RCIM
Radio remote control

Sturdy, radio remote control stations, suitable for a safe and user-friendly use across a wide range of industries..

FEATURES

- Extremely sturdy and tough radio remote controls, designed for the harshest environmental conditions as synthesis of the best efficiency and ergonomy features.
- Transmitters featuring 4 LEDs that signal operating status, battery level and fault messages.
- Based on AFA (Adaptive Frequency Agility) technology to avoids manual frequencies changes: the less impeded channel among the available ones is continuously searched and selected by the radio remote control.
- IP protection degree: radio remote controls RCIM are classified IP65.
- Extreme temperature resistance: from -25°C to +70°C*.
- Cases in reinforced UL94 HB Nylon.
- Featuring a safety customizable PIN CODE to restrict the use of the radio remote only to authorized personnel.
- Provided with Event Log: RCIM radio remote controls memorize all events that may have led to failures or unexpected stops, as well as the device operating hours.

OPTIONS

- Wide range of configurations available featuring the highest degree of customization.
- With or without Ple/SIL3/Cat4 safety level self-locking stop command with reset system to ensure the highest level of safety.

- Wide range of selectors, buttons, switches, potentiometers, mono and multi - axis joysticks (also Z axis).
- Control panel customization of the transmitter thanks to digital print technology by means of multicolor silk-screen printings, suitable for the user's needs and to allow the operator to identify quickly the different control groups.
- Response behaviour of the single joysticks adjustable directly via radio.
- Featuring DSC (Dynamic Speed Control) function for real time speed corrections (in slow mode) to allow the user to better manage complex micro-movements.
- Equipped with ergonomic belt and clip or belt attachment.
- Provided with fast battery charger and removableand rechargeable NiMH batteries, featuring a negligible memory effect and able to guarantee high durability in continous operation.
- PiTool available to interface the transmitter and the receiver units with a PC to set operating settings and collect diagnostic information.(RCIM AE and RCIM AC radio remote controls).

CERTIFICATIONS

- CE Marking.
- EAC, ACMA**, FCC**, IC**, KCC**, MIC** Certifications.
- Performance Level Category 4 PL e.

Manufactured by IMET Srl - Distributed by TER Tecno Elettrica Ravasi Srl.
* Temperatura radiocomandi RCIM ZE: da -25°C a +55°C.
** Not available on all versions.

WE CARE

RCIM AX

Pouch radio remote control designed for the exclusive use of forestry winches complying the standards which regulate the safety requirements of radio remote controls for forestry machines.
In the standard configuration RCIM AX is equipped with start button, 4 selectors / buttons and a **Ple/SIL3/Cat4 safety level stop mushroom.**
It's fully customizable on the base of the most specific user's requirements.

RCIM AE

Radio remote control station featuring compact and ergonomic design, made of extremely resistant shockproof material and suitable for the harshest environmental conditions.
Available with buttons, trigger and toggle switches and potentiometers (max. 32 ON/OFF commands).
It's equipped with a Ple/SIL3/Cat4 safety level stop mushroom.
Optional
• MTRS (Standard o Easy): system machting one receiver with many transmitters in "Tandem", "Triplet", "Take&Release", "Master&Slave" configuration or several transmitters to one or more receivers (each transmitter is able to select up to 8 single or groupped receivers).

RCIM AC

Radio remote control station featuring a very compact and ergonomic design, made of extremely resistant shockproof material and suitable for the harshest environmental conditions.
Available with buttons, trigger and toggle switches and potentiometers (max. 32 ON/OFF commands).

Optional
- MTRS (Standard o Easy): system machting one receiver with many transmitters in "Tandem", "Triplet", "Take&Release", "Master&Slave" configuration or several transmitters to one or more receivers (each transmitter is able to select up to 8 single or groupped receivers).

RCIM ZE

Radio remote control station rapresenting a synthesis of the best ergonomic and functional features.
Despite of its extremely compact overall dimensions, the control panel of RCIM ZE can host double-axis joysticks, selectors, buttons and potentiometers which make it suitable for every kind of machine (max. 56 comandi ON/OFF).
Optional
- TILT Sensor: device able to recognize unnatural inclination angles of the transmitting unit occurring in typical emergency situations.
- Wired remote control / serial cable: wired serial connection to the receiver available. The direct cable connection excludes the radio tranmission, overcoming any problem related to signal noise or to the use of the product in areas where radiofrequency is not permitted, or due to the exhaustion of the battery.
- KAPTA Card: wireless reader integrated with the transmitter and smart card matched to the receiver to pair a new transmitter to a receiver in few seconds without opening the units.
- Backlit panel: panel featuring a perfect readability in gloom or low-light situations.

RCIM Z2

Radio remote control station with ergonomic and functional features which which puts it at the top of its category.
Thanks to a mix of reliability and versatility, the RCIM Z2 radio remote control is a landmark in industries such as constructions, travelling cranes, eco-drainage and any other application in which dual-axis joysticks are the most convenient choice for managing handling operations.
The new handle and the side compartments to host further controls allow an high degree of customization to meet the specific needs of the users (max. 56 ON/OFF commands).
It's equipped with a Ple/SIL3/Cat4 safety level stop mushroom.

Optional
• Add Box Display: housing for additional commands of the transmitter (buttons, potentiometers, switches) or for a display or LEDs.
• MTRS (Standard o Easy): system machting one receiver with many transmitters in "Tandem", "Triplet", "Take&Release", "Master&Slave" configuration or several transmitters to one or more receivers (each transmitter is able to select up to 8 single or groupped receivers).
• TILT Sensor: device able to recognize unnatural inclination angles of the transmitting unit occurring in typical emergency situations.
• Wired remote control / serial cable: wired serial connection to the receiver available. The direct cable connection excludes the radio tranmission, overcoming any problem related to signal noise or to the use of the product in areas where radiofrequency is not permitted, or due to the exhaustion of the battery.
• PWM APT400 actuators: electro-hydraulic actuators to operate most hydraulic cranes equipped exclusively with manual commands. The system does not have to be welded to the push rods, it leaves the original machine configuration unaltered and the electro-hydraulic circuit is separated from the crane's system thanks to a dedicated electro-hydraulic control unit, thus preventing potential malfunctions caused by the sharing of the hydraulic circuit with the crane.
• Stroke extention kit: extention kit to extended the piston stroke up to ±20 mm (compared to the standard ±13 mm from the centre) available for specific needs.
• Kit adapter: specific flange kit to connect APT400 actuators directly to Walvoil SD6-SD8, Galtech and Parker manual proportional distributors.
• KAPTA Card: wireless reader integrated with the transmitter and smart card matched to the receiver to pair a new transmitter to a receiver in few seconds without opening the units.
• Backlit panel: panel featuring a perfect readability in gloom or low-light situations.

CERTIFICATIONS

Conformity to Community Directives	2006/42/CE Machinery Directive
	2014/30/UE Electromagnetic compatibility (EMC)
	2014/53/EU Radio Equipment Directive (RED)
Conformity to CE Standards	EN 17067 Forestry machinery - Safety requirements on radio remote controls
	EN 60529 Degrees of protection provided by enclosures
	EN 60204-32 Safety of machinery - Electrical equipment of machines - Requirements for hoisting machines
	EN 13557 Cranes - Controls and control stations
	EN ISO 13849-1 Safety of machinery - Safety-related parts of control systems - General principles for design
	EN 61326-3-1 Electrical equipment for measurement, control and laboratory use - EMC requirements - Immunity requirements for safety-related systems and for equipment intended to perform safety-related functions (functional safety) – General industrial applications
	EN 61000-6-2 Electromagnetic compatibility (EMC) - Part 6-2: Generic standards - Immunity standard for industrial environments
	EN 61000-6-3 Electromagnetic compatibility (EMC) - Part 6-3: Generic standards - Emission standard for residential, commercial and light-industrial environments
	EN 62368-1 Audio/video, information and communication technology equipment - Part 1: Safety requirements
	EN 62745 Safety of machinery - Requirements for cableless control systems of machinery
	EN 62479 Assessment of the compliance of low power electronic and electrical equipment with the basic restrictions related to human exposure to electromagnetic fields (10 MHz to 300 GHz)
	ETSI EN 300 220-1 Short Range Devices (SRD) operating in the frequency range 25 MHz to 1000 MHz - Technical characteristics and methods of measurement
	ETSI EN 300 220-2 Short Range Devices (SRD) operating in the frequency range 25 MHz to 1000 MHz; Harmonised Standard for access to radio spectrum for non specific radio equipment
	EN 300 328Wideband transmission systems - Data transmission equipment operating in the 2,4 GHz band - Harmonised Standard for access to radio spectrum
	EN 301 489-1 ElectroMagnetic Compatibility (EMC) standard for radio equipment and services - Common technical requirements - Harmonised Standard for ElectroMagnetic Compatibility
	EN 301 489-3 ElectroMagnetic Compatibility (EMC) standard for radio equipment and services - Specific conditions for Short-Range Devices (SRD) operating on frequencies between 9 kHz and 246 GHz - Harmonised Standard covering the essential requirements of article 3.1(b) of Directive 2014/53/EU
	EN 301 489-17 ElectroMagnetic Compatibility (EMC) standard for radio equipment and services - Specific conditions for Broadband Data Transmission Systems - Harmonised Standard for ElectroMagnetic Compatibility
Markings and homologations	CE EHI FC* ⊕* ⓚ* IC* ACMA*

* Not available on all versions.

TECHNICAL SPECIFICATIONS OF THE TRANSMITTER UNIT

Type	RCIM AX	RCIM AE	RCIM AC
Ambient temperature	Storage -40°C/+85°C		
	Operational -25°C/+55°C	Operational -25°C/+70°C	
IP protection degree	IP 65		
Max. number ON/OFF controls	-	32	
Max. number analog controls (optional)	-	8	
Number of service and safety controls	3 (Start, Clacson, Stop)		
1 STOP command	(GSS) PLe Category 4 (ISO 13849-1)	(ISO 13849-1:2006 6.2.7 architeture) PLe Category 4	(ISO 13849-1:2006 6.2.4 architeture) PLc Category 1
LEVER - BUTTON command	-	PLc Cat.2 (ISO 13849-1:6.2.5 architecture)	
Work frequency 1	I.S.M. Band 433.050-434.790 MHz Max. power: 1 mW e.r.p.	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	
Work frequency 2	I.S.M. Band 434.040-434.790 MHz Max. power: 10 mW e.r.p.	I.S.M. Band 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.	
Work frequency 3	2,4 GHz Max. power: 10mW e.r.p.	2,4 GHz, 16 channels	
Maximum operating distance	250 m	100 m	
Supply voltage	-	3,7 Vdc	
Absorption	-	~ 80 mA	
Max. supply power	-	0,3 W max	
Battery	NiMH 1,2V - 4300 mAh	NiMH 3,6 V - 2,2 A/h	
Battery autonomy at 20°C with charged and continuously operated battery	15 hours	~ 25 hours	
Low battery level advance warning time	~ 15 min		
Buzzer	Internal		
Radio transmission	Double		
Output calibration	-	Via proportional output calibration	
LEDs	Link TX, Link RX, Error code		
Housing material	Loaded nylon UL94 HB		

Type	RCIM ZE	RCIM Z2
Ambient temperature	Storage -40°C/+85°C	
	Operational -25°C/+70°C	
IP protection degree	IP 65	
Max. number ON/OFF controls	56	
Max. number analog controls (optional)	16 (19)	
Joystick controls UMFS = Unintended Movement From Standstill (varies depending on control configuration) (ISO 13849-1:2006 6.2.6 architecture)	Up to 16	
Number of service and safety controls	3 (Start, Clacson, Stop)	
1 STOP command	(ISO 13849-1:2006 6.2.7 architeture) PLe Category 4	
JOYSTICK command	PLd Cat.3 (ISO 13849-1:6.2.6 architecture)	
LEVER - BUTTON command	PLc Cat.2 (ISO 13849-1:6.2.5 architecture)	
Joystick specifications	Multiaxis - 15.000.000 operations max - long stroke levers with +/-40° tilting	
Work 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	
Work frequency 2	I.S.M. Band 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.	
Work frequency 3	2,4 GHz, 16 channels	
Maximum operating distance	100 m	
Supply voltage	3,6 Vdc	
Absorption	95 mA	
Max. supply power	0,35 W max	
Battery	NiMH 3,6 V - 2,2 A/h	
Battery autonomy at 20°C with charged and continuously operated battery	~ 22 hours	
Low battery level advance warning time	~ 15 min	
Buzzer	Internal	
Radio transmission	Double	
Output calibration	Via proportional output calibration	
LEDs	Link TX, Link RX, Error code	
Housing material	Loaded nylon UL94 HB	

TRANSMITTER UNITS OVERALL DIMENSIONS

RCIM AX
120 x 63,5 x 161,5 mm
~ 480 g

RCIM AE
143 x 80 x 143 mm
~ 667 g max

RCIM AC
143 x 80 x 143 mm
~ 667 g max

RCIM ZE
214 x 128 x 162 mm
~ 1030 g max

RCIM Z2
205 x 150 x 150 mm
con display 205 x 205 x 150 mm
~ 1450 g max

TECHNICAL SPECIFICATIONS OF THE RECEIVER UNITS

Type	H AC / H DC	L AC / L DC	S AC / S DC	M AC
Operational ambient temperature	-25°C/+70°C	-25°C/+60°C	-25°C/+60°C	-25°C/+70°C
IP protection degree	IP 66			IP 20
Power supply	H AC: 45-240 Vac (50-60 Hz)	L AC: 24-240 Vac (50-60 Hz)	S AC: 24 Vac (50-60 Hz) / 12÷30 Vdc (24-440 Vac [50-60 Hz] optional)	12÷30 Vdc / 24 Vac (50-60 Hz)
	H DC: 11÷30 Vdc e 24 Vac (50-60 Hz)	L DC: 11÷30 Vdc	S DC: 12÷30 Vac	-
Safety controls	Stop, Safety-Enable (up to 8)		Stop, Safety-Enable	
Generic commands	73 relays or MOSFET, 32 analog (PWM, current, voltage) (depending on the configuration)	16 relays or 20 MOSFET, 8 analog (PWM, current, voltage)	S AC: 14 relays (NO)	22 relays (18 NO and 4 NC / NO), 4 analog (Current, voltage)
	-	-	S-DC: Max 14 MOSFET (NO), 4 analog, 2 digital IN	-
Service commands	Start, Horn, Timed-Relay	L AC: Start, Horn	Start, Horn	
	-	L DC: Start, Horn, Timed-Relay	-	-
Stop command category (depending on the configuration)	PLe Cat 4, ISO 13849-1 6.2.7 architecture	PLe Cat 4, ISO 13849-1 6.2.7 architecture	PLe Cat 4, ISO 13849-1 6.2.7 architecture. PLc Cat 1, ISO 13849-1 6.2.3 architecture, (With ARES2 C and WAVE2 C)	PLe Cat 4, ISO 13849-1 6.2.7 architecture
Fieldbus	RS232 / RS485 (115200 Baud max) CAN_Bus (ID 11-29 bit) (1Mbit/s max) CANOpen (ID 11-29 bit) (1Mbit/s max)	RS232 / RS485 (115200 Baud max) CAN_Bus (ID 11-29 bit) (1Mbit/s max) CANOpen (ID 11-29 bit) (1Mbit/s max), Profinet, Ethernet IP	RS232 / RS485 (115200 Baud max) CAN_Bus (ID 11-29 bit) (1Mbit/s max) CANOpen (ID 11-29 bit) (1Mbit/s max)	RS232 / RS485 (115200 Baud max) CAN_Bus (ID 11-29 bit) (1Mbit/s max) CANOpen (ID 11-29 bit) (1Mbit/s max), Profinet, Ethernet IP
Integrated flashing light	-	-	Only AC type	-

RECEIVER UNITS OVERALL DIMENSIONS

H AC / H DC
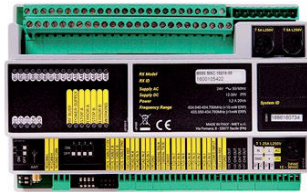205 x 130 x 280 mm
3500 g

AC

DC

S AC / S DC
127 x 147 x 70 mm
600 g

L AC / L DC
140 x 65 x 230 mm
1700 g

M AC
180 x 73 x 120 mm
900 g