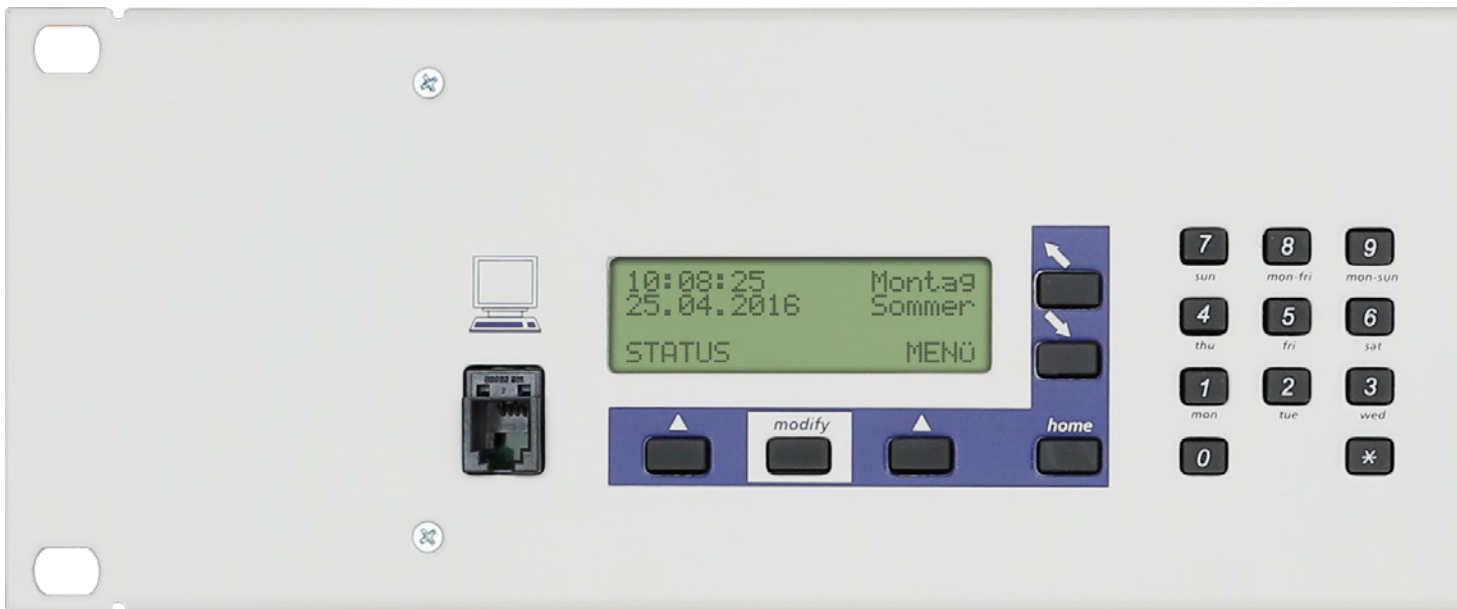## MASTER CLOCK SERIES

ETC

The EuroTime Center ETC is a versatile master clock for time service systems. It controls both conventional impulse slave clocks and self-setting MOBALine clocks.

HIGHLIGHTS

CLOCK LINE OUTPUTS

The ETC series master clocks provide different types of clock lines. They are able to control self-setting MOBALine or serial synchronized clocks as well as conventional impulse clocks.

ETC 12: 1x Impulse/DCF active/DCF impulse

ETC 14: 1x MOBALine/impulse/DCF active/ DCF impulse
1x serial

ETC 24: 2x MOBALine/impulse/DCF active/ DCF impulse
1x serial

TIME SOURCE

The ETC can be synchronized by a time signal receiver (DCF 4500 or GNSS 4500) or serially.
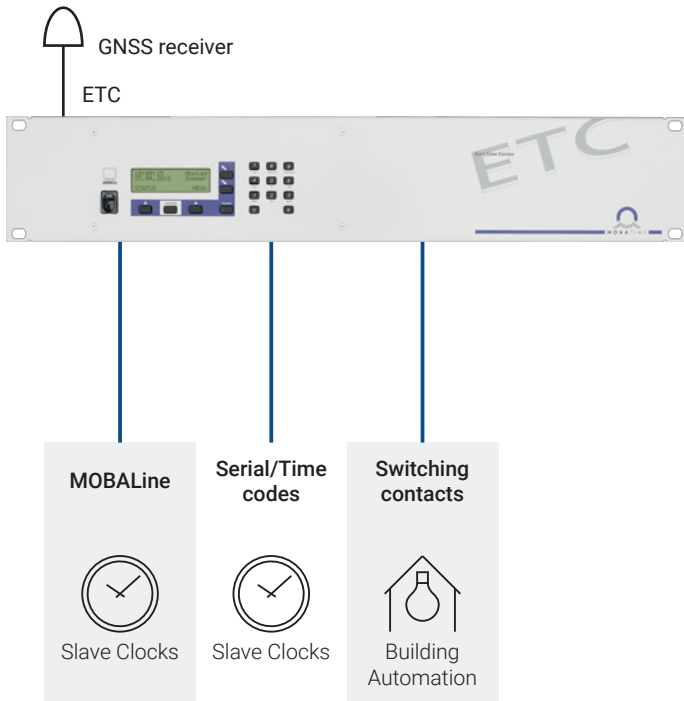
TIME CONTROL

Date-dependent and/or week-cyclical programs switch lights, signaling devices or other technical building functions to the second.
ETC 12: 2 switching contacts
ETC 14: 4 switching contacts
ETC 24: 4 switching contacts, 3 control inputs

APPLICATIONS

GNSS receiver

ETC

MOBALine	Serial/Time codes	Switching contacts
Slave Clocks	Slave Clocks	Building Automation

TECHNICAL DATA

MECHANICAL DATA AND ENVIRONMENT
General data

Dimensions:
Rack: 483 x 88 x 80 mm (19", 2U)
Wall: 202 x 145 x 64 mm
Weight:
Rack: 1.4 kg
Wall: 0.8 kg
Housing material:
Rack: aluminum
Wall: plastic
Protection degree: IP 20
Operating temperature: 0–50 °C
Operating humidity: 10–90 % relative, no condensation
Power supply:
ETC 12/12R: 230 VAC or 24–28 VDC, 0.6 A
ETC 14/14R: 90–240 VAC or 24–28 VDC, 1.5 A
ETC 24/24R: 90–240 VAC or 24–28 VDC, 3 A
MTBF: > 250.000 h

STANDARDS
Conformity

The ETC conforms to the following agency approvals[1]:

UKCA, CE, CB, RoHS, WEEE
EMC: EN 50121-4[2], EN 61000-6-4, EN 61000-6-2
Safety: IEC 62368

[1] For full list, see product manual
[2] Not included in CB certificate

REFERENCE SIGNAL INPUTS
- 1x DCF current loop (e.g. GNSS 4500)
- ETC 14/24: Serial synchronization

REFERENCE SIGNAL OUTPUTS
- Serial interface RS-232/422, serial message
- 1x DCF77 (current loop)
- Clock line(s):
  ETC 12(R): 1x impulse/DCF/DCF impulse
  ETC 14(R): 1x impulse/MOBALine/DCF/DCF impulse
  ETC 24(R): 2x impulse/MOBALine/DCF/DCF impulse

ALARMS
- ETC 24: Electrical output: relay contact

BUILDING AUTOMATION
- Switching outputs:
  ETC 12: 2x
  ETC 14/24: 4x
- Control inputs:
  ETC 24: 3x

OSCILLATOR STABILITY
- Holdover (after 24h synchronization) at room temperature <+/- 100ms/day (<1ppm)

ACCURACY (TYPICAL VALUES)
- GNSS to clock line:
  < +/- 0.5 ms + accuracy of the clock line

MANAGEMENT & SUPERVISION
- Operation via keypad
- Error indication on display

SECURITY
- Configuration and log files are stored on non-volatile memory in order to survive power failures
- See Mobatime security guideline (available on request)

INTERFACES

ETC 12/14/24 | 1 | 2 | 3 | 8 7 6 | 4 | 5

ETC 12R/14R/24R | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8

1	**Terminal**	RS232 interface for local management, RJ10 connector	
2	**Display**	LCD, 4 lines with up to 20 characters (with backlight)	For status, time and network configuration info Navigation keys
3	**Keyboard**	Alphanumeric with navigation keys	
4	**Relays**	3-pin terminals ETC 12(R): 2x ETC 14/24(R): 4x	Switching contact 230 VAC, 10 A
5	**Power supply**	3-pin terminal	ETC 12/12R: 230 VAC or 24−28 VDC, 0.6 A ETC 14/14R: 90−240 VAC or 24−28 VDC, 1.5 A ETC 24/24R: 90−240 VAC or 24−28 VDC, 3 A

6	**Serial outputs**	ETC 12: 6-pin terminal ETC 14: 10-pin terminal ETC 12R/14R/24/24R: 12-pin terminal	ETC 12: RS232 ETC 14/24: RS232/422
	DC power supply		24 VDC, 1.5 A
	Battery		For connecting an active power reserve battery
	Alarm relay		ETC 12/14: not available ETC 24: Normally closed Max. load: 30 W (60 VDC or 1 A) / 60 VA (30 VAC or 1 A)
7	**DCF input**	ETC 12/14: 5-pin terminal ETC 12R/14R/24/24R: 8-pin terminal	Input for radio receiver with current loop output (e.g. GNSS 4500, DCF 4500)
	DC output		For powering GNSS 4500
	DCF output		Impulse/DCF
	Control inputs		ETC 12/14: not available ETC 24: 3x
8	**Slave clock outputs**	ETC 12/14: 2-pin terminal ETC 12R/14R/24/24R: 4-pin terminal	ETC 12: 1x Impulse/DCF active/ DCF impulse ETC 14: 1x MOBALine/impulse/ DCF active/DCF impulse ETC 24: 2x MOBALine/impulse/ DCF active/DCF impulse

Do you have any questions?
We are happy to help.

Product specifications are subject to change without notice.

MOBATIME