Multifunction Process Calibrator

C405

C405 Process Calibrator / Meter

- Economical Laboratory Precision Hand Held Process Calibrator with PC software
- Simulate and measure of TC sensors
- Simulate and measure of RTD sensors & R
- Source and measure of U, I
- Simultaneous source and meter
- Interface RS232C and PC software
- Supply from network and accumulator

The C405 Process Calibrator is:

- TC simulator of R, S, B, J, T, E, K sensors acc. EN 60584-1 programmable in temperature units,
- RTD simulator of Pt100 (385), Pt100 (391), Pt500, Pt1000, Cu100 and Ni100 sensors acc. EN 60751,
- temperature meter with TC and RTD sensors,
- voltages source and meter in ranges 0-50mV-0,5V-2V-12V(25V),
- direct currents source and meter in range 0-22mA,
- resistance simulator and meter in ranges 0-400Ω-4000Ω,
- temperature meter in range 0...+60°C with its own sensor, frequency meter and real time clock.

The C405 Calibrator simulate EMF voltages of thermocouples with set values of cold junction temperature from 0...+50°C range or with automatic compensation from t_o=0...+60°C range (traditionally with apply compensating leads or with its own sensor).

C405 is designed for testing measurement apparatus and automatic industrial systems working with standard voltage and current signals and with thermocouples and thermometric sensors. The meter's and source's functions are simultaneous and independent with galvanic insulation between measuring and generation circuit, what allows for test full systems by means of single C405.

The C405 Calibrator is programmed from front panel keyboard and *Calpro 405* PC software via RS232C interface. The test results can be saved in internal electronic memory with possibility to read-out on computer or can be printed on miniature printer. The calibrator has programmable functions: fluently increase or decrease of output signal, single or multi jump with different speeds, programmable ramp and step change in the time.

Calibrator is supplied with external network power supply or can be powered from internal accumulator.

TECHNICAL PARAMETERS OF C405 CALIBRATOR

Symbol of range	Range	Resolution	Basic error	Load capacity *)
Simulate of TC and RTD sensors. Temperature measure with TC and RTD sensors				
R (PtRh13-Pt)	-50,0...+1768,0°C	0,1°C	0,03%±1,2°C	simulate R_{OUT}<10mΩ I_{OUT}=0...25mA measure R_{IN}>100kΩ
S (PtRh10-Pt)	-50,0...+1769,0°C			
B (PtRh30-PtRh6)	+400,0...+1820,0°C			
J (Fe-CuNi)	-210,0...+950,0°C		0,03%±0,4°C	
T (Cu-CuNi)	-200,0...+400,0°C			
E (NiCr-CuNi)	-50,0...+700,0°C			
K (NiCr-NiAl)	-250,0...+1370,0°C			
Pt100 (385)	-200,00...+850,00°C	0,01°C	0,03%+0,3°C	simulate Pt100, Cu100, Ni100 I_M=0,12...3mA Pt500, Pt1000 I_M=0,06...0,5mA measure I_M=0,12mA
Pt100 (391)	-200,00...+850,00°C			
Pt500	-200,0...+850,0°C	0,1°C	0,03%+0,5°C	
Pt1000	-200,0...+850,0°C			
Cu100	-60,0...+180,0°C		0,03%+0,3°C	
Ni100	-60,0...+180,0°C			
Source and measure of DC voltage				
50mV	-50,000...+50,000mV	1μV	0,03%±6digits	source I_{OUT}=0...25mA R_{OUT}<10mΩ; measure R_{IN}>100kΩ
500mV	-500,00...+500,00mV	10μV	0,03%±4digits	
2V	-2,0000...+2,0000V	100μV		
12V generation	-12,000...+12,000V	1mV		
25V measurement	-25,000...+25,000V	1mV		
Source and measure of DC current				
22mA	-22,000...+22,000mA	1μA	0,03%±4digits	source U_{OUT}=0...10V; measurement R_{IN}=25Ω
Simulate and measure of resistance				
400Ω	0...400,00Ω	0,01Ω	0,02%±0,12Ω	simulate 400Ω I_M=0,12...3mA simulate 4000Ω I_M=0,06...0,5mA measure I_M=0,12mA
4000Ω	0...4000,0Ω	0,1Ω	0,02%±1,2Ω	
Source of auxiliary voltage +24V				
24V	24±10%	–	–	20mA
Measure of frequency				
f	3,000...25,000Hz	0,001Hz	0,01Hz	10mV...20mV
Measure of temperature with own temperature sensor				
T_{ex}	0°C...+60°C	0,1°C	0,8°C	–

*) R_{OUT}– output resistance; R_{IN} – input resistance; I_{OUT} – output current; U_{OUT} – output voltage; I_M – measuring current

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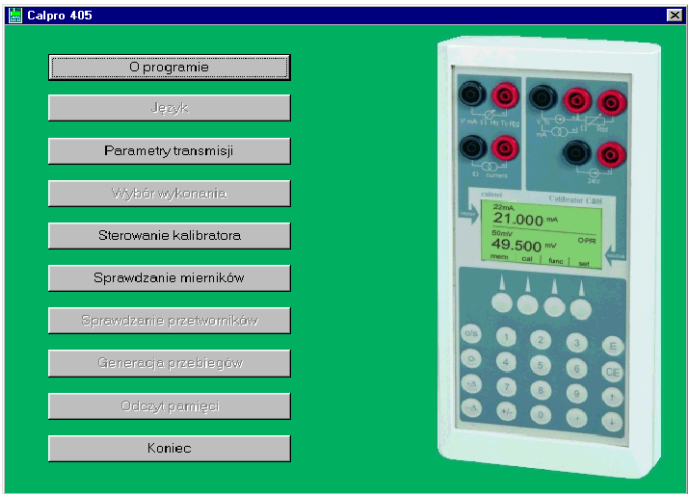
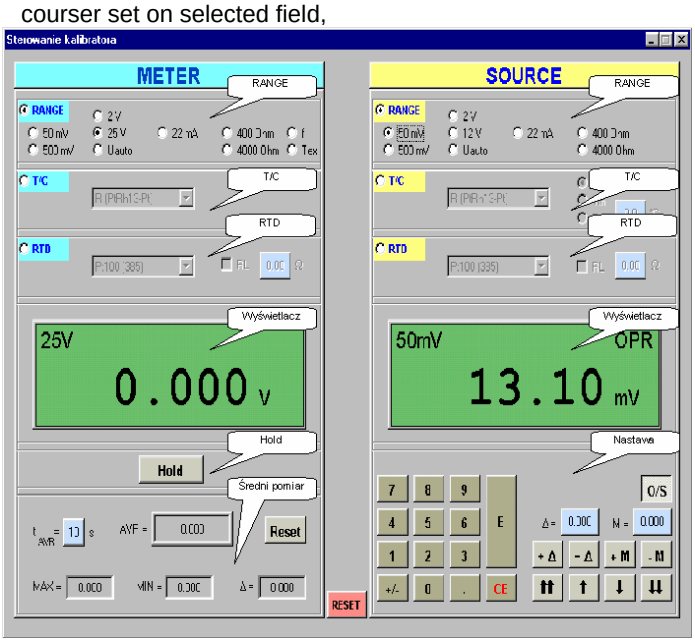
PROGRAM CALPRO 405

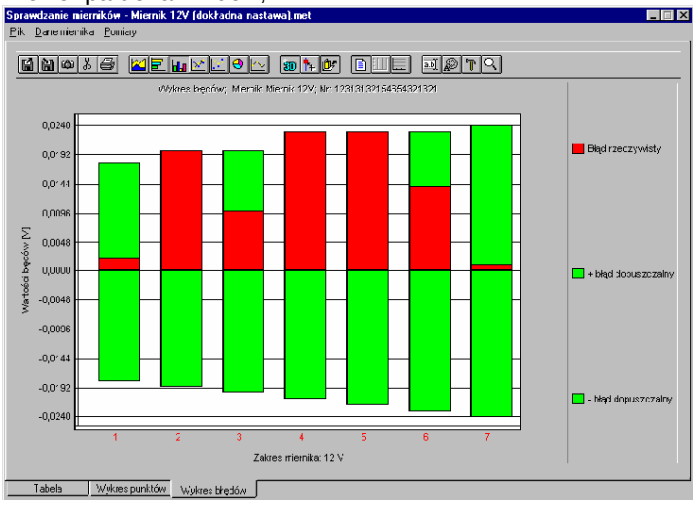
The *Calpro 405* computer software is designed for support calibration and testing various measuring instruments witch works with standard DC voltage and current signals and with TC and RTD temperature sensors and with used the C405 Calibrator.



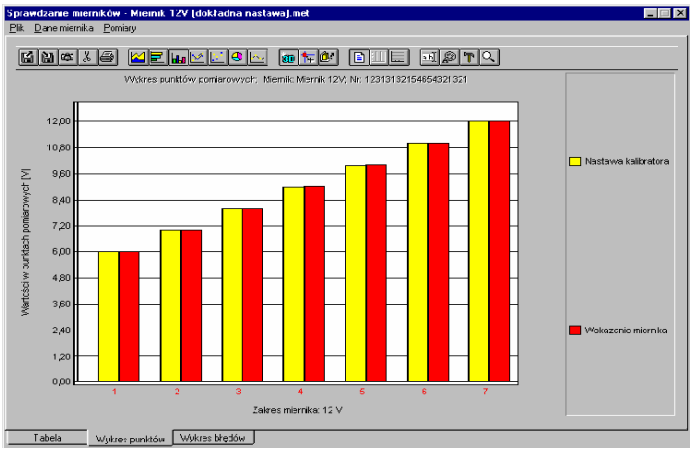
- function *Control board* make possible to control functions of the C405 calibrator / meter in similar way to real control board, by pressing keys using left key of a mouse after courser set on selected field,



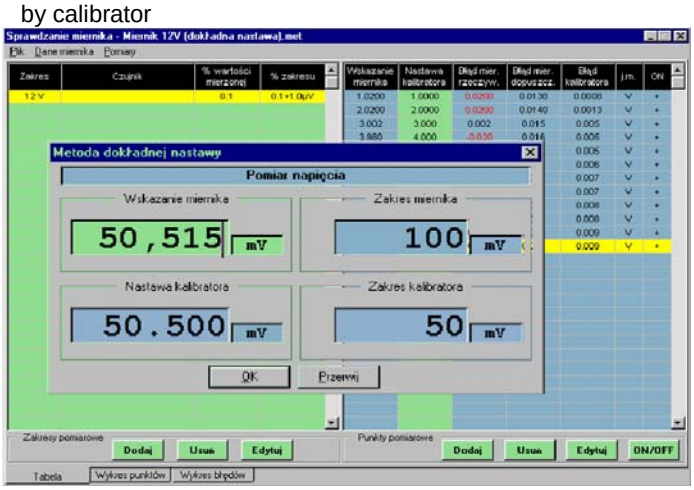
- function *Checking of meter* with errors diagram allows for graphical presentation of measurements results in form of table or diagram selected by one from three tabs located in lower part of a window,



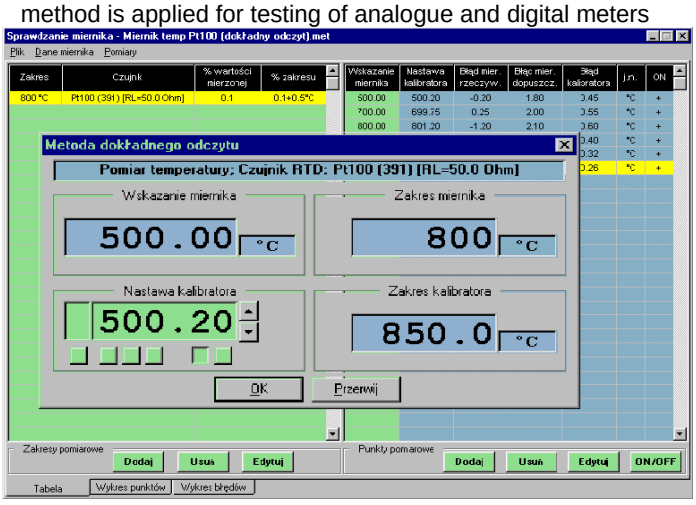
- function *Checking of meter* with measurement points diagram



- function *Checking of meter* with measurement results in table form. *Accurate setting method* make possible faster testing of instruments with digital read-out in defined points by calibrator



- function *Checking of meter* with testing results in table form. *Accurate reading method* make possible testing of instruments in defined points indicated on device – this method is applied for testing of analogue and digital meters



- function *Export of data to Excel* make possible export of data from actual range or from all measurement ranges. Each range will be located in a new created sheet