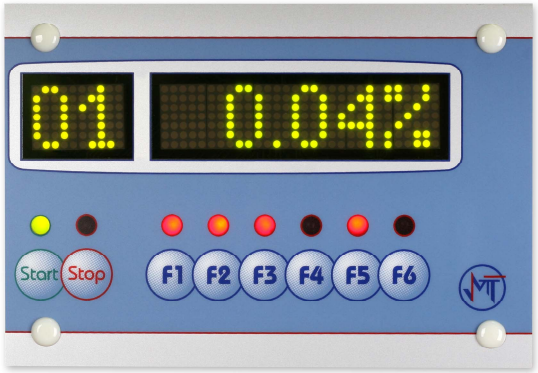
IPO Individual Stand Controller

ISO 9001:2008



Features:

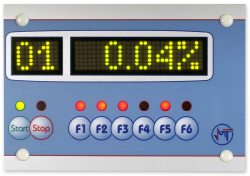
- Legible presentation of the results
- Information on the test current status
- Control of the power source settings from a local keyboard
- Control of the operation mode and the sensitivity of the photoelectric scanning head
- Universal serial communication port
- Control of the auxiliary equipment, e.g. the current transformer
- High input frequency of the reference pulses ⇒ short test time

The IPO Individual Stand Controller is one of the most important components of the system. Its primary tasks are: performing tests, transferring the to the host computer and displaying results. Equipped with the local keyboard it enables remote control of the power source and the auxiliary equipment. An additional function is communication with meter under test by means of serial port (IEC1107, RS232, RS485 or other).

- **Test performance** – it is a basic function of the controller. The controller performs the tests independently. Before performing them, it receives data related to the test parameters and the information which inputs/outputs of the meter are to be used. The tests results are presented on the local display and also transferred to the host computer. During the calibration and for possible intervention inside the meter, the test may be withheld (the voltage to the meter is cut off) and/or reset/resumed and/or repeated using the controller keyboard.
- **Operation mode control –** the choice (electromechanical or static) is executed automatically, and the sensitivity of the photo-head may be adjusted with the local keyboard.
- **The power source remote control** – is a very useful function during the meters calibration. It enables remote switching of the load character, directly form the controller keyboard. There is no need for continual approaching the host computer to change the load parameters. The load type can be switched from balanced to single phase and vice verse and the power factor from PF=1 to PF=0.5 and vice verse.
- **Auxiliary equipment control** – The controller is equipped with 2 system links. One of them is used for controlling the voltage relays , and the other one enables further extension of the system, e.g. with a current or voltage separating transformer. The transformer becomes then an integral part of the system. It is switched on and off automatically, and in case of incorrect work, a suitable message appears on the controller display and on the host computer screen.
- **Communication with meters under test** – The controller is equipped with a universal serial port. Depending on an applied adapter, it can be the IEC1107 optical port, RS232, RS485, CS or other. Thank to this port, the tests can run fully automatically, e.g. while checking the registers, the initial and final register readouts may be obtained from the tested meter automatically, without engagement from the operator.
- **Pulse inputs/outputs** – The controller has the possibility of operating simultaneously a number of impulse outputs of the meter under test and controlling its inputs (e.g. t_m/t_e).

Technical specification

The IPO Individual Stand Controller is manufactured in modern technology utilizing programmable gate arrays FPGA (IPO-E). As the central unit, an up-to-date-technology microprocessor is used allowing for remote software replacement (In – Application Programming – IAP). Thank to this solution, any configuration of the terminal inputs/outputs, high input frequency of the reference pulses and a future extension of the controller functionality, depending on new requirements, are possible. The display is made with clearly visible and legible LED matrixes. During the tests, the status of the test is displayed, and in the time-dependent tests, the time remaining to the end of the test is shown.



General features	IPO-E	IPO-S
Display	35-dot matrix LED display (or LCD)	7-segment LED display
Display height	14.2 mm	
Number of characters	6	
Display resolution	X.X%, X.XX% or X.XXX% (user programmable with the system software)	
Keyboard	8 keys: RESET/START, STOP and 6 function keys whose allocation changes depending on the test being performed	3 keys: RESET/START, STOP and one function key whose allocation changes depending on the test being performed
Photoelectric scanning head input	1 (optionally 2)	1
Input for reference pulses Maximum frequency	1 300 (optionally 600) kHz	1 100 kHz
Universal inputs / outputs		
S0 general purpose inputs (potential linked, open collector or potential free contact are acceptable; maximum input voltage 27V) **	2 (optionally 8)	2
Fast pulse input (BNC connector) (potential linked, open collector or potential free contact are acceptable; maximum input voltage 27 V) **	1*	None
Isolated S0 outputs (maximum rate: 50V, 50mA)	up to 2*	
Potential linked outputs (24V, 50mA electronic safeguard)	up to 2*	
Communication with meter under test		
Serial interface	1*	
Interface type	Optical according to IEC1107 (RS232, RS458, RS422, CS can be handled with an appropriate adapter)	
Protocol	According to IEC1107 (other protocols on demand)	
Interface		
Communication with the PC	RS422	
Voltage on/off control relay	yes	
Communication with Current Separating Transformer	yes	

*) default is none, other number to be stated with an order

**) other input types can be handled with an appropriate ADA adapter. For example 'current loop' input requires ADA-1 adapter

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