

## Safety

Autec designs and manufactures certified industrial radio remote controls whose safety level meets the strictest standards. All of the radio remote control peculiar aspects (functional, electrical, environmental, radio) reflect the current state of the art of control and communication technology for "Safety Critical" applications. For the customer, the use of certified radio remote controls is a guarantee that safety, quality and reliability have been tested and checked by a competent, recognised and independent third party.

Most of the Dynamic series' models are certified by TÜV Süddeutschland\* (No. Z10110520186027) according to the EN ISO 13849-1 and the EN IEC 62061:

- PL e, cat. 4 / SIL 3 for the protection of the Stop circuit;

- PL d, cat. 3 / SIL 2 d for the protection against unintended movements of the actuators from their resting position.

Radio frequency communication is made via a "proprietary Autec system", certified and suitable for "Safety Critical" applications. Each radio remote control uses a code that is unique (different from all the others) and univocal (not reproducible).

## Reliability

All the electronic and mechanical parts are designed, manufactured and tested to resist heavy duty usage in extreme working conditions: temperatures from -25°C/-40°C to +55°C/+85°C, shocks and vibrations, chemical exposure (i.e. oils, varnishes and diluents), electromagnetic disturbance, dust and water (IP65).

100% of our radio remote controls are subject to functional tests in climatic chambers, carried out with testing instruments that ensure that construction specifications are respected.



DIMENSIONS  
153x148x55 mm

WEIGHT  
~ 500 g



DIMENSIONS  
194x210x61 mm

WEIGHT  
~ 850 g



DIMENSIONS  
202x230x96 mm

WEIGHT  
~ 2 kg

CRS receiving unit

ARS receiving unit

ARM receiving unit

**CRS receiving unit:** DC power supply. Optimised for integration in a CAN/CANopen network. Provides a maximum of 12 analogue and 64 on/off functions.

**ARS receiving unit:** DC power supply. Analogue outputs are managed through a voltage/current-driven mother board; communication via CAN/CANopen interface is also available. Provides a maximum of 6 analogue and 32 on/off functions. Digital and serial inputs are available.

**ARM receiving unit:** DC power supply. Analogue outputs are managed through a voltage- or current-driven mother board; communication via CAN/CANopen interface is also available. Provides a maximum of 12 analogue and 64 on/off functions. Digital, analogue and serial inputs are available. 32- or 72-pole output plug.

Safety functions of all receiving units are available on redundant solid-state outputs and through CAN messages.

## Technical data

General	
Frequency band	863-870 MHz (256 channels) / 915 MHz (260 channels) / 447 MHz (32 channels)
Hamming distance	≥ 15
Typical operating range	100 m
Safety category for the Stop protection (EN ISO 13849-1 / EN IEC 62061)	PL e, cat. 4 / SIL 3
Safety category for the protection against unintended movements from standstill UMFS (EN ISO 13849-1 / EN IEC 62061)	PL d, cat. 3 / SIL 2
Radio communication	bidirectional, with automatic and dynamic selection of a free channel
Typical response time for Stop command and commands	< 80 ms
Protection degree	IP65
CAN interface	CAN/CANopen
Transmitting Unit	
Power supply (NiMH)	7.2 Vdc
Autonomy with fully charged battery (continuous use at 20°C)	11 hours
Autonomy with fully charged battery (continuous use at 20°C) - Data Feedback	9.5 hours
Operating and storage temperature	(-25°C)-(+55°C) / (-40°C)-(+85°C)
Low battery warning time	3.5 minutes
CRS receiving unit	
Power supply	8-30 Vdc
Operating and storage temperature	(-25°C)-(+70°C) / (-40°C)-(+85°C)
Number of functions	max. 12 analogue; max. 64 on/off
ARS receiving unit	
Power supply	8-30 Vdc
Operating and storage temperature	(-25°C)-(+70°C) / (-40°C)-(+85°C)
Number of functions	max. 6 analogue; max. 32 on/off
ARM receiving unit	
Power supply	8-30 Vdc
Operating and storage temperature	(-25°C)-(+70°C) / (-40°C)-(+85°C)
Number of functions	max. 12 analogue; max. 64 on/off

Products comply with the R&TTE Directive (99/05/EC), the LVD Directive (2006/95/EC) and the Machinery Directive (2006/42/EC), as applicable



# solutions for Mobile Hydraulics

**DYNAMIC  
SERIES**



**Autec remote control systems keep your people safe in challenging environments**

**autec**  
safety remote control



Via Pomaroli, 65 - 36030 Caldogno (VI) - ITALY  
Phone +39.0444.901000 - Fax +39.0444.901011  
info@autecsafety.com - www.autecsafety.com

Cert. UNI EN ISO 9001:2008 No. 50 100 2877 - Rev. 03  
Design, manufacture and service of remote control systems for safety industrial application

DYNAMIC DEPLIANT ENG\_4\_05/12

**autec**  
safety remote control

*Proven protection for your people*



## New generation radio remote controls

The new FJS, FJL, FJM and FJR joystick controllers have been designed for mobile hydraulic applications and offer proportional and digital commands with Data Feedback function, with information displayed on a graphic display. The standard version has 8 proportional and 15 on/off commands, which can be performed at the same time; the systems are highly customisable and programmable, thus enabling function extension up to 12 proportional and 64 on/off commands for the most complex applications. Commands can be programmed so as to obtain working logic functions that meet our customers' specific needs.

All models satisfy the strictest safety standards, exceeding and anticipating the requirements of current regulations: the Stop protection safety function fulfils the requirements of PL e, cat. 4 / SIL 3 (according to the EN ISO 13849-1 and the EN IEC 62061) and the protection against unintended movements of the actuators from their resting position (UMFS) fulfils the requirements of PL d, cat. 3 / SIL 2 (according to the EN ISO 13849-1 and the EN IEC 62061).

## FSA technology (Flex Safe Architecture)

The FSA technology is used in the whole Dynamic series and performs new generation features: bi-directional communication, dynamic and intelligent search for a free channel on a wide frequency band. Thanks to the new radio module, radio remote controls constantly and automatically scan the working frequency band and move to a free frequency, many times per second, without interruption for the remote controlled machine. The new communication protocols ensure paramount resistance to interference, even when working in "crowded" environments with many radio devices. The whole series has been designed to allow a lot of configuration options of both transmitting and receiving units, in order to meet the needs of countless applications.



## FJM, tailor made solutions

While the whole Dynamic series offers the chance to customise the systems, configurability is definitely a strong point for the FJM transmitting unit. It offers in fact the widest range of commands, thus resulting suitable for complex applications and special machines with several functions (i.e. aerial work platforms, harbour and offshore cranes, drilling machines, recycling machines...) Furthermore, a large graphic display can be mounted on this unit, where icons, measurements or descriptions coming from the controlled machine are displayed.

## Display

Thanks to the two-way radio communication, all transmitting units in the Dynamic series can display messages and measurements coming from the controlled machine on graphic displays and/or through high performance LEDs.

A 1.54" display is mounted on FJS and FJL transmitting units, whereas the FJR and FJM units may also mount a 2.7" display; this is optimised for indoor or outdoor use. In both cases, information appears as icons, descriptions or measurements, depending on the desired settings.

Display visualisation examples:



## Gallery

**FJS transmitting units:** versions with two single- or dual-axis joysticks; up to 7 actuators plus Start and Stop may be added.

**FJL transmitting units:** versions with 4 or 6 proportional levers; up to 6 actuators plus Start and Stop may be added.

**FJR transmitting units:** customisable versions; up to 6 joysticks and a large number of actuators may be mounted.

**FJM transmitting units:** customisable versions; up to 8 joysticks and a large number of actuators may be mounted.

## FJS



DIMENSIONS: 258x170x126 mm  
WEIGHT (including battery): ~ 1.3 kg



## FJR



DIMENSIONS: 260x200x190 mm  
WEIGHT (including battery): ~ 2 kg



## FJL



DIMENSIONS: 221x170x134 mm  
WEIGHT (including battery): ~ 1.4 kg



## FJM



DIMENSIONS: 310x210x190 mm  
WEIGHT (including battery): ~ 2.5 kg



When particular situations occur (i.e. during maintenance operations, or when working in places where radio-frequency communication is not allowed), a cable control unit may be used in place of the radio remote control. The cable control is easily connected by simply plugging the cable in its proper connector in the receiving and transmitting units.