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6GC61 Voltage Regulator

Measurement, control and voltage regulation in one device

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The 6GC61 digital voltage regulator represents a completely new design series of voltage regulators by Maschinenfabrik Reinhausen (MR). The TAPCON® product line performs tasks such as measurement, control and voltage regulation in one device.

The devices of the TAPCON® series are suitable for multiple applications - from simple regulation tasks to complex control processes (e.g., for phase-shifting transformers). The voltage regulators merge extensive know-how and maximum customer benefit combined with the reliability of all MR products.

Description
The basic configuration of the 6GC61 voltage regulator includes a clearly structured display showing the line voltage and the tap changer position, making any additional displays in the control cabinet redundant. All connections are designed as plug-in connectors. Device wiring and testing are greatly facilitated.

Parallel control of transformer parallel operation based on the principle of minimum circulating reactive current or parallel operation based on the tap synchronization method. A digital bus system allows the standard device to simultaneously control two groups with 6 participants without any extra equipment. Acquisition of the system topology in the multiple busbar system is optionally possible. In this case, the regulators automatically recognize which transformers are operating parallel. No separate device is needed here either.

The customer can link or assign freely programmable inputs and outputs for further processing. This saves wiring work.

Voltage regulator 6GC61

Characteristics
The 6GC61 voltage regulator controls motor-driven step transformers. In addition to regulation tasks, the voltage regulator provides other functions such as:

- Linear and integral control behavior
- Individually configurable time delay

  Vvariable bandwidth from 0.5% to 9%
- Operating modes:
  - automatic mode and
  - manual mode
  - local/remote
- Possibility of remote parameterization via Ethernet (TAPCONTROL)
- Undervoltage and overcurrent blocking
- High-speed tap-down switching in case of overvoltage
- Compensation for voltage drops on the line (line drop compensation)

Efficient and flexible

- Compensation for voltage fluctuations in meshed grids (Z compensation)
- Digital inputs and outputs can be individually programmed on-site by the user
- Additional indicators using LEDs outside the display for freely selectable functions
- Display of all measured values such as voltage, current, active power, apparent power or reactive power, power factor (cos φ)
- 3 different set points selectable
  - for each analog signal 4...20 mA
  - for each analog signal via resistor contact series
  - for each digital signal via dual, BCD or Gray code
- Plug-in terminals for easier connection of the cables
- Additional digital inputs and outputs for free parameterization by the customer
- Parallel operation of up to 6 transformers in 2 groups using the following methods:
  - master / follower
  - circulating reactive current minimization
- NORMset mode for easy commissioning of the voltage regulator

	RS232 electr.	RS485 electr.	RJ45 electr.	ST connector optical	LC connector optical
TAPCONTROL	X	X	X	X	
DNP3	X	X	X	X	
MODBUS ASCII	X	X		X	
MODBUS RTU	X	X	X	X	
IEC 60870-5-101	X	X		X	
IEC 60870-5-103	X	X		X	
IEC 61850			X		X

Available protocols and interfaces

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