



RADIO REMOTE CONTROLS FOR
CONCRETE PUMPS



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ADVANTAGES:

WORKING COMFORT AND COST REDUCTION

The operator, free from the bond of the cable or of the fixed station, can take place in the most safe and suitable position to control the machine and the load, without the aid of other operators.

SIZE AND WEIGHT

They are very compact and thus, allow the operator to have a higher freedom of movement.

CALIBRATION VIA RADIOFREQUENCY

The "proportional outputs calibration mode" allows you to program and save each joystick and potentiometer response, while you are operating the machine, thus adapting the speed of all movements and reaching the best possible result. (PIN code required).

CONTACTLESS OPTICAL JOYSTICKS

Designed and manufactured by IMET; thanks to their wide inclination angle ($\pm 40^\circ$), guarantee a precise handling, like no other, that will continue throughout the remote control's life.

COMFORTABLE PUSH BUTTONS

Extra large print pushbuttons equip WAVE2 S and WAVE2 L for comfortable use also wearing gloves and for long work shifts.

ERGONOMIC CARRYING BELTS

The practical waist belts or shoulder straps allow the operator to completely free his hands to better follow the operations like the hooking/unhooking of a crane load.

EXTREME ENVIRONMENTS

The boxes are designed and manufactured with materials highly resistant to impacts. Operating temperatures from -25°C to $+70^\circ\text{C}$.

THE DSC FUNCTION

The DSC function performs instant corrections of the speed (low-speed mode), thus allowing the operator to handle the high precision movements in the smoothest way.

CERTIFIED SAFETY

The STOP circuit ensures the maximum level of safety in accordance with the European and international standards.

LOGGING OF EVENTS

IMET Radio remote controls log every event causing a failure or an abnormal stop, as well as the number of hours done by the remote control.

THE DIAGNOSIS TOOL

It interfaces the PC to the radio control, allowing to check all the operating parameters and to see the list of the most significant events that have taken place.

AUTOMATIC FREQUENCY CHANGE

The radio remote control is autonomously able to position itself on the best radio transmission channel. Manual changes of channel change are no longer required.

Since 1988 we design and manufacture industrial safety radio remote controls for every kind of concrete pumps. Solidity, ergonomics, safety and quality of the materials used, make of it a cutting edge product, of the innovative design.



M880 ARES2 C

ULTRA COMPACT, ULTRA ROBUST

The ARES2 C has been thought to suit all those applications requiring a limited amount of digital and analog functions operated by toggle switches, pushbuttons, rotary switches and potentiometers. Easiness of use is guaranteed even wearing gloves thanks to the attention put in the transmitter lay out design. For the carrying, a robust belt clip is integrated in the housing. ARES2 C features a STOP command in cat. PLc/Cat.2/ SIL1, suitable for all that not safety critical applications.



M880 ARES2 E

ULTRA COMPACT AND ROBUST, SAFETY AT TOP.

The ARES2 E has been thought to suit all those applications requiring a limited amount of digital and analog functions operated by toggle switches, pushbuttons, rotary switches and potentiometers. Easiness of use is guaranteed even wearing gloves thanks to the attention put in the transmitter lay out design. For the carrying, a robust belt clip is integrated in the housing. ARES2 E features a STOP command in cat. PLc/cat.4/SIL3, suitable for the most demanding safety critical applications.



DIMENSIONS
143 x 80 x 140 mm

WEIGHT
667 g

M880 WAVE2 S

M880 WAVE2 L



THE HANDHELD TRANSMITTER, SMALL AND POWERFUL

WAVE2 S is the proud successor of the much appreciated WAVE S being the ideal solution for the control of those mobile applications requiring Digital commands and at maximum one Analog output, like floor screed pumps, conveyor belts, vibratory hammers etc...

It is available in the following configurations:

- 6 functions + Start/Horn + Stop + DF display
- 8 functions + Start/Horn + Stop

In addition, room is available for one auxiliary command (rotary switch, toggle switch, key switch, potentiometer, pushbutton).



AUXILIARY COMMANDS



DIMENSIONS

72 x 42 x 190 mm

WEIGHT

235 g (batteria inclusa)

THE HANDHELD TRANSMITTER, LARGE AND POWERFUL

This pushbutton unit extends the possibilities of the short version, WAVE2 S, to:

- 10 functions + Start/Horn + Stop + DF display
- 12 functions + Start/Horn + Stop

In addition, room is available for one auxiliary command (rotary switch, toggle switch, key switch, potentiometer, pushbutton).



DIMENSIONS

72 x 42 x 255 mm

WEIGHT

315 g (battery included)

M880 ZEUS2 B2

SOLID AND VERSATILE

A perfect mix of reliability and versatility reunited in a single control station; ZEUS2 B2 is the synthesis of the best ergonomic and functional features. The compact size of the panel, having rationalized space, makes it an easily customizable transmitter, according to the specific needs.

It is available with 1X1 or Stepless joysticks for the control of ON/OFF or Proportional booms. The concrete flow regulation can be ON/OFF or proportional too.

M880 THOR2 X2N

STRONG AND COMPLETE

Equipped with 3 dual-axis joysticks on the main panel, comfortable width and well studied ergonomics, THOR2 B3 is aimed at concrete pumps with 4-5 booms. It is available with 1X1 or Stepless joysticks for the control of ON/OFF or Proportional booms. The concrete flow regulation can be ON/OFF or proportional too.



TRI-AXIAL JOYSTICK PL d

Featuring a rotating return-to-center knob, it allows enabling an additional proportional or ON-OFF function having category PLd on the joystick itself. Like all IMET designed and manufactured joysticks, this model is also an optical type, thus without electrical contacts and not subject to magnetic field disturbances.



M880 THOR2 B3N

M880 THOR2 B3D



STRONG AND COMPLETE

THOR2 B3N is distinguished by its large paneling controls that can contain 3 biaxial joysticks and many other controls on selectors, potentiometers and buttons. It can be equipped with a double battery for non-stop shifts. Suitable for most concrete pumps and betonpumps, both with on-off and proportional controls.

DATA IN REAL TIME

The THOR2 B3D model, besides having the possibility to contain all the commands present in the THOR2 B3N, can be equipped with a large 4-inch graphic display that will display in real time all the data coming from the pump or betonpump, leaving the operator total control of the machine directly from the radio remote control.



M880 OPTIONS

ADD BOX DISPLAY

AVAILABLE ON MODELS ZEUS2 AND THOR2

The ADD BOX expands the number of commands present in the transmitting unit, allowing to insert additional push-buttons, potentiometers, switches, etc ..., according to specific requests. It is also used as housing for a large display (also available with a 64x102 or TFT QVGA 3,5" graphic display) or by LEDs, to visualize data and/or alarms coming from the crane.



LEDs

Feedback information can be reported on the transmitter by colored LEDs.

BUZZER

Feedback information can also be reported as an acoustic alarm. Note that DF can be given by the combination of Display/Led and Buzzer.



WAVE DISPLAY / LEDs

WAVE2 S and L can be equipped with a 64X102 pixels Display and 4 LEDs.

BEACON

Useful for operations in the darkness; this option is a keypad illuminator and at the same time, a torch. Can be combined with a light sensor.



FURTHER M880 OPTIONS

TILT SENSOR

This device is able to recognize emergency situations caused by:

- Fall and tip over of the radio remote control
- Loss of balance by the operator

The functioning of the TILT SENSOR can be customized according to customer requirements and to the level of safety required: you can set the simple activation of predefined functions (eg. buzzer), up to the suspension of all functions of the radio control.

TILT SENSOR



SERIAL CABLE

The transmitting units of models ZEUS and THOR can be equipped with a socket for the serial connection to the receiver. The direct cable connection excludes the radio transmission, thus overcoming any issues related to signal noise or use of the product in areas where the radiofrequency is not permitted, or due to the exhaustion of the battery.

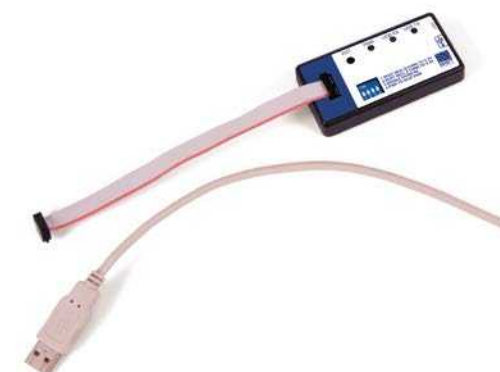
TWIN B

This feature is available on THOR2 and consists of a twin battery compartment. Once the first accumulator enters the "low battery" status, the transmitter automatically switches on the second accumulator. This process takes place without power supply interruption, hence, without transmitter shut down. It is the ideal option when the radio controlled machine has to operate continuously or for very long periods.



PITOOOL

Produced by IMET, it allows to connect the transmitter or the receiver to be diagnosed to a PC. The data can be viewed through an easy and intuitive graphic interface and then saved directly on the PC in editable format.



M880
TECHNICAL DATA

TRANSMITTING
UNITS

Dimensions (L.W.A.)		143x80x143 mm	S: 72 x 42 x 190 mm L: 72 x 42 x 255 mm	205x150x150 mm	295x180x160 mm
Dimensions with display (L.W.A.)		/	Same	205x205x150 mm	295x250x165 mm
Weight (battery included)		≈ 667 g max	S: ≈ 0,235 Kg max L: ≈ 0,315 Kg max	≈ 1450 g max	≈ 2300 g max
Range		100 m			
Max number of ON/OFF commands		Up to 32	Up to 32	56 Max	56 Max
Max number of analog commands (optional)		Up to 8	Up to 4	16 (19) Max	16 (19) Max
Joystick commands					
UMFS ^a = Unintended Movement From Standstill (ISO 13849-1:2006 6.2.6 architecture)		/	/	Up to 16	Up to 16
Number of service and safety commands		3 (Start, Clacson, Stop)			
Casing material		Charged Nylon UL94 HB			
Supply voltage		3,7 Vdc	3,6 Vdc	3,6 Vdc	3,6 Vdc
Absorption		≈ 80 mA	95 mA	95 mA	95 mA
Max supply power		0,3 W	0,35 W	0,35 W	0,35 W
Battery		WAVE2: 3,7V 2000 mA Li-Ion Batteries, NiMh 3,6V-2,2A/h accumulator			
Autonomy at 20°C with charged battery in continuous service		≈ 25 hours	≈ 23 hours	≈ 22 hours	≈ 22 hours
Notice time of low battery		≈ 15 min			
Character visualization speed on the display		100 char/s			
Command	STOP	PL e Cat.4 (ISO 13849-1:2006 6.2.7 architecture)			
	WITHOUT MUSHROOM BUTTON	PL e Cat.1 (ISO 13849-1:2006 6.2.4 architecture)			
	JOYSTICK	PL e Cat.3 (ISO 13849-1:2006 6.2.6 architecture)			
	LEVER - BUTTON	PL e Cat.2 (ISO 13849-1:2006 6.2.5 architecture)			
Operating frequency 1		I.S.M. Band 433.050-434.790 MHz Number of programmable channels: 69, AFA mode (Adaptive Frequency Agility) or on fixed channel. Max power: 1 mW e.r.p			
Operating frequency 2		I.S.M. 434.040-434.790 MHz Number of programmable channels: 30, AFA mode (Adaptive Frequency Agility) or on fixed channel. Max power: 10 mW e.r.p			
Operating frequency 3		2,405-2,480 GHz, 16 ch DSSS			
Alphanumeric LCD display (optional)		2 rows 16 char. / 4 rows 20 char.			
Graphic display (optional)		128x64 pixel monochromatic / TFT QVGA 3.5" ^b			
Buzzer		Available			
Operating temperature		-25°C - +70°C			
Storage temperature		-40°C - +85°C			
Power supply		Battery single su ARES, WAVE2, ZEUS2 (Double battery optional on model THOR2) ^b			
Radio transmission		Double (Single MTRS)			
Output calibration		Via calibrating procedure of proportionals			
LEDs		Link TX, Link RX, Error code			
Degree of protection		IP 65			

a = dipende dalla configurazione comandi / b = da implementare



RECEIVING
UNITS

	H AC / H DC	L AC / L DC	S AC / S DC	M AC
Supply voltage	H-AC: 45-240 Vac (50-60 Hz); H-DC: 11÷30 Vdc and 24 Vac (50-60 Hz)	L-AC: 24-240 Vac (50-60 Hz); L-DC: 11÷30 Vdc	S-AC: 24 Vac (50-60 Hz) / 12÷30 Vdc (Optional 24-440 VAC [50-60 Hz]) S-DC: 12÷30 Vdc	12÷30 Vdc / 24 Vac (50-60 Hz)
Safety commands	STOP, Safety-Enable (up to 8)	STOP, Safety-Enable	STOP, Safety-Enable	STOP, Safety-Enable
Commands	73 ^a relays or MOS, 32 ^a Analog (PWM, current, voltage)	16 relays or 20 MOS, 8 Analog (PWM, current, voltage)	S-AC: 14 relays (N.O.); S-DC: Max 14 MOSFET (N.O), Max 4 Proportional, 2 Digital IN	24 relays (20 N.O. and 4 N.C./N.O.) (Current, voltage)
Service commands	Start, Horn, Timed-Relay	Start, Horn, Timed-Relay ^b	Start, Horn, (configurable)	Start, Blinker (Among the 24 relays)
Input port	CAN, Serial RS232/RS485	CAN, Serial RS232/RS485	S-DC: CAN, Serial RS232 RS485	CAN, Serial RS232/RS485
STOP relay category ^a	PLe Cat 4, ISO 13849-1: 2006 6.2.7 architecture	PLe Cat 4, ISO 13849-1: 2006 6.2.7 architecture	PLe Cat 4, ISO 13849-1: 2006 6.2.7 architecture. PLc Cat 1, ISO 13849-1: 2006 6.2.3 architecture, (With ARES2 C and WAVE2 C)	PLe Cat 4, ISO 13849-1: 2006 6.2.7 architecture
Field BUS	CAN (ID 11-29 bit) CANOpen (ID 11-29 bit) RS232 / RS485	CAN (ID 11-29 bit) CANOpen (ID 11-29 bit) RS232 / RS485	S-DC: RS232 / RS485 (115200 Baud max) CAN_Bus (ID 11-29 bit) (1Mbit/s max) CANOpen (ID 11-29 bit) (1Mbit/s max)	CAN (ID 11-29 bit) CANOpen (ID 11-29 bit) RS232 / RS485
Integrated flashing light	/	/	Only AC version	/
Operating temperature	-25°C - +70°C	-25°C - +70°C	-25°C - +60°C	-25°C - +70°C
Degree of protection	IP 66	IP 66	IP 66	IP20
Dimensions	205 x 130 x 280 mm	140 x 65 x 230 mm	127 x 147 x 70 mm	180 x 120 x 73 mm
Weight	3500 g	1700 g	630 g	910 g

a : depends on the configuration
b : only L DC

BATTERY CHARGER

Supply voltage	11÷30 Vdc
Absorption	400 mA max
Batteries type	3,6V NiMH
Charging current	900 mA
Max charging time	about 2 hours and 20 minutes
Recommended operating temperature with battery in charge	0°C to +35°C (+32°F to +95 °F)
Storage temperature when off and without battery	-40°C - +85°C (-40°F - +185 °F)
Dimensions (L.W.H.)	80 x 30 x 120 mm
Weight	250 g
Degree of protection	IP 20

CB36NIMH

Supply voltage	11÷30 Vdc
Absorption	400 mA max
Batteries type	3,6V NiMH
Charging current	900 mA
Max charging time	about 2 hours and 20 minutes
Recommended operating temperature with battery in charge	0°C to +35°C (+32°F to +95 °F)
Storage temperature when off and without battery	-40°C - +85°C (-40°F - +185 °F)
Dimensions (L.W.H.)	80 x 30 x 120 mm
Weight	250 g
Degree of protection	IP 20

CB37LION

Supply voltage	11÷30 Vdc
Absorption	400 mA max
Batteries type	3,7V LiPo
Charging current	900 mA
Max charging time	about 2 hours and 30 minutes
Recommended operating temperature with battery in charge	0°C to +45°C (+32°F to +113 °F)
Storage temperature when off and without battery	-40°C - +85°C (-40°F - +185 °F)
Dimensions (L.W.H.)	70 x 25 x 130 mm
Weight	110 g
Degree of protection	IP 20

COMPLIANCE TO THE REGULATIONS

- IEC/EN 60950-1
- ISO 13849-1
- EN 50371
- EN 13557/A2
- EN 60204-32
- EN 61000-6-2
- EN 60529:1991+A1
- EN 301 489-1
- EN 301 489-2
- EN 301 489-1
- EN 301 489-3
- EN 300 220-1
- EN 300 220-2
- 1999/5/CE (Directive R&TTE)
- 2006/42/CE (Directive Machines)
- RED Directive (2014/53/EU)



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