Description

Westerstrand Wireless Clock System

FSK Transmitter

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1 General

The FSK-transmitter is a part of Westerstrand Wireless Clock System, a fully automatic system for wireless control of analogue and digital clocks. The transmitter is a UHF crystal-based FSK transmitter using the licence free ISM band. The transmission frequency is 869.525 MHz with a 10% duty cycle. The transmitter is intended for connection to a III Master Clock. A time message is transmitted each 10th second using the Master Clocks serial port. The connection between Master Clock and transmitter is done by RS232.
The output power is selectable in three steps; 25 mW (+14dBm), 100 mW (+20dBm), 500 mW (+27dBm). The antenna is of type monopole whip. Please note that if the system contains analog battery driven clocks the transmitter must be running before installing the batteries in the clocks.

2 Installation

2.1 Mounting of transmitter

As the antenna is omnidirectional mount, if possible, the transmitter in the middle of the area to be covered and with the whip antenna vertical (upward). To secure a good radio communication place the transmitter away from metal, in a high and open position.

2.2 Connection to QWTIME generation III Master Clock (1233XX-XX, 1243XX-XX)

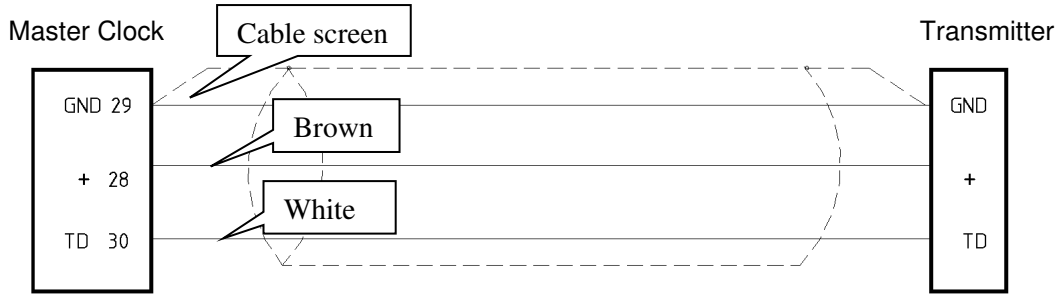
2.2.1 Master Clock configuration

If the transmitter is going to be connected to an existing QWTIME III Master Clock the Master Clock must be configured. Please check the following: (See Master Clock user manual for details)
- Software version: QW3-A305 or later.
- Hardware configuration: RS232
- RS232 output setup: MANC LT 9600 8N1

If the Master Clock and transmitter are delivered together all configuration is already done from factory.

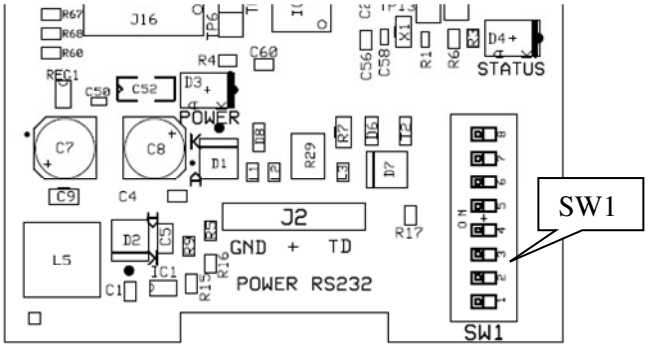
2.2.2 Connection

Connect the transmitter to the Master Clock. The transmitter is from factory equipped with a 3 m cable which is enough in most cases. If a longer cable is needed use a 2-wire shielded cable, minimum area 0,22 mm^2 (24 AWG), max. length 30 m.
Please note that the cable connector is detachable to make it easier to connect the cable. The connector can be plugged in two different ways, horizontal or vertical. It doesn't matter which alternative that is used, the main thing is that the incoming cable has space enough.



3 Output Power Configuration

The output power is selectable in three steps; 25 mW (+14dBm), 100 mW (+20dBm), 500 mW (+27dBm). The switch (SW1) is located in the upper left corner of the PC-board. Use a small screwdriver or a pencil to move the switches.



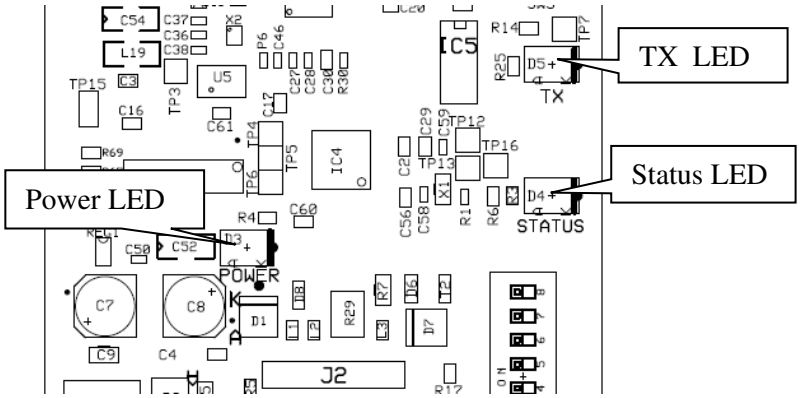
	Output Power SW1					
OFF/ON	25mW		100mW		500mW*	
	5	6	5	6	5	6
ON	X	X	X			
OFF				X	X	X

Remarks: *Factory default

Please note that SW1 DIP-switch 1,2,3,4,7,8 is not used and must be OFF.

4 LED indication

LED	*Remark*		
POWER	Power indication	Green = Power OK	Black = No power
STATUS	Transmitter status	Green LED flashes slowly, once every two seconds = The transmitter is working normally and is sending out time messages every 10th second.	Green LED flashes rapidly, 5 times per second = The transmitter has not received any time messages from the Master Clock.
TX	Transmit data	Normal mode = a yellow blink every 10th second	Black = No transmission.



5 Functional Check

Check the following on the transmitter card:
- The green POWER LED is ON.
- The green STATUS LED flashes every two seconds.
- The yellow TX LED flashes every 10 seconds.

If the STATUS LED flashes fast (5 times / s), the transmitter receives no message from the Master Clock. Check the main clock settings, the connection wiring and the transmitter's DIP settings.

6 Technical data

Article no.	123388-10
Operating frequency	869.525 MHz
Conducted RF power	Selectable, 25 mW (+14dBm), 100 mW (+20dBm), 500 mW (+27dBm).
Modulation	FSK (Frequency Shift Keying)
Transmission range	
Indoor	up to 100 – 200 m
Outdoor	up to 1000 m
Connection	RS232 + power. 3 m connection cable included.
Power supply	36V (from Master Clock)
Temperature range	-20° C to +50° C
Size	114 x 64 x 30mm (360 x 64 x 75 including mounting bracket and antenna)
Standards	Radio: EN 300 220 EMC: EN 301 489