Radio Remote Catalogue

2009

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IKUSI

TM70 Range

TM70

CHARACTERISTICS

- High sensitivity two step push buttons
- Available ISM bands: 433/870/915/419/447/918 MHz
- External and extractable SIM module (extractable EP70) to configure easily a spare transmitter providing easy and fast maintenance.
- NiMH rechargeable batteries
- Fast (< 2 hours)and intelligent CB70 battery charger
- Position selector switches with maintained position or forced return to 0 position (optional)
- Easy working frequency channel change and management by software and/or automatic working channel selection -LBT: Listen Before Talking-
- CAN bus physical layer compatible receiver with CANopen communication protocol; other available communication protocols, IQAN, SAE J1939, Profibus DP and RS-232 / RS-485
- LCD70 display option for feedback information. Warning and alarm signals management with feedback option, using the graphic display and/or the bicoloured leds. Feedback of digital and/or analogue signals to the machine/user's interface.
- LA70 range limiter (optional). Specified working area limit range under defined working conditions.

Radio Remote Control Systems with Handheld pushbutton Transmitters

1/2

>>> Receiver

>>> CB70 battery charger

>>> CB70 monoblock battery charger

TM70

MODEL	IKUSI REFERENCE	ISM BAND	ERP mW
TM70/1.13	3302260	870 MHz	5
TM70/1.21	3302270	870 MHz	5
TM70/2.13	3302280	870 MHz	5
TM70/2.21	3302290	870 MHz	5
FREQUENCY	**IKUSI REFERENCE**	**ISM BAND**	**ERP mW**
Standard B1	XXXXXXX	869,700-870,0000	5
Option B2	XXXXXXX-433	433,050-434,040	10
Option B3	XXXXXXX-433	434,040-434,790	1
Option B4	XXXXXXX-915	914,150-915,875	5
Option B5	XXXXXXX-419	418,950-419,250	10
Option B6	XXXXXXX-447	447,600-447,975	5
Option B7	XXXXXXX-918	918,000-919,725	5

TRANSMITTER TECHNICAL SPECIFICATIONS		
Type of transmitter	T70/1	T70/2
IP / NEMA ingress protection	IP65 / NEMA-4	IP65 / NEMA-4
Battery life	10h (50% duty cycle)	10h (50% duty cycle)
Operating temperature range	-20ºC +70ºC	-20ºC +70ºC
Number of pushbuttons (max.)	6	10
Weight (with battery)	460 g	550 g

RECEIVER TECHNICAL SPECIFICATIONS			
Type of receiver	R70/13	R70/21	R70/29
Power supply (AC)	48,115,230 Vac ± 10%; 50/60Hz		
Power supply (DC)	12 or 24Vdc		
Dimensions	285x200x110 mm		
Operating temperatura range	-20ºC +70ºC		
IP / NEMA ingress protection	IP65 / NEMA-4		
Consumption	12VA		28VA
Number of output commands	13	21	29
Auxiliary relays	START + STOP + SAFETY (KSAFETY)		
STOP function	Category 3 according to EN-954-1 or EN 13849 safety standards		
OUTPUT relays characteristics	230 Vac / 8A ACI		
STOP relays characteristics	230 Vac / 6A ACI		

BATTERY CHARGER TECHNICAL SPECIFICATIONS	
Power supply (AC)	115, 230 Vac ± 10%; 50/60Hz (depending on the model)
Power supply (DC)	10,5 - 35 Vdc
Charging mode	Fast (< 2 hours) and intelligent (charging mode adapted to the current battery charge and model)

BATTERY TECHNICAL SPECIFICATIONS	
Model	BT06K
Type	NiMH
Capacity	750 mAh, 4,8 V
Charging temperature range	0 to 40ºC


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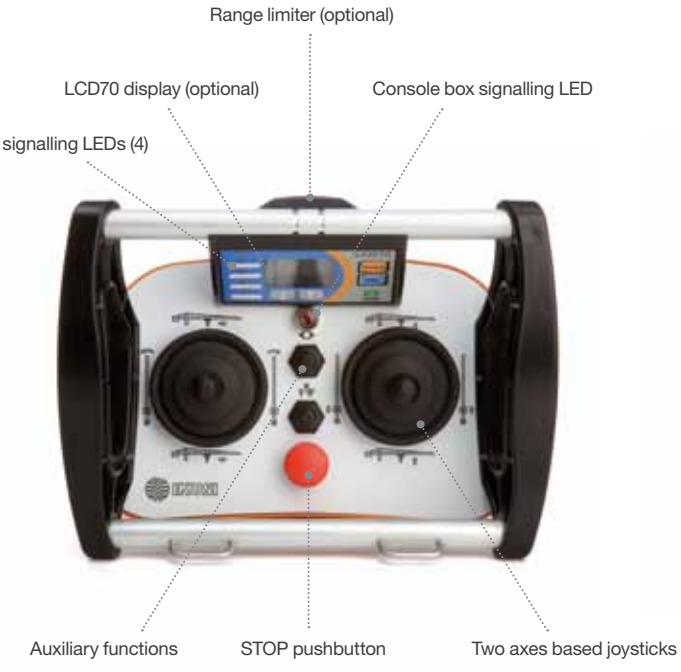
TM70



CHARACTERISTICS

- Available bands: 433/870/915/419/447/918 MHz
- NiMH rechargeable batteries
- Fast (< 2 hours) and intelligent CB70 battery charger
- Main mechanisms:
  - Two axes multi step or stepless joysticks configurations: opened and crossed.
- Auxiliary mechanisms:
  - 1-0-1 position selector switches with maintained position or forced return to 0 position
  - 0-1 position selector switches with maintained position or forced return to 0 position
  - 6, 16 and 24 positions binary and rotary switches
- Easy and fast working frequency channel change by software and/or automatic working channel selection -LBT: Listen Before Talking-
- CAN bus physical layer compatible receiver with CANopen communication protocol; other available communication protocols, IQAN, SAE J1939, Profibus DP and RS-232 / RS-485 (optional)
- LCD70 display option for feedback information. Warning and alarm signals management with feedback option, using the graphic display and/or the bicoloured leds. Feedback of digital and/or analogue signals to the machine/user's interface.
- LA70 range limiter (optional). Specified working area limit range under defined working conditions.

Radio Remote Control Systems with console box transmitters for hoisting machinery and mobile applications with On/Off and/or analogue control

3/4

>>> Transmitter

>>> CB70 monoblock battery charger

>>> CB70 battery charger

TM70

MODEL	IKUSI REFERENCE	ISM BAND	ERP mW
TM70/3.13	3302300	870 MHz	5
TM70/3.21	3302310	870 MHz	5
TM70/3.29	3302380	870 MHz	5
TM70/4.13	3302320	870 MHz	5
TM70/4.21	3302330	870 MHz	5
TM70/4.29	3302390	870 MHz	5
FREQUENCY	**IKUSI REFERENCE**	**MHz**	**ERP mW**
Standard B1	XXXXXXX-870	869,700-870,0000	5
Option B2	XXXXXXX-433	433,050-434,040	10
Option B3	XXXXXXX-433	434,040-434,790	1
Option B4	XXXXXXX-915	914,150-915,875	5
Option B5	XXXXXXX-419	418,950–419,250	10
Option B6	XXXXXXX-447	447,600-447,975	5
Option B7	XXXXXXX-918	918,000-919,725	5

TRANSMITTER TECHNICAL SPECIFICATIONS		
Transmitter type	T70/3	T70/4
Number of joysticks (max.)	2	3
Weight (with battery)	1650 g	1950 g
IP / NEMA ingress protection	IP65 / NEMA-4	
Battery life	16 h (50% duty cycle)	
Operating temperature range	-20ºC +70ºC	

RECEIVER TECHNICAL SPECIFICATIONS			
Type of receiver	R70/13	R70/21	R70/29
Power supply (AC) / LR70 (AC)	48,115,230 Vac ± 10%; 50/60Hz		
Power supply (DC) / LR70 (DC)	12 o 24Vdc		
Dimensions	285x200x110 mm		
Operating temperatura range	-20ºC +70ºC		
IP / NEMA ingress protection	IP65 / NEMA-4		
Consumption	12VA		28VA
Number of output commands –relays-	13	21	29
Auxiliary relays	START + STOP + SAFETY (KSAFETY)		
STOP function	Category 3 according to EN-954-1 or EN 13849 safety standards		
OUTPUT relays characteristics	230 Vac / 8A ACI		
STOP relays characteristics	230 Vac / 6A ACI		

BATTERY CHARGER TECHNICAL SPECIFICATIONS	
Power supply (AC)	115, 230 Vac ± 10%; 50/60Hz (depending on the model)
Power supply (DC)	10,5 - 35 Vdc
Charging mode	Fast and intelligent (charging mode adapted to battery model)

BATTERY TECHNICAL SPECIFICATIONS	
Model	BT20K
Type	NiMH
Capacity	2000 mAh, 4,8 V
Charging temperature range	0 to 40ºC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TM70

CHARACTERISTICS

- Available bands: 433/870/915/419/447/918 MHz
- NiMH rechargeable batteries
- Fast (< 2 hours) and intelligent (adapted to current charge an battery model) CB70 battery charger
- Main mechanisms:
  - Electrical two axis one step joystick -configu rations: opened and crossed-
- Auxiliary mechanisms:
  - 1-0-1 position selector switches with maintai- ned position or forced return to 0 position
  - 0-1 position selector switches with maintai- ned position or forced return to 0 position
  - 6, 16 and 24 positions binary and rotary switches
- Easy and fast working frequency channel change by software and/or automatic working channel selection –LBT / Listen Before Talking-
- CAN bus physical layer compatible receiver with CANopen communication protocol; other available communication protocols, IQAN, SAE J1939, Profibus DP and RS-232 / RS-485 (optional)
- LCD70 display option for feedback informa tion. Warning and alarm signals management with feedback option, using the graphic dis play and/or the bicoloured leds. Feedback of digital and/or analogue signals to the machi- ne/user's interface.
- LA70 range limiter (optional). Specified working area limit range under defined wor king conditions.

Radio Remote Control Systems with console box transmitter for concrete pumps

5/6

>>> Standard configuration

>>> Customized configuration

>>> CB70 monoblock battery charger

>>> CB70 battery charger

TM70

MODEL	IKUSI REFERENCES	ISM BAND	ERP mW
TM70/5.13	3302340	870 MHz	5
TM70/5.21	3302350	870 MHz	5
TM70/5.29	3302400	870 MHz	5
TM70/5.21	3302360	870 MHz	5
TM70/5.29	33023370	870 MHz	5
FRECUENCY	**IKUSI REFERENCES**	**MHz**	**ERP mW**
Standard B1	XXXXXXX	869,700-870,0000	5
Option B2	XXXXXXX-433	433,050-434,040	10
Option B3	XXXXXXX-433	434,040-434,790	1
Option B4	XXXXXXX-915	914,150-915,875	5
Option B5	XXXXXXX-419	418,950–419,250	10
Option B6	XXXXXXX-447	447,600-447,975	5
Option B7	XXXXXXX-918	918,000-919,725	5

TRANSMITTER TECHNICAL SPECIFICATIONS		
Type of transmitter	T70/5	T70/6
Number of joysticks (max.)	2	3
Weight (with battery)	1650 g	1950 g
IP / NEMA ingress protection	IP65 / NEMA-4	
Battery life	16 h (50% duty cycle)	
Operating temperature range	-20ºC +70ºC	

RECEIVER TECHNICAL SPECIFICATIONS			
Type of receiver	R70/13	R70/21	R70/29
Consumption	12VA		28VA
Number of output commands -relays-	13	21	29
Auxiliary relays	START + STOP + SAFETY (KSAFETY)		
STOP function	Category 3 according to EN-954-1 or EN 13849 safety standards		
OUTPUT relays characteristics	230 Vac / 8A ACI		
STOP relays characteristics	230 Vac / 6A ACI		
Power supply (AC) / LR70 (AC)	48,115,230 Vac ± 10%; 50/60Hz		
Power supply (DC) / LR70 (DC)	12 or 24Vdc		
Dimensions	285x200x110 mm		
Operating temperatura range	-20ºC +70ºC		
IP / NEMA ingress protection	IP65 / NEMA-4		

BATTERY CHARGER TECHNICAL SPECIFICATIONS	
Power supply (AC)	115, 230 Vac ± 10%; 50/60Hz (depending on the model)
Power supply (DC)	10,5 - 35 Vdc
Charging mode	Fast (< 2 hours) and intelligent -charging mode adapted to battery model-

BATTERY TECHNICAL SPECIFICATIONS	
Model	BT20K
Type	NiMH
Capacity	2000 mAh, 4,8 V
Charging temperature range	0 to 40ºC

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TM70

CHARACTERISTICS

- Available bands: 433/870/915/419/447/918 MHz
- NiMH rechargeable batteries
- Fast and intelligent CB70 battery charger
  Main mechanisms:
  - One axis analogue paddles
- Auxiliary mechanisms:
  - 1-0-1 position selector switches with maintained position or forced return to 0 position- 6, 16 and 24 positions binary and rotary switches
  - 0-1 position selectors switches with maintained position or forced return to 0 position
- Easy and fast working frequency channel change by software and/or automatic working channel selection (LBT: Listen before talking)
- CAN bus physical layer compatible receiver with CANopen communication protocol; other available communication protocols,
- IQAN, SAE J1939, Profibus DP and RS-232 / RS-485 (optional)
- LCD70 display option for feedback informa tion. Warning and alarm signals management with feedback option, using the graphic dis play and/or the bicoloured leds. Feedback of digital and/or analogue signals to the machine/user's interface.
- LA70 range limiter (optional). Specified working area limit range under defined wor king conditions.
  Tele-alignment option with radio link to adjust remotely receiver's analogue electronic cards –functional parameters- from the transmitter, providing on site and customized machines' response.

Radio Remote Control Systems with console box transmitters for mobile applications with analogue control

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>>> CB70 monoblock battery charger

>>> CB70 battery charger

TM70

MODEL	IKUSI REFERENCE	ISM BAND	ERP mW
TM70/7.13	3302410	870 MHz	5
TM70/7.21	3302420	870 MHz	5
TM70/7.29	3302430	870 MHz	5
TM70/8.13	3302440	870 MHz	5
TM70/8.21	3302460	870 MHz	5
TM70/8.29	3302470	870 MHz	5
FREQUENCES	**IKUSI REFERENCE**	**MHz**	**ERP mW**
Standard B1	XXXXXXX	869,700-870,0000	5
Option B2	XXXXXXX-433	433,050-434,040	10
Option B3	XXXXXXX-433	434,040-434,790	1
Option B4	XXXXXXX-915	914,150-915,875	5
Option B5	XXXXXXX-419	418,950-419,250	10
Option B6	XXXXXXX-447	447,600-447,975	5
Option B7	XXXXXXX-918	918,000-919,725	5

TRANSMITTER TECHNICAL SPECIFICATIONS		
Type of transmitter	T70/7	T70/8
Analogue paddles	6	8
Weight (with battery)	1650 g	1950 g
IP / NEMA ingress protection	IP65 / NEMA-4	
Battery life	16 h (50% duty cycle)	
Operating temperature range	-20°C +70°C	

RECEIVER TECHNICAL SPECIFICATIONS	
Type of receiver	R70/13 board + voltage and/or current output modules
Power supply (DC) / LR72 (DC)	12 or 24Vdc
Dimensions	285x200x110 mm
Operating temperature range	-20°C +70°C
Protection - watertightness rate	IP65
Number of output commands	13
Auxiliary relays	START + STOP + SAFETY (KSAFETY)
STOP function	Category 3 according to EN-954-1 or EN 13849 safety standards
OUTPUT relays characteristics	230 Vac / 8A ACI
Voltaje analogue output module A2VCAN	2 voltage analogue output (each module)
Current analogue output module A2ICAN	2 current analogue output (each module)
Maximun number of A2VCAN modules	4 modules -> 8 voltage analogue outputs
Maximun number of A2ICAN modules	4 modules -> 8 current analogue outputs
A2VCAN and A2ICAN module combinations	N x M (max=8)

BATTERY CHARGER TECHNICAL SPECIFICATIONS	
Power supply (AC)	115, 230 Vac ± 10%; 50/60Hz (depending on the model)
Power supply (DC)	10,5 - 35 Vdc
Charging mode	Fast (< 2 hours) and intelligent -charging mode adapted to battery model-

BATTERY TECHNICAL SPECIFICATIONS	
Model	BT20K
Type	NiMH
Capacity	2000 mAh, 4,8 V
Charging temperature range	0 to 40°C


7/8

TM70

>>> TM70 1/2 Transmitters

>>> TM70 3/4 Transmitters

>>> TM70 5/6 Transmitters

>>> TM70 7/8 Transmitters

CHARACTERISTICS

- The CAN receiver can be used and combined with all the TM70 range transmiters; T70/1, T70/2, T70/3, T70/4, T70/5, T70/6, T70/7 y T70/8 models.
- Communication protocols supported:
  - CAN open standar CIA DSK01
  - SAE J1939
  - IQAN
  - Profibus DP

Receptor RCAN

CAN

>>> CB70 monoblock battery charge

>>> CB70 battery charger

TM70

MODELOS	REF. IKUSI
Power supply / Maximun consumption	9-35v DC / 5W max.
Input – Output interfaces / Supported Communication Protocols	CAN physical layer supported protocols: • CAN Open standard (CIA DS401) • IQAN • SAE J1939 • Profibus DP
IP / NEMA ingress protection	IP67 / NEMA-6
Antenna	External: NEARSON S325TR-915 or compatible
Working channel selection	Automatic (LBT: listen before talking)
Weight	430 gr.
Dimensions	Lenght = 151mm / Wide = 129mm (160mm con PG) / Height = 61mm
EEPROM	Extractable EP70
Receiver status signalling	MultiLED: 7 external LED (6 green + 1 bicoloured) 2 internal LED (1 red + 1 green)
Conexions	Plug-in input/output terminals with M16 cable gland • Power supply cable gland: M16 / IP67 • Input / Output interface: M16 / IP67
STOP function	Category 3 according to EN-954-1 or EN 13849 safety standards 2 STOP relays: 250V / 6A máximum STOP function response time = 50 ms
CAN BUS termination (standard 120 Ohm)	ON / OFF (internal) jumper or terminal block
Passive STOP time	Programmable: between 0,5 seconds and 2 seconds for industrial hositing applications Max = 25,5 seconds (other applications)
Output protection	PTC fuse / 0,3A
Output protections (STOP relays)	VDR in contacts
Operating temperature range	-20ºC / +70ºC (-4ºF / 158ºF)
TM70 range supported transmitter models	T70/1/2; T70/3/4; T70/5/6; T70/7/8


CAN


IKUSI
TARA

TM70 ATEX

TM70

CHARACTERISTICS

- Available frequency bands: 870/918/MHz.
- BT06K-ATEX NiMH rechargeable batteries.
- New battery charger CB70, with fast (< 2 hours) and intelligent charging mode
- External and extractable SIM module (extractable EP70) to configure easily a spare transmitter providing easy and fast maintenance.
- Main mechanisms:
  - High sensitivity two step push buttons
- Auxiliary mechanisms:
  - 1-0-1 type position selector switches with maintained position or forced return to 0 position (optional)
  - 0-1 type position selector switches with maintained position or forced return to 0 position (optional)
- Easy working frequency channel change and management by software and/or auto matic working channel selection –LBT / Listen Before Talking-
- CAN bus physical layer compatible receiver with CANopen communication protocol; other available communication protocols, IQAN, SAE J1939, Profibus DP and RS-232 / RS-485

EUROPE: ZONES 0,1 & 2 / EExi EN 50020
IEC: Zones 1 & 2 / Exi IEC 60079-11
USA: Class 1 divisions 1 & 2 / UL 913

ATEX

>>> II 2 G D Ex ib IIB T4Ex ibD 21 T135°CTamb. : -20°C to +70°C
II 2 G D Ex d ia IIB T5Ex ibD 21 T135°CTamb. : -20°C to +70°C

>>> 0080
mmyynnnn (serial number : month, year, sequential number)
INERIS 08ATEX0006 (CE examination type certification number)
INERIS 08ATEX0029 (CE examination type certification number)

>>> TM 70 ATEX Receiver

TM70

ATEX TRANSMITTERS CHARACTERISTICS		
Transmitter types	T70/1 ATEX	T70/2 ATEX
Referencia	**Model**	
2800044	T70/1/870 ATEX Transmitter	
2800045	T70/2/870 ATEX Transmitter	
Technical characteristics		
IP / NEMA Ingress protection	IP65 / NEMA-4	
Battery life	>8h (50% duty cycle)	
Operating temperature range	-20ºC +70ºC	
Battery type / nominal charge	BT06K-ATEX / 500mAh	
Battery charger compatibility	BC70K o CB70	
Orange LED signalling	Replaced by double LED signalling (green + red)	
DLA (display and limit range option)	Not available	
Feedback information option	Not available	
Antenna	Internal	
SIM module –customized operating parameters-	Extractable EP70 EEPROM module	
Maximum number of maneuvres	6 + START + STOP	10 + START + STOP
Weight -including battery-	500 g	600 g
CB70 BATTERY CHARGER TECHNICAL CHARACTERISTICS		
(AC) Power supply	115, 230 Vac ± 10%; 50/60Hz (according to charger model)	
(DC) Power supply	10,5 – 35 Vdc	
Charging mode	Fast (< 2 hours) and intelligent (adapted to each battery model)	
BT06K-ATEX BATTERY TECHNICAL CHARACTERISTICS		
Model	BT06K-ATEX	
Type	NiMH	
Capacity	500 mAh, 4,8 V	
Charging/Discharging temperature range	0 - 70ºC	
RECEIVER TECHNICAL SPECIFICATIONS		
References	**Models**	
2305184	R70/13-ATEX	
2305185	R70/21-ATEX	
RECEIVER TECHNICAL CHARACTERISTICS		
Receiver types	R70/13 ATEX	R70/21 ATEX
(AC) power supply	48,115,230 Vac ± 10%; 50/60Hz	
(DC) power supply	12 or 24Vdc	
External	Length = 420mm / Width = 320mm / Heigth = 250mm	
Weight	20 Kgr.	
Antenna	External (internal antenna isolator included)	
Operating temperature range	-20ºC +70ºC	
IP / NEMA Ingress protection	IP65 / NEMA-4	
Consumption	12 VA	16VA
Number of outputs –relays-	13	21
Other additional outputs –relays-	START + STOP(2) + SECURITY (KSAFETY)	
STOP function	Category 3, according to EN-954-1 or EN 13849 safety standards	
Maneuvre relay characteristics	230 Vac / 8A ACI	
STOP relay characteristics	230 Vac / 6A ACI	

ATEX


RUN
ON
STOP
IKUSI

I-syon Range

I-syon

CHARACTERISTICS

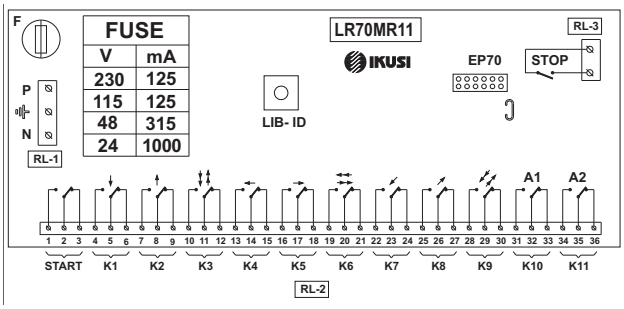
Radio remote system for hoisting applications -overhead cranes- NON COMPATIBLE with safety standard Cat.3 CE EN-954-1 or EN 13849. Available receiver power supplies (24-48-115 and 230v AC) with a maximum of 11 output relays.

- New tactile and high sensitivity keyboard.
- Slim dimensions and reduced weight.
- Ergonomic transmitter with one or two step pushbuttons.
- Automatic working channel selection.
- Auto ID teaching function.
- Remotely programmable receiver's outputs using the programmer module (radio remote programmer module).
- EP70 EEPROM or detachable SIM module compatibility (TM70 range), to backup or to restore system's configurations.

Radio remote system for hoisting applications

MR11

>>> R70MR11 Receiver



>>> Block diagram for receiver output

I-syon

MODELS	IKUSI's PART NUMBER
70ME903 TM70MR11-915-115-E	3302653
70ME802 TM70MR11-870-230-E	3302654
70ME402 TM70MR11-433-230-E	3302659
TRANSMITTER CHARACTERISTICS	**TECHNICAL SPECIFICATIONS**
Available frequency	
PART NUMBER 3302653	915MHz
PART NUMBER 3302654	870MHz
PART NUMBER 3302659	433MHz
RF Power (ERP)	< 1mW 915MHz / < 5mW 870MHz / < 10mW 433MHz
Modulation type	FSK a 4.800 bps y 7.200 bps
Protection	IP65 / NEMA-4
Channel bandwidth	25KHz
Number of IDs	64K per band
Response time	< 150ms
Antenna	Internal: printed circuit board integrated
Weight	180gr (without batteries)
Dimensions	Length = 160mm / Wide = 75mm / Height = 45mm
Non rechargeable (Alkaline) and rechargeable (NiMH) batteries	Alkaline type AA 1,5V 2600mAh (-10ºC / +50ºC) (14ºF / 122ºF) Commercial Range
	NiMH type AA 1,2V 1200mAh (-20ºC / +70ºC) (-4ºF / 158ºF) Industrial Range
Battery life	>12h (100% duty cycle) Alkaline 2600mAh
	>6h (100% duty cycle) NiMH 1200mAh
EEPROM	Internal / External EP70 -extractable-
Operating temperature range	-20ºC / +70ºC (-4ºF / 158ºF)
Signalling	1 bicoloured LED (RUN labelled)
Acoustic signalling	Internal buzzer
Number of functions	3 functions max. (2 steps) + 2 auxiliary functions (1 step) + ON/STOP function + START function.
RECEIVER CHARACTERISTICS	**TECHNICAL SPECIFICATIONS**
Available frequency	
PART NUMBER 3302653	915MHz
PART NUMBER 3302654	870MHz
PART NUMBER 3302659	433MHz
Power supply	
PART NUMBER 3302653	115V AC 50/60Hz (+20% / -30% Vin)
PART NUMBERS 3302654/3302659	230V AC 50/60Hz (+20% / -30% Vin)
Number of outputs / STOP function	111 relay outputs for hoisting applications. STOP function Category.2 EN-954-1 or EN 13849)
Protection	IP65 / NEMA-4
Antenna	Printed circuit board integrated (standard)
Working channel selection	Automatic at transmitters' start-up –by Eeprom set up-
Weight	980 grs.
Dimensions	Length = 205mm / Wide = 156mm / Height = 62mm
EEPROM	Internal / external EP70 –extractable-
Status signalling	MultiLED: 7 LED visible externally
Connexions	Plug-In terminals. Inputs/outputs with PG 21 (25 poles maximum) cable gland
Maximum current over resistive load	8A
Operating temperature range	-20ºC / +70ºC (-4ºF / 158ºF)

MR11

PROGRAMMABLE VALUES by EEPROM		
Parameter	**Default value**	**Range (programmable values)**
START (LLAVE SOFTWARE)	NO	See User's Manual
SEARCH MODE	OFF	ON, OFF. (SEARCH MODE)
TOUT LATENCY	4min	1 to 6min; steps of 1 min, and infinite ("INF" value) minutes. (Time to LATENCY state).
TOUT OFF	15min	10 to 20min step of 1 min, and infinite ("INF" value). (Time from LATENCY state to "Stand-by" state or "low consumption" mode).
TSTOP	2s	1 to 10sec.: steps of 0,1sec. (Passive STOP time)
OUTMODE	MOMENTARY	MOMENTARY or LATCHING (OUTPUTS: OPERATING MODES)
SOFTSTART	ON	ON or OFF (Enable or Disable soft start)
SOFTSTOP	ON	ON or OFF (Enable or Disable soft stop)
ACCELRAMP	0,1s	0,0sec, 0,1sec, 0,2sec, 0,3sec, 0,4sec, 0,5sec, 0,6sec, 0,8sec, 1,0sec, 1,2sec, 1,5sec, 1,7sec, 2.0sec, 2,5sec 3,5sec, 5.0sec (Ramp acceleration adjustment for each output)
DECELRAMP	0,1s	0,0sec, 0,1sec, 0,2sec, 0,3sec, 0,4sec, 0,5sec, 0,6sec, 0,8sec, 1,0sec, 1,2sec, 1,5sec, 1,7sec, 2.0sec, 2,5sec 3,5sec, 5.0sec (Ramp deceleration adjustment for each output)
PWM FREQ	300Hz	30Hz to 300Hz; Step = 10Hz. (R70MP10: PWM output frequency adjustment. Independent for each output).

DESCRIPCIÓN

Radio remote system for hoisting applications –overhead cranes- STOP function according with safety standard Cat.2 CE EN-954-1 or EN 13849. Also valid to use in AC powered installations and applications in which those maneouvres need to be managed or controlled by relays. Available receiver power supplies (24-48-155 and 230v AC) with a maximum of 11 output relays.

- New tactile and high sensitivity keyboard.
- Slim dimensions and reduced weight.
- Ergonomic transmitter with one or two step pushbuttons.
- Automatic working channel selection –by Eeprom setup-
- Auto ID teaching function.
- ID releasing function from the current transmitter or from a new transmitter.
- EP70 EEPROM or detachable SIM module compatibility -TM70 range- to backup or to restore system's configurations providing an easy and fast maintenance using a spare trasnmsitter.

I-syon

CHARACTERISTICS

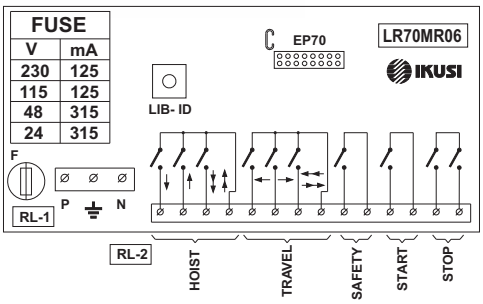
Radio remote system for hoisting applications -wired rope hoists and chain hoists- COMPATIBLE with safety standard Cat.3 CE EN-954-1 or EN 13849. Also valid to use in AC powered installations and applications in which those maneuvers need to be managed or controlled by relays. Available receiver power supplies (24-48-155 and 230v AC) with a maximum of 6 output relays.

- New tactile and high sensitivity keyboard.
- Slim dimensions and reduced weight.
- Ergonomic transmitter with one or two step pushbuttons.
- Automatic working channel slection.
- Auto ID teaching function and ID releasing function from the current transmitter or from a new transmitter.
- Remotely programmable receiver's outputs using the programmer module -radio remote programmer module-.
- EP70 EEPROM or detachable SIM module compatibility -TM70 range- to backup or to restore system's configurations.

Radio remote system for hoisting applications

MR06

>>> R70MR06 Receiver



>>> Block diagram for receiver output

I-syon

MODELS	IKUSI's PART NUMBER
70ME803 TM70MR06-870-230-E	3302655
70ME905 TM70MR06-915-115-2E	3302660
70ME403 TM70MR06C3-433-230-2E	3302662
70ME805 TM70MR06-870-48-2E	3302665
70ME405 TM70MR06C3-433-48-2E	3302668
70ME409 TM70MR06C1-419-48-2E	3302672
70ME410 TM70MR06C1-419-230-2E	3302673
TRANSMITTER CHARACTERISTICS	**TECHNICAL SPECIFICATIONS**
Available frequency. REF 3302655-3302665	870MHz
Available frequency. REF 3302660	915MHz
Available frequency. REF 3302662-3302668	433MHz
Available frequency. REF 3302672-3302673	419MHz
RF Power (ERP)	< 1mW 915MHz / < 5mW 870MHz / < 10mW 433MHz
Modulation type	FSK a 4.800 bps y 7.200 bps
Protection	IP65 / NEMA-4
Channel bandwidth / Number of IDs	25KHz / 64K per band
Response time	< 150ms
Antenna	Internal: printed circuit board integrated
Weight	180 gr (without batteries)
Dimensions	Length = 160mm / Wide = 75mm / Height = 45mm
Non rechargeable (Alkaline) and rechargeable (NiMH) batteries	Alkaline type AA 1,5V 2600mAh (-10°C / +50°C) (14°F / 122°F) Commercial Range
	NiMH type AA 1,2V 1200mAh (-20°C / +70°C) (-4°F / 158°F) Industrial Range
Battery life	>12h (100% duty cycle) Alkaline 2600mAh
	>6h (100% duty cycle) NiMH 1200mAh
EEPROM	Internal / External EP70 -optional-
Operating temperature range	-20°C / +70°C (-4°F / 158°F)
Signalling	1 bicoloured LED (RUN labelled)
Acoustic signalling	Internal buzzer
Number of functions	2 functions max. (2 steps) + ON/STOP function + START function
RECEIVER CHARACTERISTICS	**TECHNICAL SPECIFICATIONS**
Available frequency. REF 3302655-3302665	870MHz
Available frequency. REF 3302660	915MHz
Available frequency. REF 3302662-3302668	433MHz
Available frequency. REF 3302672-3302673	419MHz
Power supply. REF 3302660	115V AC 50/60Hz (+20% / -30% Vin)
Power supply. REF 3302655-3302662-3302673	230V AC 50/60Hz (+20% / -30% Vin)
Power supply. REF 3302665-3302668-3302672	48V AC 50/60Hz (+20% / -30% Vin)
Number of outputs / STOP function	6 relay outputs (3 Hoist / 3 Travel).Valid for CE hoisting applications / STOP function Category.3 accordjing with safety standards EN-954-1 or EN 13849)
Protection	IP65 / NEMA-4
Antenna	Printed circuit board integrated (standard)
Weight	640 grs.
Dimensions	Length = 151 mm / Wide = 129mm / Height = 61mm
EEPROM	Internal
Status signalling	MultiLED: 7 LED visible externally
Connexions	Plug-In terminals: inputs/outputs with PG16 / M20 model output cable gland.
Maximum current over resistive load	6A
Operating temperature range	-20°C / +70°C (-4°F / 158°F)

MR06

PROGRAMMABLE VALUES by EEPROM		
Parameter	**Default value**	**Range (programmable values)**
START (LLAVE SOFTWARE)	NO	See User's Manual
SEARCH MODE	OFF	ON, OFF. (SEARCH MODE)
TOUT LATENCY	4min	1 to 6min; steps of 1 min, and infinite ("INF" value) minutes. (Time to LATENCY state).
TOUT OFF	15min	10 to 20min step of 1 min, and infinite ("INF" value). (Time from LATENCY state to "Stand-by" state or "low consumption" mode).
TSTOP	2s	1 to 10sec.: steps of 0,1sec. (Passive STOP time)
OUTMODE	MOMENTARY	MOMENTARY or LATCHING (OUTPUTS: OPERATING MODES)
SOFTSTART	ON	ON or OFF (Enable or Disable soft start)
SOFTSTOP	ON	ON or OFF (Enable or Disable soft stop)
ACCELRAMP	0,1s	0,0sec, 0,1sec, 0,2sec, 0,3sec, 0,4sec, 0,5sec, 0,6sec, 0,8sec, 1,0sec, 1,2sec, 1,5sec, 1,7sec, 2.0sec, 2,5sec 3,5sec, 5.0sec (Ramp acceleration adjustment for each output)
DECELRAMP	0,1s	0,0sec, 0,1sec, 0,2sec, 0,3sec, 0,4sec, 0,5sec, 0,6sec, 0,8sec, 1,0sec, 1,2sec, 1,5sec, 1,7sec, 2.0sec, 2,5sec 3,5sec, 5.0sec (Ramp deceleration adjustment for each output)
PWM FREQ	300Hz	30Hz to 300Hz; Step = 10Hz. (R70MP10: PWM output frequency adjustment. Independent for each output).

DESCRIPCIÓN

Radio remote system for hoisting applications –wired rope hoists and chain hoists- compliant with safety STOP function according with standard Category.3 CE EN-954-1 or EN 13849. Also valid to use in AC powered installations and applications in which those maneuvers need to be managed or controlled by relays. Available receiver power supplies (24-48-155 and 230v AC) with a maximum of 6 output relays.

- New tactile and high sensitivity keyboard.
- Slim dimensions and reduced weight.
- Ergonomic transmitter with one or two step pushbuttons.
- Automatic working channel selection.- programmable by Eeprom setup-
- Auto ID teaching function
- ID releasing function from the current transmitter or from a new transmitter
- EP70 EEPROM or detachable SIM module compatibility -TM70 range- to backup or to restore system's configurations providing an easy and fast maintenance using a spare trasnmsitter

I-syon

CHARACTERISTICS

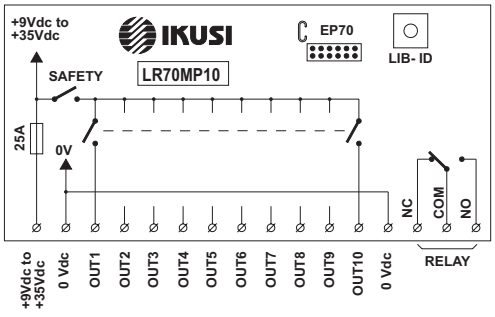
Radio remote control systems for mobile machinery or self-propelled systems. 12 and 24v DC power supply compatibility with 10 PWM outputs corresponding to 10 different functions.

- New tactile and high sensitivity keyboard.
- Slim dimensions and reduced weight.
- Automatic working channel selection.
- Auto ID teaching function and ID releasing function from the current transmitter or from a new transmitter.
- Remotely programmable receiver's outputs using the programmer module (radio remote programmer module).
- EP70 EEPROM or detachable SIM module compatibility (TM70 range), to backup or to restore system's configurations.

Radio remote control systems for mobile machinery

MP10G

>>> R70MP10 Receiver



>>> Block diagram for receiver output

I-syon

MODELS	IKUSI's PART NUMBER
70ME801 TM70MP10-870-G	3302650
70ME902 TM70MP10-915-G	3302652
70ME401 TM70MP10-433-G	3302657
TRANSMITTER CHARACTERISTICS	**TECHNICAL SPECIFICATIONS**
Available frequency	
PART NUMBERS 3302650 / 3302652 / 3302657	870MHz / 915MHz / 433MHz
RF Power (ERP)	< 1mW 915MHz / < 5mW 870MHz / < 10mW 433MHz
Modulation type	FSK 4800 bps and 7.200 bps
Protection	IP65 / NEMA-4
Channel bandwidth	25KHz
Number of IDs	64K per band
Response time	< 150ms
Working channel selection	Automatic at transmitters' start-up –by Eeprom setup-
Antenna	Printed circuit board integrated (standard)
Weight	180gr (without batteries)
Dimensions	Length = 160mm / Wide = 75mm / Height = 45mm
Non rechargeable (Alkaline) and rechargeable (NiMH) batteries	Alkaline type AA 1,5V 2600mAh (-10ºC / +50ºC) (14ºF / 122ºF) Commercial Range
	NiMH type AA 1,2V 1200mAh (-20ºC / +70ºC) (-4ºF / 158ºF) Industrial Range
Battery life	>12h (100% duty cycle) Alkaline 2600mAh
	>6h (100% duty cycle) NiMH 1200mAh
EEPROM	Internal / External EP70 -optional-
Operating temperature range	-20ºC / +70ºC (-4ºF / 158ºF)
Signalling	1 bicoloured LED (RUN labelled)
Acoustic signalling	Internal buzzer
Number of functions	10 functions max. (1 step) + ON/OFF function
RECEIVER CHARACTERISTICS	**TECHNICAL SPECIFICATIONS**
Available frequency	
PART NUMBERS 3302650 / 3302652 / 3302657	870MHz / 915MHz / 433MHz
Power supply	9-35V DC
Number of outputs	10 MOSFET (PWM)
Protection	IP65 / NEMA-4
Antenna	Printed circuit board integrated (standard)
Working channel selection	Automatic at transmitters' start-up
Weight	430 gr.
Dimensions	Length = 151mm / Wide = 129mm (160mm with PG) / Height = 61mm
EEPROM	Internal / External EP70 –extractable-
Status signalling	MultiLED: 7 LED visible externally
Connexions	Plug-In terminals: inputs/outputs with PG11 / M16 and PG16 / M20 cable glands
Maximum current per output	5A
Maximum current output (total)	15A
PWM outputs frequency range	30 - 300Hz
Output accuracy	16 bits (power supply range)
Electrical input protection	Fuse protected
Electrical output protections	Polarity inversion / Short-circuit
Operating temperature	-20ºC / +70ºC (-4ºF / 158ºF)
Disconnecting security	A MOSFET transistor connected with the positive value of the power supply provides security functions.

MP10G

PROGRAMMABLE VALUES		
Parámetro	**Valor por defecto**	**Rango (valores programables)**
START (LLAVE SOFTWARE)	NO	See User's Manual
SEARCH MODE	OFF	ON, OFF. (SEARCH MODE)
TOUT LATENCY	4min	1 to 6min; steps of 1 min, and infinite ("INF" value) minutes. (Time to LATENCY state)
TOUT OFF	15min	10 to 20min step of 1 min, and infinite ("INF" value). (Time from LATENCY state to "Stand-by" state or "low consumption" mode)
TSTOP	2s	1 to 10sec.: steps of 0,1sec. (Passive STOP time)
OUTMODE	MOMENTARY	MOMENTARY or LATCHING (OUTPUTS: OPERATING MODES)
SOFTSTART	ON	ON or OFF (Enable or Disable soft start)
SOFTSTOP	ON	ON or OFF (Enable or Disable soft stop)
ACCELRAMP	0,1s	0,0sec, 0,1sec, 0,2sec, 0,3sec, 0,4sec, 0,5sec, 0,6sec, 0,8sec, 1,0sec, 1,2sec, 1,5sec, 1,7sec, 2.0sec, 2,5sec 3,5sec, 5.0sec (Ramp acceleration adjustment for each output)
DECELRAMP	0,1s	0,0sec, 0,1sec, 0,2sec, 0,3sec, 0,4sec, 0,5sec, 0,6sec, 0,8sec, 1,0sec, 1,2sec, 1,5sec, 1,7sec, 2.0sec, 2,5sec 3,5sec, 5.0sec (Ramp deceleration adjustment for each output)
PWM FREQ	300Hz	30Hz to 300Hz; Step = 10Hz. (R70MP10: PWM output frequency adjustment. Independent for each output).

DESCRIPCIÓN

Radio remote control systems for mobile machinery or self-propelled systems. 12 and 24v DC power supply compatibility with 10 PWM outputs corresponding to 10 different functions.

- New tactile and high sensitivity keyboard.
- Slim dimensions and reduced weight.
- Ergonomic transmitter with one or two step pushbuttons.
- Automatic working channel selection –programmable by Eeprom setup-
- Auto ID teaching function.
- ID releasing function from the current transmitter or from a new transmitter.
- Programmable receiver's outputs –momentary and/or latched individually temporized response- using the AP70 Eeprom Recorder.
- EP70 EEPROM or detachable SIM module compatibility.(TM70 range), to backup or to restore system's configurations, providing an easy maintenance, for example using a new transmitter.

IKUSI worldwide

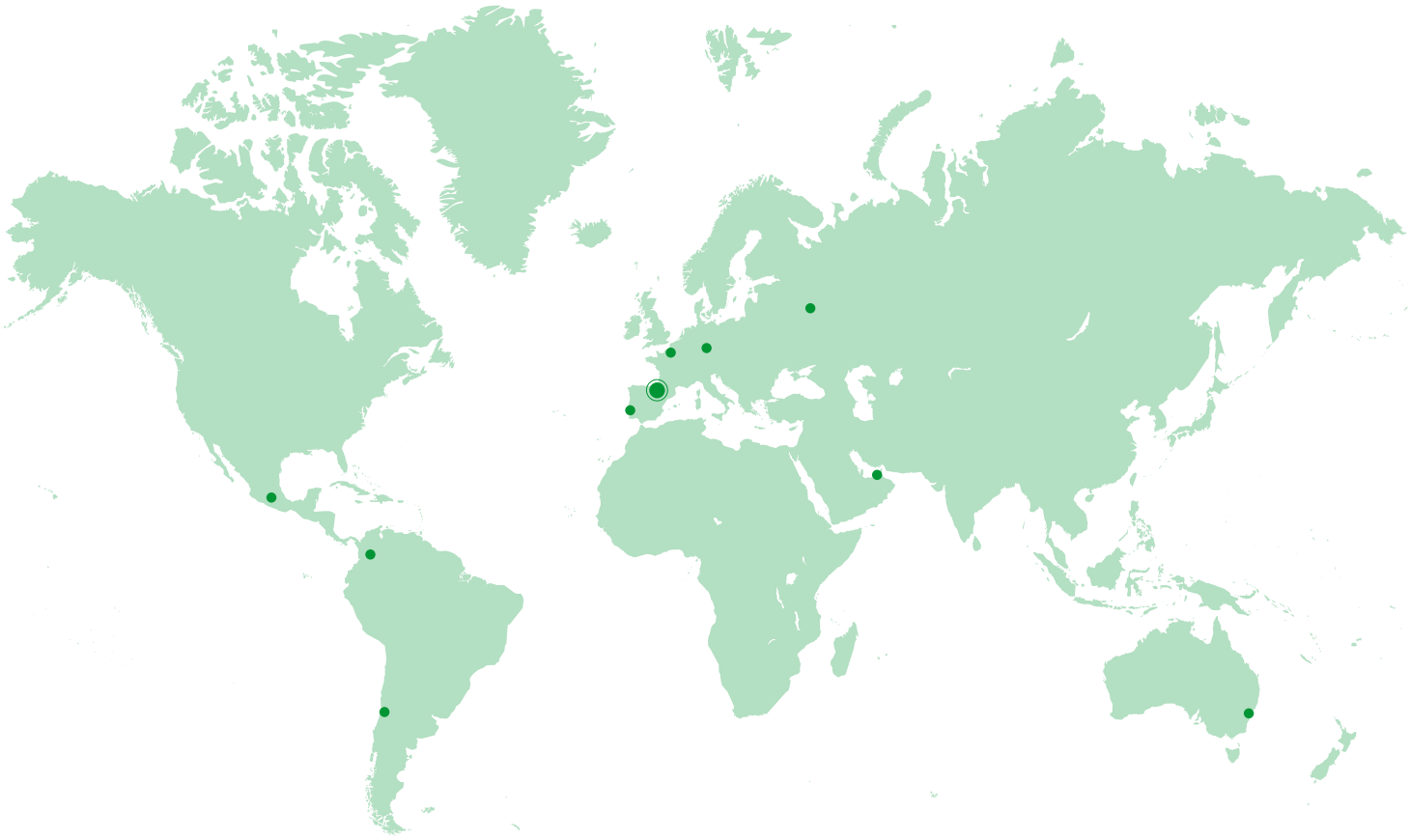
Ikusi Ángel Iglesias S.A. is one of the leading companies in the design, introduction and management of electronic systems. It is widely present on both the Spanish and international markets.

Its 18 work centres deal with the demand from its clients in over 80 countries and clearly reflect IKUSI's mission to be a global player on the electronic technologies market.

IKUSI dedicates 12% of its human resources to research and development. This ensures the company remains at the cutting edge of technology and can successfully operate in highly changing markets, by providing applications using the latest technologies to offer its clients state-of-the-art solutions.

IKUSI is a benchmark brand in the most demanding markets, whether in the field of research, design and manufacturing assistance, remote control and communications equipment, or designing, engineering, installing and subsequent maintenance of integrated systems for transport, energy, security and traffic control.

IKUSI develops client-orientated solutions, based on lasting mutual trust, and guarantees the highest commitment to service excellence.



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