# AIR

autec®

## AUTEC

AUTEC is a leading manufacturer of wireless control devices with safety functions used to remotely control self-propelled or fixed position operating machines in the construction, steel industries, maintenance and logistics in general. The development and production headquarters are in Vicenza, Italy, 100 km from the Venice airport hub. Other group companies are based in Germany, Spain, South Korea, China, USA, Canada and Brazil and provide technical, logistics and commercial support. AUTEC integrates the management of business processes, especially design and production, based on reliability, sturdiness and safety.

**400,000** WIRELESS SAFETY RADIO REMOTE CONTROLS FOR INDUSTRIAL APPLICATIONS WORLDWIDE SINCE 1986

**40** COUNTRIES WHERE AUTEC PRODUCTS ARE AVAILABLE

**33** YEARS OF EXPERIENCE IN THE DEVELOPMENT OF WIRELESS CONTROL SYSTEMS

**7** GROUP COMPANIES AND OVER 30 DISTRIBUTORS AND SERVICE CENTERS WORLDWIDE

## GLOBAL PRESENCE


# RADIO REMOTE CONTROLS

## FOR INDUSTRIAL LIFTING AND AUTOMATION

Remote controls of the AIR Series are ideal for automation, industrial lifting and both operational and self-propelled machinery.

### GENERAL FEATURES

- Connectivity through CANopen, PROFIBUS, PROFINET, EtherCAT®, EtherNet/IP™ and serial interfaces for the control and communication of data
- Suitable for multiple radiocontrol systems
- System configuration through navigation menu or PC software
- Data logger for recording of radio control operations

**Hamming distance**: ≥ 9
**Typical working range**: 75-100 m (240-330 ft)
**Protection degree**: IP65
**Working temperature range of transmitting units:** (-20°C) ÷ (+55°C) / (-4°F) ÷ (+130°F)
**Working temperature range of receiving units**: (-20°C) ÷ (+70°C) / (-4°F) ÷ (+158°F)
**Storage temperature of transmitting units**: (-40°C) ÷ (+70°C) / (-40°F) ÷ (+158°F)

### SAFETY

AUTEC designs and produces industrial remote controls with a level of safety that meets even the strictest of standards. The most important aspects of the remote control (functional, electrical, environmental, radio) reflect state-of-the-art technology for both control and communication. Radio frequency communication is made through a certified and "proprietary Autec" system. Each remote system uses its own unique code which cannot be reproduced.

- **STOP Function** classified **up to PL e**, in accordance with EN ISO 13849-1 and **SIL 3** in accordance with EN IEC 62061.

For some models of the AIR Series it **has been certified by TÜV Rheinland.**

### RADIO COMMUNICATION

The system of data transmission and control is bi-directional, dual-band and is configurable by the user:

- with automatic frequency search at system start-up (434 MHz, 64 channels / 915 MHz, 256 channels);
- with automatic search through FHSS - Frequency Hopping Spread Spectrum (870 MHz, 128 channels / 915 MHz, 256 channels).

### CONFIGURABILITY

One of the greatest strengths of the AIR Series is its configurability. Each receiver can be paired with any transmitter in the series, according to the needs of the specific applications and radio communication type used. In this way it is possible to adapt to complex working situations, including the use of multiple machines, maintaining both high reliability and safety. Thanks to the wide configurability of available actuators and displays, the transmitting units can adapt to many application requirements. In addition receivers can be configured with optional boards into the expansion slots, that allow to optimize the output interface with respect to the function required by the machine.

## MULTIPLE SYSTEMS

AUTEC's AIR Series can also offer solutions for multi-unit systems; that is, for remote systems that involve either more than one receiver or transmitter.

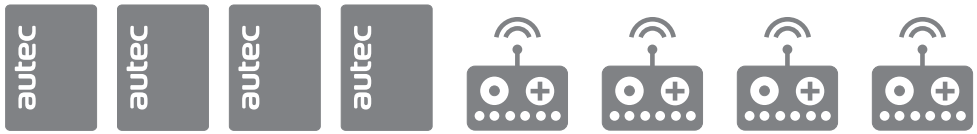
### MULTI-TRANSMITTING SYSTEMS


The multi-transmitter (or Take&Release) system consists of several portable transmitting units (up to 15) with which several operators can remotely control the machine, and a receiving unit installed on the machine itself. The receiving unit can be controlled by all the transmitting units, but only one at a time (independently and exclusively).

### MULTI-RECEIVING SYSTEMS


A multi-receiving system consists of a portable transmitting unit that the operator can use to control one machine or more, and several receiving units installed on the machines themselves. The number of receiving units depends on the work application where it is used. If the transmitter loses the radio link with even just one of the receiving units, it will stop working with all the others as well.

### MULTI-UNIT SYSTEMS




A multi-unit system consists of several portable transmitting units (2 to 4) that several operators can use to remotely control one or more machines and several receiving units (2 to 4) installed on the machines. The receiving units can be controlled by one transmitting unit or more, but only one at a time (independently and exclusively).

# HANDHELDS

The AIR Series **hand-held** transmitters are light, compact and robust solutions, equipped with multi-function pushbuttons and a navigation menu to optimize functionality and settings according to the requested application.

They are available in two versions:

- **with internal Li-Ion battery** (A4, A6, A8) rechargeable through Docking Station;
- **with two extractable external Li-Ion batteries** (A4B, A6B, A8B), battery charger and power key switch kit for start-up which comes standard.

In both versions there is an "ID internal tx memory", which contains the unique and univocal address of the radio remote control along with the information that defines its mode of use. They can be combined with any AIR Series receiving unit.


**A4 / A4B** **A6 / A6B** **A8 / A8B** **INTERNAL BATTERY** **EXTERNAL BATTERY**

## MAIN FEATURES

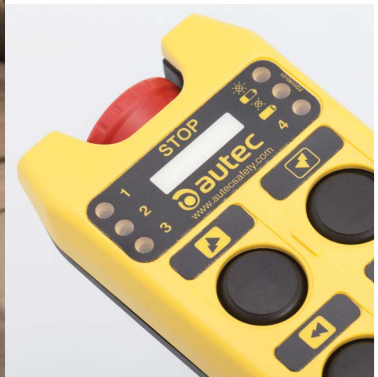
- Dual-band radio with automatic frequency search at start-up (434/915 MHz)
- STOP function up to PL d (according to EN ISO 13849-1)
- Suitable for Multiple Systems
- Multi-function commands (latching, momentary, switch "1, 1+2, 2";" 1/2")
- Work area 75-100 meters (240-330 ft)
- 4 data feedback LEDs to display machine status
- Data logger for recording of remote control operations
- PIN start-up: prevents unauthorized use
- CAN Communication and serial ports
- Autonomy with full battery at 20°C (68°F):
  40 h with internal Li-ion battery (A4, A6, A8)
  16 h with external Li-ion battery (A4B, A6B, A8B)

## STANDARD ACCESSORIES

- Pouch with belt
- Battery charger or Docking Station for recharge

## OPTIONS

- Nest can be mounted to a wall to keep the unit safe when not in use



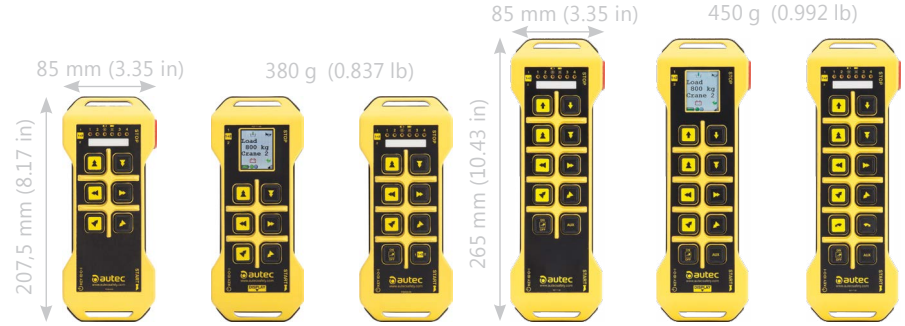


# LK NEO

LK NEO is a highly configurable pushbutton transmitting unit that can be used for the remote control of tower cranes, overhead cranes, hydraulic machines and countless other mobile applications.

This product open a wide range of functionalities inside the AIR Series technology, thanks to many available options and to a dual band radio with automatic search of free channel in **FHSS** (Frequency Hopping Spread Spectrum) at 870/915 MHz. The **STOP function is classified up to PL e, SIL 3** (according to EN ISO 13849-1/EN IEC 62061).
LK NEO has 4 LEDs for visualization of machine status and data logger for recording of remote control operations.

It is available with 6, 8, 10 and 12 pushbuttons. In addition, there are 2 other versions (6 or 10 buttons) with a **customizable 1.8'' color display**. This pushbutton can also be used for multiple radio control solutions (multi-transmitters, multi-receivers).




LK NEO 6 | LK NEO 6DF | LK NEO 8 | LK NEO 10 | LK NEO 10DF | LK NEO 12

## MAIN FEATURES

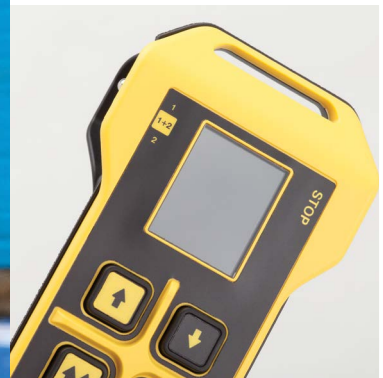
- Dual-band FHSS Radio with automatic frequency search (870/915 MHz)
- STOP function up to PL e, SIL 3 (according to EN ISO 13849-1/EN IEC 62061)
- Suitable for Multiple Systems
- Work area 100 meters (330 ft)
- Customizable labeling
- Data logger for recording of remote control operations
- Autonomy with full battery at 20°C (68°F):
  >16 h with Li-ion battery without display
  >10 h with Li-ion battery and 1.8'' display
  >8 h with NiMH battery

## STANDARD ACCESSORIES

- Pouch with belt
- Extractable NiMH or Li-Ion battery with charger

## OPTIONS

- Dual-band radio (434/915 MHz)
- Removable power keyswitch: magnetic M-Key or Key ID 0-1
- IR Sensor
- Zero-G Sensor
- 1.8" color display (with 6 or 10-button versions)
- Vibration alarm (only for display version)
- "Enabling switch"
- "Enabling&STOP"
- Cable Control
- Potentiometer
- Rotary Switch
- Toggle Switch
- Pull-to-operate Switch
- Side button
- Removable Mechanical Key





# LK NEO EX


The LK NEO EX pushbutton transmitting unit is a product **suitable for use in environments with the risk of explosion**, such as petrochemical or heavy industry.

The transmitter, available with 8 or 12 pushbuttons, **complies with both the ATEX Directive 2014/34/UE (zone 0/20 or zone 2/22) and the IECEx certification scheme (zone 0/20)**. It can be combined with any receiving unit in the AIR Series provided that the receiver is placed outside explosion-risk area. As an alternative, it is possible to supply an ACRM15 receiving unit inside an explosion-proof enclosure.


**LK NEO 8 EX** **LK NEO 12 EX**

**ZONE 0/20**

| |
|---|
| ATEX marking<br>for LK NEO 8 EX and LK NEO 12 EX |
| ATEX II 1G Ex ia IIC T5 Ga Tamb: -20/+50°C |
| ATEX II 1D Ex ia IIIC T100°C Da Tamb: -20/+50°C |
| IEC Ex marking<br>for LK NEO 8 EX and LK NEO 12 EX |
| Ex ia IIC T5 Ga Tamb: -20/+50°C |
| Ex ia IIIC T100°C Da Tamb: -20/+50°C |

**ZONE 2/22**

| |
|---|
| ATEX marking<br>for LK NEO 8 EX and LK NEO 12 EX |
| ATEX II 3G Ex ic IIC T5 Gc Tamb: -20/+50°C |
| ATEX II 3D Ex ic IIIC T100°C Dc Tamb: -20/+50°C |

## MAIN FEATURES

- Automatic frequency search at start-up (434MHz)
- STOP function up to PL d (according to EN ISO 13849-1)
- Li-Ion battery can be extracted inside the area of risk
- Work area up to 100 m
- Extractable code Key ID 0-1
- Customizable labeling of front panel
- Data log for the recording of remote control operations

## STANDARD ACCESSORIES

- Shoulder strap, suited for use in areas with risk of explosion

## OPTIONS

- Rotary Switch
- Side button

## ENCLOSURE FOR ACRM15 RECEIVER

The ACRM15 can be provided inside an enclosure with the following marking:

| |
|---|
| II 2 GD |
| Ex d IIB+H2 T5 Gb |
| Ex tb IIIC T100°C Db |
| Tamb: -20/+60°C IP66 |


# SIDEKICK

The SIDEKICK transmitting unit is safe, reliable and compact. It was conceived by AUTEC for applications with a limited number of actuators.

The unit has a **dual band radio** with automatic search of free channel in **FHSS** (Frequency Hopping Spread Spectrum) at 870/915 MHz and is very portable thanks to an ergonomic design, extremely reduced weight and an inclined control panel.

The **STOP function is classified up to PL e**, according to EN ISO 13849-1. SIDEKICK has 4 LEDs for visualization of machine status and a data logger for the recording of the commands sequences operated by the remote control. It can also be used for **multiple radio control solutions** (multi-transmitters, multi-receivers).


**SK4**

## MAIN FEATURES

- Dual-band FHSS Radio with automatic frequency search (870/915 MHz)
- STOP function up to PL e, SIL 3 (according to EN ISO 13849-1/EN IEC 62061)
- Sensor that intervenes in case of non-movement, inclination, impact, bump or fall of the transmitting unit
- 4 data feedback LEDs to display machine status
- Data logger for recording of remote control operations
- PIN start-up: prevents unauthorized use
- CAN communication and serial ports
- ID internal tx memory
- Autonomy with full battery at 20°C (68°F): > 16 h with Li-ion battery

## STANDARD ACCESSORIES

- Waist Belt
- Cable with USB connector and AC power or car jack, to recharge the Li-Ion internal battery

## OPTIONS

- Pre-disposition actuator for emergency calls and intermittent brake (for forestry applications)
- Can be used while charging

# COMPACT


COMPACT is a portable unit for the remote control of machinery in multiple industries.

With a highly reliable radio link and compliance to functional safety requirements this "compact" belt and harness transmitter is suited for use in demanding environments. Studied with an **ergonomic shape** to prevent involuntary activations and issues due to external interference during operation, its functional-area is optimized for a comfortable and easy access/grip of the actuators on top and sides. The top-frame integrate comfortable rubber handles and a **TFT 2.8" color display**.

In all configurations mechanical and chemical resistance is granted as well as IP65 and 1.5m fall.


1.8 kg (3.9 lb)


**AJC**

## MAIN FEATURES

- Dual-band FHSS Radio with automatic frequency search (870/915 MHz)
- STOP function up to PL e, SIL 3 (according to EN ISO 13849-1/EN IEC 62061)
- Suitable for Multiple Systems
- Removable power keyswitch: magnetic M-Key or Key ID 0-1
- Work area up to 100 meters (330 ft), even with obstacles
- Customizable labeling
- Visualization of machine status with either 4 or 16 LED lights
- Data logger for recording of remote control operations
- Autonomy with full battery at 20°C (68°F):
  24 h with Li-ion battery without display
  10 h with Li-ion battery and 2.8'' display
  12 h with NiMH battery

## STANDARD ACCESSORIES

- Shoulder strap or waist belt
- Extractable NiMH or Li-Ion battery and charger

## OPTIONS

- Cable Control
- Zero-G Sensor
- IR Sensor
- External Buzzer
- 2.8'' TFT LCD graphic display (240x320 pixel, 65536 colors)
- 32 LEDs
- Removable Mechanical key

# CURVE


CURVE AJQ is a joystick transmitting unit that can house up to 3 multi-axis joysticks. Thanks to the AIR Series technology, it's ideal for the remote control of overhead cranes, boat trailers, compactor presses, gantry cranes and many other applications, in single or multiple-unit configurations.

CURVE has a **FHSS bi-directional radio** with a frequency band of 870 / 915 MHz. A data feedback function provides the user with important machine status information on an **optional customizable 2.8" color TFT LCD graphic display**.


**AJQ**

## MAIN FEATURES

- Dual-band FHSS Radio with automatic frequency search (870/915 MHz)
- STOP function up to PL e, SIL 3 (according to EN ISO 13849-1/EN IEC 62061)
- Suitable for Multiple Systems
- Removable power keyswitch: magnetic M-Key or Key ID 0-1
- Work area up to 100 meters (330 ft), even with obstacles
- Customizable labeling
- Visualization of the machine status via 4 LEDs
- Data logger for recording of the remote control operations
- Autonomy with full battery at 20°C (68°F):
  24 h with Li-ion battery without display
  10 h with Li-ion battery and 2.8'' display
  12 h with NiMH battery

## STANDARD ACCESSORIES

- Waist belt
- Extractable NiMH or Li-Ion battery and charger

## OPTIONS

- Cable Control
- Zero-G Sensor
- IR Sensor
- External Buzzer
- 2.8'' TFT LCD graphic display (240x320 pixel, 65536 colors)
- 32 LEDs
- Removable Mechanical key


# AJR

AJR is a joystick transmitter unit that can house 1-3 joysticks (both digital and proportional) and numerous actuators and optional parts. Typical applications include bridge cranes, boat trailers, compactor presses, gantry cranes. It can also be used in multiple systems.

AJR has a **bi-directional radio** with automatic frequency search at start-up (434/915 MHz). The data feedback function provides the user with important information about the machine status on an **optional monochrome 2.7'' display** that can be customized.


2 kg (4.40 lb)


**AJR**

## MAIN FEATURES

- Dual-band radio with automatic frequency search at start-up (434/915 MHz)
- STOP function up to PL d (according with EN ISO 13849-1)
- Suitable for Multiple Systems
- Removable power keyswitch Key ID 0-1
- Work area up to 100 meters (330 ft)
- Customizable labeling
- Visualization of the machine status via 4 or 16 LEDs
- Data logger for recording of the remote control operations
- Autonomy with full battery at 20°C (68°F):
  40 h with Li-ion battery without display
  20 h with Li-ion battery and 2.7'' display
  20 h with NiMH battery

## STANDARD ACCESSORIES

- Shoulder strap or waist belt
- Extractable NiMH or Li-Ion battery and charger

## OPTIONS

- Cable Control
- Zero-G Sensor
- IR Sensor
- External Buzzer
- 2.7'' LCD transflective graphic display
- 4.3'' TFT LCD graphic display (480x272 pixel, 65536 colors)
- Removable Mechanical key




# AJM

AJM is a joystick transmitter unit that can house 1-3 joysticks (both digital and proportional) and numerous actuators and optional parts. Typical applications include bridge cranes, boat trailers, compactor presses, gantry cranes. It can also be used in multiple systems.

AJM has a **bi-directional radio** with automatic frequency search at start-up (434/915 MHz). The data feedback function provides the user with important information about the machine status on an **optional monochrome 2.7'' display** that can be customized.



2.5 kg (5.5 lb)

**AJM**

## MAIN FEATURES

- Dual-band radio with automatic frequency search at start-up (434/915 MHz)
- STOP function up to PL d (according with EN ISO 13849-1)
- Suitable for Multiple Systems
- Removable power keyswitch Key ID 0-1
- Work area up to 100 meters (330 ft)
- Visualization of the machine status via 4 or 16 LEDs
- Data logger for recording of the remote control operations
- Autonomy with full battery at 20°C (68°F):
  40 h with Li-ion battery without display
  20 h with Li-ion battery and 2.7'' display
  20 h with NiMH battery

## STANDARD ACCESSORIES

- Shoulder strap or waist belt
- Extractable NiMH or Li-Ion battery and charger

## OPTIONS

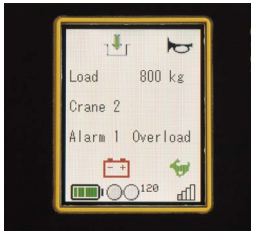
- Cable Control
- Zero-G Sensor
- IR Sensor
- External Buzzer
- 2.7'' LCD transflective graphic display
- 4.3'' TFT LCD graphic display (480x272 pixel, 65536 colors)
- Removable Mechanical Key



# DISPLAY

Thanks to bi-directional communication, always active, the information related to the status of the machine can be transmitted from the receiving unit to the transmitting unit and displayed on 4 LEDs and/or high-efficiency displays with 16 LEDs.

LK NEO offers a **1.8'' color display** as an option on its 6 or 10 pushbutton versions; while joystick transmitting units offer a display range from **2.7'' monochrome transflective** to the most recent **2.8'' or 4.3'' color displays**, that is CODESYS programmable. Notifications can appear as icons, descriptions or measures, depending on the preferences set.





## 1.8'' COLOR DISPLAY

- 16 color version
- 128 x 160 pixels
- For 6 & 10-pushbutton LK NEO versions
- Customizable reporting and icons
- Can be used both indoors and outdoors

## 2.8'' COLOR DISPLAY

- 65536 color version
- 256 x 128 pixels
- For AJC and AJQ
- Customizable reporting and icons
- Can be used both indoors and outdoors
- 16 LEDs

## 2.7'' TRANSFLECTIVE DISPLAY

- Monochrome version
- 128 x 64 pixels
- For AJR and AJM
- Customizable reporting and icons
- 16 LEDs

## 4.3'' COLOR DISPLAY

## MAIN FEATURES

- Easy to read even in very sunny conditions
- Viewing angle of display up to 130°
- CODESYS V3.5 programmable via Ethernet in accordance with IEC 61131-3
- 6 keys on the top for navigation on display and/or special functions
- 8 inputs
- 6 outputs in Source Mode
- 11 outputs in Sink Mode
- Operating temperature: -25°C to +55°C
- Storage temperature: -40°C to +85°C
- 3-axis accelerometer
- Customizable screens
- For AJR and AJM

## ELECTRONICS

The internal electronics include a 2 GB Data Memory.

## MECHANICS

The display is installed at the top of the transmitting unit. The anti-glare scratch-proof plexiglas screen is encased in a plastic structure with an IP65 protection degree.

## GRAPHIC

- 480x272 pixel resolution, 16:9
- Brightness 500 cd/m$^2$
- Up to 65536 colors
- 16 LEDs indicating correct functioning of machine and any warnings

# RECEIVING UNITS

## HACRP8


Receiving unit with AC power supply (up to 400 VAC). With 7 programmable relays + START & STOP. Dedicated output for the enabling of commands. Integrated signal lights. Horn signal also an available option. Internal antenna.

**Power supply**:
45-400 VAC
**Maximum number of outputs**:
7 on/off + START and STOP
**Rated load of STOP/Safety contacts**:
4A (250 VAC)
**Commands rated current**:
4A (250 VAC)

**Connecting interfaces**: cable gland or 10-pin reduced plug
**Max. dimensions**:
144x162x73 mm
(5.67x6.38x2.87 in)
**Weight**:
650 g (1.43 lb)

## MVRCAN


Receiving unit with AC/DC power supply. I/O serial CANopen 2.0. Has 4 programmable relays + STOP. External antenna.

**Power supply**:
12-24 VDC/24 VAC
**Maximum number of outputs**:
4 on/off + START and STOP
**Rated load of STOP/Safety contacts**:
6A (30 VDC)
**Commands rated current**:
4A (30 VDC)

**Connecting interfaces**: 10-pin reduced plug or two M8 connectors
**Max. dimensions**:
144x162x85 mm
(5.67x6.38x3.35 in)
**Weight**:
650 g (1.43 lb)

## ACRDIN/MVRDIN


AUTEC DIN RAIL is a receiving unit designed for installation inside the electric box of a machine. It consists of at least one CPU MODULE and one POWER SUPPLY MODULE. Thanks to its modular design, up to 4 EXPANSION MODULES can be added, each of which can host up to two optional boards. AC / DC power and external antenna. Installation of receiving unit by hooking DIN guide to rail. The product was made to satisfy even the most severe standards for vibration, has up to 71 configurable on/off outputs, plus START and STOP and supports interfaces: RS-232/485, CANopen, Profibus DP, PROFINET, EtherCAT® and EtherNet / IP ™.

**Power supply**:
ACRDIN: 24-230 VAC
MVRDIN 12-24 VDC / 24 VAC
**Maximum number of outputs**:
71 on/off + START and STOP
**Rated load of STOP/Safety contacts**:
4A (250 VAC) / 4A (30 VDC)
**Number of EXPANSION MODULES**:
up to 4

**Connecting interfaces**: terminal blocks
**Max. dimensions**:
319.80x127.41x96.20 mm
(12.59x5.01x3.79 in)
**Weight**:
CPU MODULE: 315 g (0.70 lb)
EXPANSION MODULE: 240 g (0.53 lb)
POWER SUPPLY MODULE
(ACRDIN): 250 g (0.55 lb)
(MVRDIN): 270 g (0.60 lb)

## ACRS13-G/L


Receiving unit with AC power supply. With 12 programmable relays + START and STOP with either internal or optional external antenna. The ACRS13-G receiver is equipped with a replaceable power module and 4 inputs for Data Feedback, while the ACRS13-L is equipped with a fixed integrated power supply circuit.

**Power supply**:
45-230 VAC
**Maximum number of outputs**:
12 on/off + START and STOP
**Rated load of STOP/Safety contacts**:
4A (250 VAC)
**Commands rated current**:
6A (250 VAC)

**Connecting interfaces**:
cable gland
**Max. dimensions**:
123x258x83 mm
(4.84x10.16x3.27 in)
**Weight**:
1.2 kg (2.7 lb)

## DCRS13


Receiving unit with DC power supply. With 12 programmable relays + START and STOP and with an internal or optional external antenna. Unit includes 4 inputs for Data Feedback.

**Power supply**:
12-24 VDC
**Maximum number of outputs**:
12 on/off + START and STOP
**Rated load of STOP/Safety contacts**:
4A (250 VAC)
**Commands rated current**:
6A (250 VAC)

**Connecting interfaces**: cable gland or 16-pin reduced plug
**Max. dimensions**:
123x258x83 mm
(4.84x10.16x3.27 in)
**Weight**:
1.2 kg (2.7 lb)

## ACRM15


Receiving unit with AC power supply. With 14 programmable relays + START and STOP, internal antenna standard or optional external antenna, 4 inputs for Data Feedback. 2 expansion slots are available for programmable relay boards, voltage/current analog output boards, digital and/ or analog input boards, variable resisistive output boards, sync boards between receivers (Synchro), RS-232/485, CANopen, Profibus DP, PROFINET, EtherCAT® and EtherNet / IP ™ serial communication port boards.

**Power supply**:
45-230 VAC
**Maximum number of outputs**:
30 on/off + START and STOP
**Rated load of STOP/Safety contacts**:
4A (250 VAC)
**Commands rated current**:
6A (250 VAC)

**Connecting interfaces**: cable gland or 24-pin plug or 32-pin reduced plug
**Max. dimensions**:
287x185x105 mm
(11.30x7.28x4.13 in)
**Weight**:
2.2 kg (4.9 lb)

## DCRM24


Receiving unit with DC power supply. With 21 programmable MOSFET digital outputs + 2 relays + START and STOP, internal antenna standard or optional external antenna, 8 inputs for Data Feedback. 2 expansion slots are available for programmable relay boards, voltage/current analog output boards, digital and/ or analog input boards, variable resistive output boards, sync boards between receivers (Synchro), RS-232/485, CANopen, Profibus DP, PROFINET, EtherCAT® and EtherNet / IP ™ serial communication port boards.

**Power supply**:
12-24 VDC
**Maximum number of outputs**:
39 on/off + START and STOP
**Rated load of STOP/Safety contacts**:
6A (30 VDC) STOP
10A (30 VDC) Safety
**Commands rated current**:
4A (30 VDC) solid state
10A (30 VDC) relay

**Connecting interfaces**:
cable gland or 24-pin plug or 32-pin reduced plug
**Max. dimensions**:
287x185x105 mm
(11.30x7.28x4.13 in)
**Weight**:
2.2 kg (4.9 lb)

## ACRM5E


Receiving unit with AC power supply. With a number and type of configurable outputs, internal antenna standard or optional external antenna, 16 inputs for Data Feedback. 5 expansion slots are available for programmable relay boards, voltage/current analog output boards, digital and/ or analog input boards, variable resistive output boards, sync boards between receivers (Synchro), RS-232/485, CANopen, Profibus DP, PROFINET, EtherCAT® and EtherNet / IP ™ serial communication port boards.

**Power supply**:
24-230 VAC
**Maximum number of outputs**:
40 on/off + START and STOP
**Rated load of STOP/Safety contacts**:
6A (250 VAC) STOP
10A (250 VAC) Safety
**Commands rated current**:
6 / 10 A (250 VAC)

**Connecting interfaces**: cable gland or 32-pin reduced plug or 50-pin plug
**Max. dimensions**:
287x185x105 mm
(11.30x7.28x4.13 in)
**Weight**:
2.2 kg (4.9 lb)

## MVRL9E


Receiving unit with AC/DC power supply. Comes with a number and type of configurable outputs, internal antenna standard or optional external antenna, 16 inputs for Data Feedback. 9 expansion slots are available for programmable relay boards, voltage/current analog output boards, digital and/ or analog input boards, variable resistive output boards, sync boards between receivers (Synchro), RS-232/485, CANopen, Profibus DP, PROFINET, EtherCAT® and EtherNet / IP ™ serial communication port boards.

**Power supply**:
24-230 VAC
12-24 VDC
**Maximum number of outputs**:
71 on/off + START and STOP
**Rated load of STOP/Safety contacts**:
6A (250 VAC) STOP
10A (250 VAC) Safety
**Commands rated current**:
6 / 10 A (250 VAC)

**Connecting interfaces**:
cable gland or 32-pin reduced plug or 50-pin plug
**Max. dimensions**:
348x250x110 mm
(13.70x9.84x4.33 in)
**Weight**:
4.5 kg (9.92 lb)

# OPTIONAL BOARDS

**AirRIR05A / AirDIR05A**
- 5 relays, contacts 10A, 250 VAC N.O. / N.C.
- Connector with spring terminals
- AirRIR05A for ACRM15, DCRM24, ACRM5E, MVRL9E
- AirDIR05A for ACRDIN, MVRDIN.

**AirRIR08A / AirDIR08A**
- 8 relays, 6A contacts, 250 VAC N.O.
- Connector with spring terminals
- AirRIR08A for ACRM15, DCRM24, ACRM5E, MVRL9E
- AirDIR08A for ACRDIN, MVRDIN.

**AirRIR08G / AirDIR08G**
- 8 relays, contacts for low load switching 1A, 250 VAC N.O.
- AirRIR08G for ACRM15, DCRM24, ACRM5E, MVRL9E
- AirDIR08G for ACRDIN, MVRDIN.

**AirRIV06A / AirDIV06A**
- 6 analog outputs - voltage (0÷10 V, -10 +10 V) or current-loop (0÷20 mA)
- Removable memory card for easy replacement
- Set up of the parameters is remote-programmable or through micro SD
- AirRIV06A for ACRM15, DCRM24, ACRM5E, MVRL9E
- AirDIV06A for ACRDIN, MVRDIN.

**AirRIC06A / AirDIC06A**
- 12 analog outputs - PWM (0÷2 A)
- Removable memory card for easy replacement
- Set up of the parameters is remote-programmable or through micro SD
- AirRIC06A for ACRM15, DCRM24, ACRM5E, MVRL9E
- AirDIC06A for ACRDIN, MVRDIN.

**AirRID06A / AirDID06A**
- 6 adjustable analog outputs - voltage (0÷28 V)
- Removable memory card for easy replacement
- Set up of the parameters is remote-programmable or through micro SD
- AirRID06A for ACRM15, DCRM24, ACRM5E, MVRL9E
- AirDID06A for ACRDIN, MVRDIN.

**AirRIAMIA / AirDIAMIA**
- 4 analog inputs (0÷10 VDC or 0.20 mA), load cells, pulse counter and RS 232/485 serial interface
- Removable memory card for easy replacement
- Set up of the parameters is remote-programmable or through micro SD
- AirRIAMIA for ACRM15, DCRM24, ACRM5E, MVRL9E
- AirDIAMIA for ACRDIN, MVRDIN.

**AirRIP01A / AirDIP01A**
- Board with variable resistive output (0÷10 kΩ)
- AirRIP01A for ACRM15, DCRM24, ACRM5E, MVRL9E
- AirDIP01A for ACRDIN, MVRDIN.

**AirRISYNA**
- Synchro interface board between multi-receivers
- Depending on its programming and the electrical state of the digital inputs of selected receivers, this card can condition the outputs of the receiving units
- Removable memory card for easy replacement
- Set up of the parameters is remote-programmable or through micro SD
- For ACRM5E, MVRL9E, ACRDIN, MVRDIN.

**AirRIPRFA / AirDIPRFA**
- PROFIBUS DP interface board
- AirRIPRFA for ACRM15, DCRM24, ACRM5E, MVRL9E
- AirDIPRFA for ACRDIN, MVRDIN.

**AirRICANB / AirDICANB**
- CANopen 2.0 A interface board
- Removable memory card for easy replacement
- Can also be programmed to communicate with a customized CANopen
- AirRICANB for ACRM15, DCRM24, ACRM5E, MVRL9E
- AirDICANB for ACRDIN, MVRDIN.

**AirRIPRFN / AirDIPRFN**
- PROFINET IO interface board
- Supports PROFINET-RT and IRT (specific 2.3)
- Supports re-mapping of process data
- Connection with 2 x RJ45 or 2 x M8
- GSD file of device description
- AirRIPRFN for ACRM15, DCRM24, ACRM5E, MVRL9E
- AirDIPRFN for ACRDIN, MVRDIN.

**AirRIETHC / AirDIETHC**
- EtherCAT interface board (slave interface)
- Supports re-mapping of process data
- Connection with 2 x RJ45 or 2 x M8
- ESI file of device description
- AirRIETHC for ACRM15, DCRM24, ACRM5E, MVRL9E
- AirDIETHC for ACRDIN, MVRDIN.

**AirRIETHN / AirDIETHN**
- EtherNet/IP™ interface board (slave interface) Supports re-mapping of process data
- Connection with 2 x RJ45 or 2 x M8
- EDS file of device description
- AirRIETHN for ACRM15, DCRM24, ACRM5E, MVRL9E
- AirDIETHN for ACRDIN, MVRDIN.

# BATTERIES AND BATTERY CHARGERS

LMP00 BATTERY
for A4B, A6B, A8B

- Li-Ion
- 3.7 V
- 660 mAh
- 2.44 Wh


BATTERY CHARGER ULC05V
for LMP00

- Power supply: 5VDC
- IP 30
- 70x113.5x30 mm
  (2.76x4.47x1.18 in)

MHM03 BATTERY
for LK NEO

- NiMH
- 3.6 V
- 500 mAh
- 1.8 Wh


BATTERY CHARGER UMC12V
for MHM03 e LMP01

- Power supply: 12-24 VDC
- IP 30
- 70x113.5x30 mm
  (2.76x4.47x1.18 in)

LMP01 BATTERY
for LK NEO

- Li-Ion
- 3.7 V
- 1300 mAh
- 4.81 Wh

MBM06MH BATTERY
for joystick
transmitting units

- NiMH
- 7.2 V
- 750 mAh
- 5.4 Wh


BATTERY CHARGER MBC12V
for MBM06MH

- Power supply: 12-24 VDC
- IP 30
- 70x113.5x39.5 mm
  (2.76x4.47x1.56 in)

LPM02 BATTERY
for joystick
transmitting units

- Li-Ion
- 7.4 V
- 1400 mAh
- 10.36 Wh


BATTERY CHARGER ULC932A
for LPM02

- Power supply: 12-24 VDC
- IP 30
- 70x113.5x39.5 mm
  (2.76x4.47x1.56 in)

LPM04 BATTERY
for joystick
transmitting units
with 4.3'' display

- Li-Ion
- 7.4 V
- 2800 mAh
- 20.72 Wh


BATTERY CHARGER ULC932B
for LPM04

- Power supply: 12-24 VDC
- IP 30
- 76x135x53 mm
  (2.99x5.31x2.08 in)

# INFRARED SYSTEM

Radio communication cannot be limited to specific areas. **The area of use of a remote control can be limited** by installing an infrared system. The main functions that can be combined with this system are:

- start-up of a machine only within the area covered by the sensor (IR START-UP, pic.1)
- start-up of a machine and use of a remote control only within the area covered by the sensor (IR RANGE LIMITING, pic.2)
- enabling of a specific movement (IR COMMAND ENABLE, pic.3)

There are many fields of application, ranging from industrial lifting to automation and mobile machines.


pic.1 pic.2 pic.3

The infrared system is an optional component of the radio remote control, and is made up of two parts:

- a fixed, powered part on the machine, that emits an infrared beam (**illuminator**)
- a part fitted on the transmitting unit, to capture the infrared beam (**sensor**).

# ZERO-G SENSOR

Zero-G Sensor may act for one or more of the following causes:

- **Impact, thrown, rolling:** Zero-G Sensor activates when the transmitting unit impacts with a movement or in case it is thrown or rolled;
- **Fall:** Zero-G Sensor activates when the transmitting unit falls from higher than 1 meter;
- **Tilt:** Zero-G Sensor activates when the transmitting unit is tilted at a defined angle to the ground.

# CABLE CONTROL

Cable Control is available as an option. It connects the transmitting unit via cable to the receiving unit by replacing the radioelectric link and it's used:

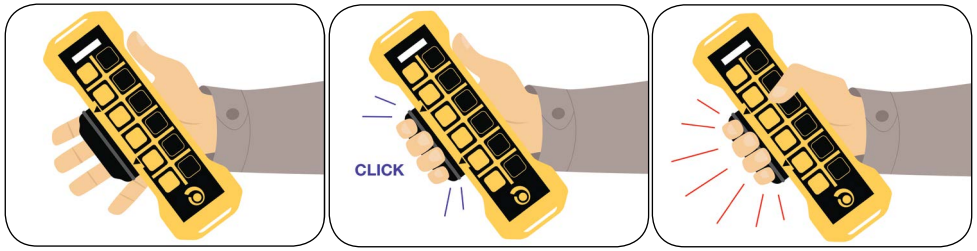
- in particular working conditions established by the Machine Manufacturer;
- when it is not possible to establish a radio link between radio remote control units;
- when working in environments where using radio frequencies is not allowed or is dangerous;
- when a battery is not available.

# ENABLING SWITCH

The "Enabling switch" is used if **all or some of the radio remote control functions need to be enabled**, only if the button is deliberately held in the intermediate position by the operator (pic.2). The protected controls cannot be used via the "Enabling switch" if the button is in the other two positions, i.e. firmly pressed (pic.3) or fully released (pic.1). This allows the operator to **limit the use / functions of the radio controlled machine**. A typical field of use is the world of automation, where the operator has to bypass the guards in order to approach the machine and check it is working properly or make the necessary settings.

# ENABLING&STOP

The "Enabling&Stop" is used if **the radio remote control needs to be enabled / started safely**. The radio remote control can only start/control the machine if the relative 3-position button is deliberately held in the intermediate position by the operator (pic.2). If the button is in the other two positions, i.e. firmly pressed (pic.3) or fully released (pic.1), the machine cannot be started/controlled. This allows the operator to **stop the machine** not only when necessary, but also **in conditions of panic, reckless behaviour, voltage, electric shock**. A typical field of use is the world of automation, where the operator has to bypass the guards in order to approach the machine and check it is working properly or make the necessary settings. The "Enabling&Stop" is a safety function that meets the "PL d" requisites of EN ISO 13849-1.




pic.1 pic.2 pic.3

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**Made in Italy**

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