



**ETC Series Impulse Master Clocks - with self-setting MOBALine timecode output and programmable control of heating, lighting and signaling bells**



ETC 12 R  
ETC 14 R  
ETC 24 R  
rack mounting case



ETC 12  
ETC 14  
ETC 24  
wall or DIN rail  
mounting case

The **ETC** series of **impulse master clocks** are designed to control conventional impulse slave clocks using alternate polarity 24v DC impulses with a one second, half minute or one minute repetition rate or intelligent slave clocks using high reliability **MOBALine**® time code -ETC 14 (R) and ETC 24 (R) only.

The **ETC master clock** also provides 2 or 4 user programmable switching circuits allowing flexible control of heating, lighting, signaling bells and other relay controlled circuits on a weekly or other periodic date related basis.

The **ETC** range is available with cases suitable for wall or DIN rail mounting or as the **R** version with a case suitable for freestanding applications or 19" equipment rack mounting.

The user interface allows easy and intuitive entry of programming commands either by the front panel keyboard or from a PC using the optional 'Switch Editor' software and a serial data link.

**slave clock outputs**

Model	ETC 12 (R)	ETC 14 (R)	ETC 24 (R)
Number of slave clock outputs	1	1	2
Configurable as 1 second, half minute, one minute or DCF time code	yes	yes	yes
Configurable for <b>MOBALine</b> ® timecode output	no	yes	yes
Output voltage	24V	24V	24V
Maximum impulse output current	500 mA	700 mA	1000mA
Maximum number of impulse slave clocks @ 6mA per clock	80	110	160
Maximum <b>MOBALine</b> ® output current	none	500 mA	700mA

Maximum number of <b>MOBALine</b> ® slave clocks @ 6mA per clock	none	80	110
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All outputs are overload and short-circuit protected with automatic adjustment of the slave clock time and recovery from an overload, short circuit or power failure.

## switching circuits ▲

Model	ETC 12 (R)	ETC 14 (R)	ETC 24 (R)
Number of switching circuits	2	4	4
Changeover relay contacts rated at 230V ac 10A	yes	yes	yes
Weekly periodic and/or date dependent switching programs	yes	yes	yes
Switching commands activated on minute edge	yes	yes	yes
Short-time signaling commands programmable for 1-99 seconds	yes	yes	yes
Maximum number of programmed commands	1000	1000	1000
Front panel keyboard command editing	yes	yes	yes
Remote command editing using a PC and serial link - requires optional 'Switch Editor' software at extra cost.	yes	yes	yes

## timekeeping & synchronisation ▲

The ETC master clock will operate either as stand-alone units or synchronised from external time references.

**Stand-alone operation**      When used in stand-alone configuration the clock maintains time keeping from a high stability internal crystal oscillator. The clock is pre-programmed for leap-years and can be user programmed for the required automatic seasonal time-change.

**Synchronisation options**      ■ DCF & MSF radio time codes (requires 484mb series radio time code receiver)

## environment ▲

**Power supply**      ETC master clocks have an internal PSU and will operate from a 230v ±10% 50Hz ac supply or from a 22-30V dc source. The power consumption is:

- **ETC 12 (R)**  
230VAC - <0.15A  
22-30V DC - < 600mA
- **ETC 14 (R)**  
230VAC - <0.25A  
22-30V DC - < 1.5mA
- **ETC 24 (R)**  
230VAC - <0.4A  
22-30V DC - < 2A

**Battery backup**      Optional 2.3Ah/24V battery pack

**Operating temperature**      0-50°C

**Relative humidity**      0% to 95% non condensing

**MTBF**      >50,000 hours

**Accuracy**      ■ Stand-alone operation: 0.1 sec/day 20-25°C  
■ Synchronised to MSF or DCF: within 30mS of UTC

**EMC**      The ETC master clock, when installed and used in accordance with our recommendations, complies with the European Community Electromagnetic Compatibility Directive 89/336/EEC and Low Voltage Directive 73/23/EEC and conforms to the following standards:

- EN 60950, security, protection class 1
- EN 61000-6-3, emissions
- EN 50121-4, emissions

**Dimensions**      Wall and DIN rail version: 202mm wide x 145mm high x 64mm deep  
19" rack version: 483mm wide x 88mm high x 80mm deep

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ETC Impulse Master Clock with self-setting Mobaline timecode output. Programmable Relay Control