



Introduction

Overseventy million yearly produced pots and trimmers makes **Iskra EMS** one of the most important European producers. For nearly forty years **Iskra EMS** has been manufacturing and supplying quality products at competitive prices to industry, worldwide. In all those years **Iskra EMS** has accumulated a vast experience in the pots and trimmers production through constant research, development and automatization.

CAD engineering, precision tools and dies capabilities, automatic assembly, computer based quality control and quick customer service are all vital in-house resources which constitute **Iskra EMS** capabilities. Our engineering team is available to support your product development group at any stage of development cycle.

Pots & Trimmers Product Line

This catalogue presents the pots and trimmers product line of the **Iskra EMS** potentiometers. The production program covers paper laminate (pentinax) base and ceramic base pots and trimmers. They are designed for classical printed circuit board assemblies or for SMT. Fixation is via soldering terminals, nut or screw. Functional options provide resistance ranges, temperature coefficients of resistance, electrical, physical and environmental characteristic that will meet virtually every demand, coupled with a wide variation of coloured spindles and thumbweels.

Automatic test equipment ensures 100% verification of all main parameters during production.

CARBON POTENTIOMETERS	
SERIES	TYPE
PNZ	Pre - Set, Enclosed
PN	Pre - Set, Open
P	Rotary
PP	Sliding

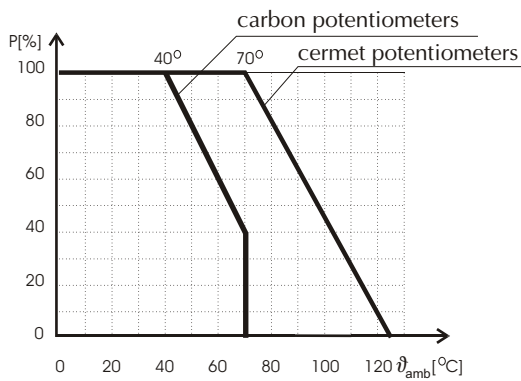
CERMET POTENTIOMETERS	
SERIES	TYPE
PNCZ	Pre - Set, Enclosed
PNC	Pre - Set, Open
PC	Rotary

Quality System

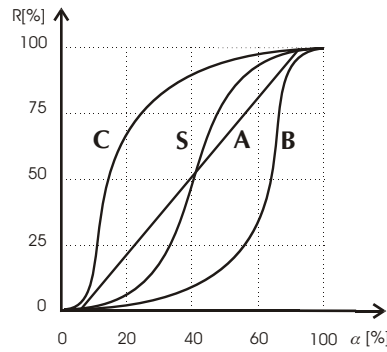
Quality Management System demands Total Quality Management, which is management's approach to organization, centered on quality, based on the participation of all its members and aiming at long term success through customer satisfaction and benefits to the members of the organization and to the society.



LOAD CURVE



RESISTANCE TAPES



Taper IEC

A - Linear (lin)

B - Rising exponential (log+)

C - Dropping exponential (log-)

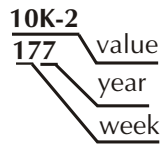
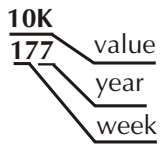
S - Special

MARKING

Numerical marking of resistance and date of production on all potentiometers.

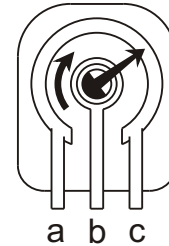
1. Example: **10K lin**

2. Example: **10K log**

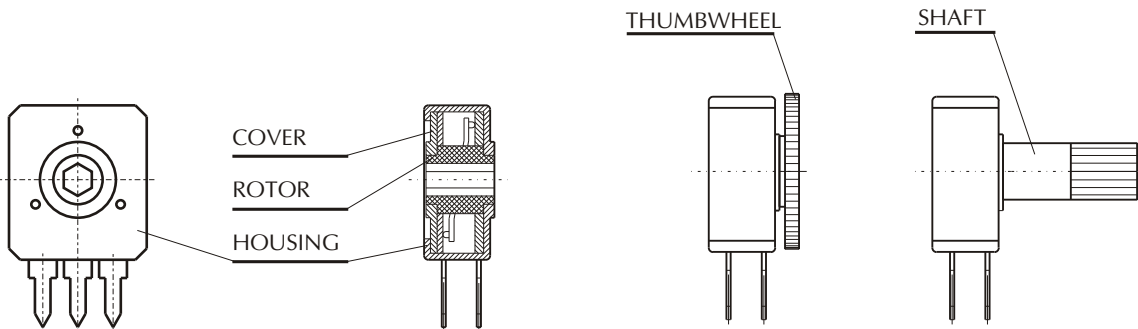


MARKING OF TERMINALS FOR SPINDLE OPERATED POTENTIOMETERS

TAPER	MARKING
(A) LIN	-
(B) LOG +	2
(C) LOG -	3
(S) SPECIAL	4
LIN Tol. ±10%	5
LOG + Tol. ±10%	6
LOG - Tol. ±10%	7



Potentiometer Components / General





Test	Test procedure (guideline IEC 393-1)	Results: $\frac{Rac}{Rac}$		DIN 41450
		Type of potentiometer		Requirements
		Carbon	Cermet	$\frac{Rac}{Rac}$
Resistance to soldering heat	a) 24 hours at ambient temperature, then measurement of Rac. b) Potentiometer is placed on 1.5 mm thick board. Potentiometer's terminals are dipped into solder bath: Sn/Pb bath (60/40) by 260°C for 5 s and 2 - 3 mm depth in solder bath. c) After 24 hours at ambient temperature measurement of Rac.	± 2%	± 2%	± 2%
Solderability	a) Potentiometer's terminals are dipped into solder flux. b) Potentiometer's terminals are dipped into solder bath: Sn/Pb bath (60/40) by 260 °C for 5 s and 2 - 3 mm depth in solder bath.	95% (terminal's area covered with solder)		
Temperature coefficient	a) 24 hours at ambient temperature, then measurement of Rac. b) Carbon: 30 min at -25 °C, then 30 min at ambient temperature, then 30 min at 70 °C. c) Cermet: 30 min at -55 °C, then 30 min at ambient temperature, then 30 min at 125 °C. d) After 16 hours at ambient temperature measurement of Rac.	100kΩ ±500ppm/°C 100kΩ ≤ 1MΩ ±1000ppm/°C	100kΩ ±200ppm/°C 100kΩ ≤ 2MΩ ±200 - 1000ppm/°C	100Ω - 25kΩ ±1000ppm/°C 25kΩ ≤ 5MΩ ±300 - 1000ppm/°C
Climatic sequence, 5 cycles	a) 24 hours at ambient temperature, then measurement of Rac. b) Carbon: 1 cycle consist of:(30 min at -25 °C, 5 min at ambient temperature, 30 min at 70 °C, 5 min at ambient temperature) c) Cermet: 1 cycle consist of:(30 min at -55 °C, 5 min at ambient temperature, 30 min at 125 °C, 5 min at ambient temperature) d) After 24 hours at ambient temperature measurement of Rac.	±5%	±5%	±5%
Damp heat, steady state, with or without load between terminals "a" and "c"	a) 24 hours at ambient temperature, then measurement of Rac. b) Carbon: 21 days at 93% relative humidity and temperature of 40 °C. c) Cermet: 56 days at 93% relative humidity and temperature of 40 °C. d) After 24 hours at ambient temperature measurement of Rac.	±10%	±10%	±15%
Mechanical endurance	a) 24 hours at ambient temperature, then measurement of Rac. b) Lead screw types: 200 cycles, 5 to 10 cycles per minute. c) Rotary types: 10000 cycles, 5 to 10 cycles per minute. d) Measurement of Rac.	100Ω ±3% 100kΩ ±10%	100Ω ±2% 100kΩ ±5%	100Ω-100kΩ ±5% 100kΩ-5MΩ ±10%
Electrical endurance	a) 24 hours at ambient temperature, then measurement of Rac. b) Carbon: 1000 hours at 70 °C, loaded between terminals "a" and "c". c) Cermet: 1000 hours at 85 °C, loaded between terminals "a" and "c". d) After 24 hours at ambient temperature measurement of Rac.	±10%	±10%	±10%
Component solvent resistance	a) 24 hours at ambient temperature, then measurement of Rac. b) Potentiometer 10 min drown in solvent: - Isopropylalcohol - Triclorethylen c) After 24 hours measurement of Rac. d) Potentiometer 60 s in steam (solvent): - Isopropylalcohol - Triclorethylen e) After 24 hours measurement of Rac.	±10% ±20%	±2% ±2%	
		±30% ±30%	±2% ±2%	

Remark: *) ambient temperature: 25 °C ±3 °C at relative humidity of 40 - 80 %.