

TAPCON® 230

Voltage Regulator
for Regulating Transformers

www.reinhausen.com





TAPCON® – Voltage regulators of the next generation

TAPCON®: a name which stands for a completely new range of voltage regulators from Maschinenfabrik Reinhausen (MR). From simple regulation tasks all the way to complex controls (e.g. for phase-shifting transformers), the TAPCON® range is suitable for all applications. TAPCON® offers high user-friendliness combined with the well-known reliability that is the hallmark of all MR products. Experience gathered from previous regulator generations as well as user requirements have been incorporated into the development. The elegant BLUE Line design makes it an optical enhancement to every control room.

Plug and play with NORMset

The TAPCON® 230 is the compact version of the new family of voltage generators. Its new NORMset standard function turns commissioning into mere child's play. Thanks to this function, only the desired value and the potential transformer ratio need to be entered. The device takes care of everything else.







Easy parameter setting

A clearly arranged, 4-line LCD display not only allows the presentation of important transformer data such as desired value, measuring voltage and tap position, but also comfortably guides the way through setting the parameters using the function keys, some of which are labelled with pictograms.

It goes without saying that the parameters can also be set using the Windows-based PC software.

Clearly marked LEDs on the user interface of the device allow the operating status signals to be displayed. These, like the display, can be seen and read well through the window even when the housing is closed.

Basic equipment

- **Clearly arranged display**

At a glance, the network voltage and the desired voltage can be seen at a single glance. That way, no other displays are required in the control cabinet.

- **Quick installation**

The device can be installed on a mounting board or in a control panel. Connection is via terminals which can be freely accessed by opening the cover. The assignment of the terminals is of course functionally compatible with previous voltage regulators from Maschinenfabrik Reinhausen.

- **Multi-meter function**

Apart from the voltage, the device allows one other measuring value, such as current, apparent power, active or reactive power to be set as a permanent display. This saves not only the costs of an additional display, but extra wiring costs as well.

- **Manual control**

In addition to manual/automatic keys, two additional keys are provided on the user interface of the device for manual higher/lower operation of the tap changer.

Parallel control of the transformers

Parallel control is either according to the principle of the minimum circulating reactive current or according to the Master/Follower method. Both options are adjustable and can be activated at commissioning, as required.

The use of a bus system allows up to 8 transformers to be controlled in parallel groups without an additional device.

Naturally, the voltage regulator TAPCON® 230 can be used without problem where an existing plant already equipped with an MR parallel control device needs to be expanded.



TAPCON® 230: Setting ranges

	Range
Desired voltage level 1 ... 3	85 ... 140 V
Bandwidth	$\pm 0,5 \dots \pm 9\%$
Delay time T1	1 ... 180 s
Delay time T2	1 ... 10 s
Switching pulse duration	1.5 s
LDC	Ur = 0 ... ± 25 V Ux = 0 ... ± 25 V
Z compensation selection	Voltage rise 0 ... 15% of desired voltage level Limitation 0 ... 15% of desired voltage level
Undervoltage blocking	70 ... 99% of desired voltage level
Overvoltage detection with high speed return control (interruptible)	101 ... 130% of desired voltage level Pulse signal 1.5 / 1.5 s
Overcurrent blocking	50 ... 210%
Voltage transformer	0.1 ... 999.9 kV / 100 V
Current transformer	100 ... 5000 A / 5 / 1 / 0.2 A

TAPCON® 230: Operation elements, display

Function keys	Manual / Automatic Raise / Lower Menu keys
Display	4-line, 16-digit LC display 1 LED lamp (green) for signalling status 1 LED lamp (red) each for signalling U<, U>, I> 1 LED lamp (green) for signalling, "parallel operation active" status 1 LED lamp (green) for signalling "NORMset active" status
Power supply	115 V (+25% / -35%) 40 - 60 Hz, can be chosen either from the measuring voltage or separately. Intermountable in factory to a voltage supply of 230 VAC Power consumption approx. 5.5 VA (at 115 V, idle state)
Protective housing	Steel-plate housing with inspection window for flush or projected panel mounting 216 x 326 x 137 mm (W x H x D) Degree of protection provided by enclosure: IP 44 according to IEC 60529, Weight approx. 5.4 kgs

