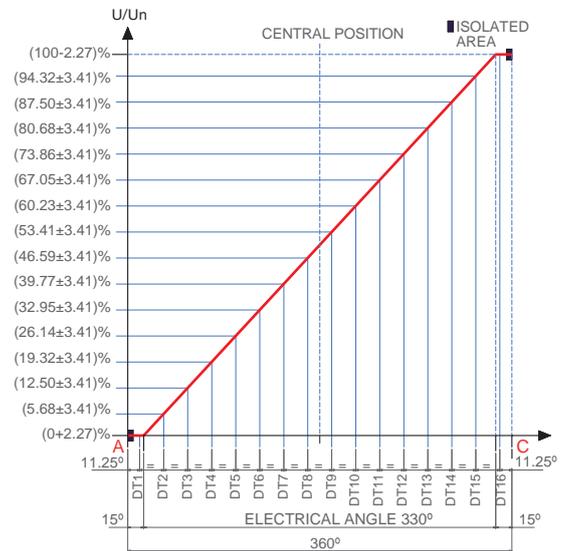
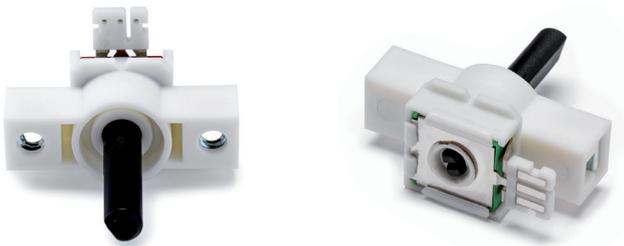
Tight Linearity. Up to LA2%.
 Non-overlapping
 Panel fixation:
 - MCS14: Nut&Washer
 - CSF14: M4 Screws
 Control Potentiometer Feedback
 Feedback Position Sensor



Electrical Taper Example: CS14 HP & MCS14 HP

QC16 HP/ HPL

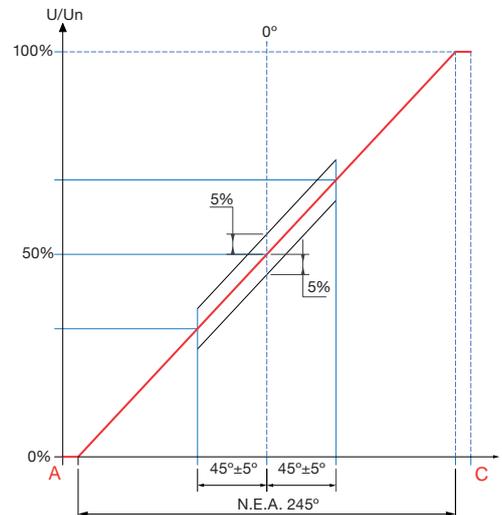
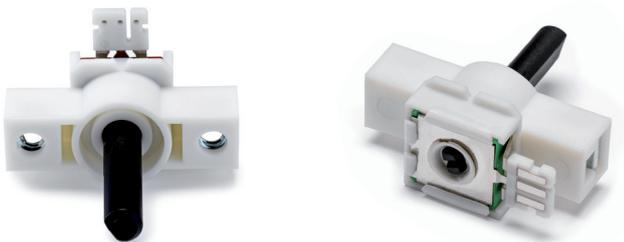
Mechanical Detents
 Non-overlapping
 Panel fixation - M4 Screws
 Selector Function Switch



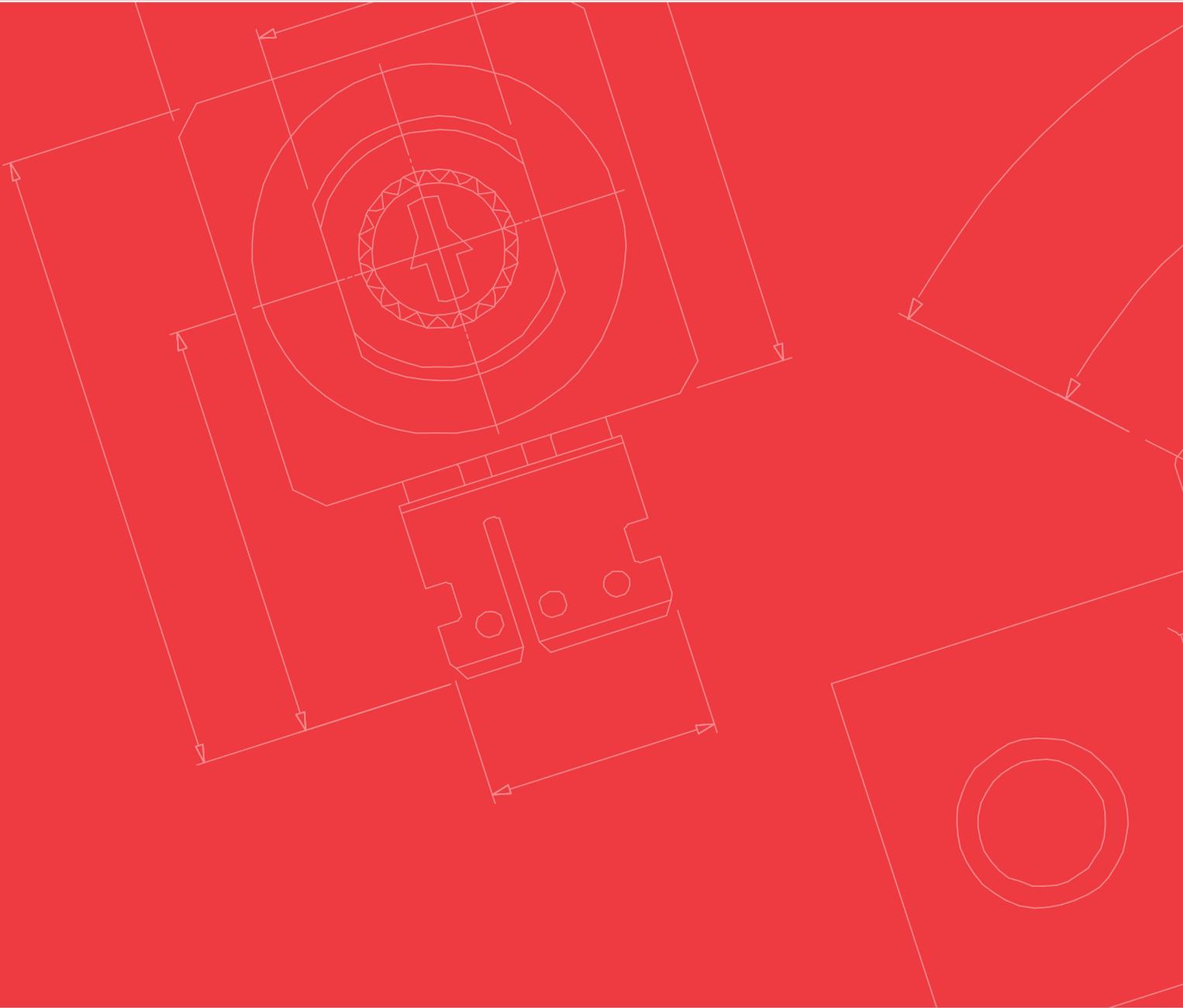
Electrical Taper Example: CSF14 HPL / HP

QCJ16

Tight Linearity.
 Spring Loaded Effect. Return to Zero
 Panel fixation - M4 Screws
 Control potentiometer



Electrical Taper Example: QC16 HP / HPL



Aragonesa de Componentes Pasivos, S.A.

Polígono industrial, s/n
P.O. Box 43 (Apartado de correos 43)
E-50500 Tarazona - Zaragoza - Spain
Tel.: (+34) 976 643 063
(+34) 976 199 101
Fax.: (+34) 976 643 464
www.acptechnologies.com

February 2023



Company certified by IQNet (Aenor) under:
ISO 9001
IATF 16949