

# Itowa ✱

*Radio Remote Control Systems*

**NEW**  
Intelligent Frequency  
Changeable System

## COMBI

Remote control for cranes



### COMPLETE CONTROL IN YOUR HANDS

The COMBI range is ideal for the remote control of building and industrial cranes, bridge cranes and all electro-mechanical machinery. It provides greater safety, as it enables the operator to be optimally located in the hardest working conditions. Greater profitability is also achieved, saving in time and staff.

its exclusive design combines strength, class and easy-handling incorporating the latest technology. One of its advantages is that several manoeuvres can be carried out simultaneously.



# COMBI

## Remote control for cranes

Combi remote controls have two versions of the operating commands: digital up to 4 or 6-step joysticks, or analogical and proportional step-less joysticks, so that it can control digital or analogical manoeuvres. Analogical manoeuvres can be adjusted by the operator from the transmitter, independently for each manoeuvre.

The receiver has a set of Leds to reporting system status, providing greater safety and agility when anomalies have to be detected. It also has an RS-485 serial port to connect to PLCs, robots, variators or any peripheral equipment that requires information through the serial port.

It incorporates a multi-frequency, synthesized radio system that enables the operator to automatically change the working channel.

These units accept several operation configurations depending on each application.

MASTER/S�AVE: Two transmitters control two receivers.

PITCH & CATCH: Two transmitters control one receiver.

TANDEM: One transmitter controls two receivers.



## TECHNICAL DESCRIPTION Combi

Number of commands	DIGITAL: 13 / 21 / 25 + Start - Stop - Horn DIGITAL/ANALOGICAL: 13-8/20-8 + Start - Stop - Horn
Responding time	< 50 ms
Active emergency responding time	< 50 ms.
Passive emergency responding time	1.900 ms
Operating range distance	90 m / 295,2 ft

### TRANSMITTER

Operating frequency range	UHF UN30 del CNAF (434.050 MHz -434.775 MHz) UHF UN32 del CNAF (433.050 MHz -434.775 MHz)* UHF UN39 del CNAF (868.000 MHz -870.000 MHz)
Channel spacing	25 kHz
Modulation	FM
RF power output	10 mW A.R.P.
Coding key	FFSK
Transmitting power consumption	80 mA
Standby power consumption	< 800 µA
Operating working time (20 °C/68 °F)	11 hours + 30 minutes after low-battery led flashes
Battery capacity and type	Ni-MH battery 7,2V , 1500 mAh
Battery weight	200 g / 0,44 lb
Operating temperature	-10 °C to 55°C / 14 °F to 131 °F
Casing material	Polyamide 6-6 reinforced with 15% fiberglass
Transmitter weight	1,5 kg / 3,30 lb
Protection rating	IP 65
Operating commands	Two dual-axis fully proportional and analogical step-less joysticks or digital up to 6-step
Indicator leds	Transmission indicator and low-battery on separate leds

### RECEIVER

RF Sensitivity	0.3 mV
Number of commands	12 / 21 + 3 (Start-Horn + 2 Stop)
Outputs	RELAY: Resistive load 5 A+5 A at 250Vac or 30Vdc Comm. Port. RS-485 ANALOGICAL: by tension bipolar (0-5V, +5V, 0-10V, +10V) and unipolar (2/4/6 V, 3/6/9 V, 6/12/18 V) PWM
Power requirements	48 Vac / 115 Vac / 230 Vac (-20% +15%), available 24Vdc/12Vdc
Display	By means of 6 leds
Maximum consumption	0,9 A (48 Vac) / 0,5 A (115 Vac) / 0,2 A (230 Vac)
Wiring	By Itowa connector of 48 pins.
Dimensions	External 374x274x116 mm / 14,72x10,79x4,56 in
Fuses	Emergency Stop Function 7,5 A
Weight	With Fastening 3,8 kg / 8,44 lb
Protection rating	IP 65
Fastening	3mm bichromatic steel. By nut bolts or magnetic

### BATTERY CHARGER

Power requirements	230 Vac (optional 110 Vac)
Dimensions	90x110x65 mm
Battery charging time	8 hours
Temperature charging range	0 °C to 40 °C / 32 °F to 104 °F
Weight	200 g / 0,44 lb

\*Operating range frequency only applicable in some countries.

**Itowa**   
Radio Remote Control Systems

Faraday, 159 - 08224 TERRASSA (Barcelona) SPAIN  
Tel. +34 93 733 98 50 - Fax +34 93 789 13 51  
<http://www.itowa.com> - e-mail: [info@itowa.com](mailto:info@itowa.com)