Analogue Clocks
Master Clocks
Clock Centrals
Digital Clocks
Wireless Master Clock System
Scoreboards

SCHAUER
TIME::SYSTEMS

MPU-TC204P-NET
Microprocessor controlled master clock with NTP Interface

+ Two independent slave clock lines
+ Connection of up to 2x 100 impulse controlled or up to 2x 100 self-correcting Time Code slave clocks (max. output current 1 A each line)
+ Polarised 24 V DC outputs for minutes-, ½ minutes - or seconds impulses respectively time code for operation of self-correcting and self-setting slave clocks
+ Mixed operation of slave clocks and self-correcting clocks possible
+ Impulse length adjustable
+ Impulse to break rate programmable
+ Automatic adjustment of slave clocks after mains failure
+ Electronic impulse memory for min. 5 years
+ Automatic summer-/winter daylight-saving time programmable
+ Everlasting calendar
+ Automatic free programmable holiday calendar with or without holidays depending on Easter
+ Electronic short-circuit protection
+ Electronic low voltage cut-off (18 V)
+ Two-lined liquid crystal display (LCD) with 8.5 mm digit height (20 characters per line)
+ Indication of weekday, hours, minutes, seconds, date, summer-/winter time and DCF reception
+ Synchronisation through:
  + DCF-77 (for time and summer-/winter time changes)
  + GPS system (for time and summer-/winter time changes)
  + 24 V DC polarised minute impulses (master/slave operation)
+ Text message on display in case of missing DCF/GPS synchronisation after 48 hours
+ Error text message in case of short-circuit on a slave line
+ Accuracy ±0.1 s/day at 25 °C (without DCF synchro nisation)
+ RS232 and RS485/422 Interface:
  + One serial RS232 and RS485 output
  + Interval for output of Schauer time telegram programmable for output every second, every minute, all 5 minutes or on demand
  + User selection of 1200, 2400, 4800, 9600 or 19200 baud, 7 or 8 data bits and uneven, even or no parity

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Signalling device

+ Four potential free switchover contacts
+ Dialogue programming with menu navigation
+ 99 day programs with max. 99 program steps each
+ Period table with 99 program lines
+ Copy function for day programs
+ Switching times per second
+ On/Off- and timer-functions with 1 s … 59 min. run time
+ 32 different timer lengths programmable
+ Checking of programming via display
+ Single-, partial- and complete deletion of programs
+ Program memory for 99 day programs with totally 9801 (=99x99) program steps
+ Alarm relay function: The relay switches off in case of an alarm condition (short-circuit on slave line or missing DCF/GPS synchronisation after 48 hours).
+ Relay function depending on summer-/winter time status: The relay is only active either at current summer time or winter time.
+ Contact rating 250 V / 4 A (ohmic load)

NTP-Interface

+ The master clock is fitted with a 10/100 Base-T Ethernet Interface, which enables to act as NTP time server in a TCP/IP v4 network (RJ45 connection)
+ NTP (Network Time Protocol) protocol for synchronisation of computers in a PC network = international standard for PC time transmission in internet
+ NTP is also used in smaller networks (LAN) for synchronisation of PC server and PC work stations
+ Alarm messages per e-mail at NTP errors possible
+ Input (RJ45) for use of master clock as net client in a TCP/IP network
+ This interface supports following protocols:
+ NTP and SNTP:
  + Network Time Protocol (NTP) v2, v3 and v4 in Unicast, Broadcast and Multicast
  + Simple Network Time Protocol (SNTP) v3 and v4 in Unicast, Broadcast and Multicast
+ Network accuracy:
  + Synchronisation typically within 10ms…100ms of MPU-TC400-NET time base, depending on network delay and jitter (NTP)
+ Comfortable remote control of complete master clock via web interface:
  + no additional software necessary, handling via standard web browser possible
+ Export of master clock configuration as file
  + Re-establishment at any time
  + Selection of data options which shall be imported
+ Alarm message by e-mail
  + at synchronisation failure
  + at short-circuit of slave lines
  + Supervision of a 24VDC alarm input
+ Software-Update if necessary
+ Remote maintenance and -programming

Mounting

Plastic case for surface wall mounting and mounting on top hat rail according to DIN 46277 sheet 3

Colour: Upper part light grey, lower part dark grey

Dimensions (WxHxD): 241 x 313 x 87 mm

Power supply: 220…240 V / 47…63 Hz

Power consumption: 110 VA

Ambient temperature: 0…40 ℃

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Options:

DCF-ANT02:	DCF-77 radio synchronisation antenna
GPS-ANT8:	GPS reception antenna with DCF output
MPU-AK1.8:	24 V DC / 1.8 Ah power reserve

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