

ENGINEERING  
TOMORROW

*Danfoss*

# PLUS+1<sup>®</sup> remote controls catalog





PLUS **E1**®



## **Remote control**

Danfoss Power Solutions designs, manufactures and sells radio remote controls and radio communication-based electronic systems used in mobile, industrial and construction machinery. Radio remote control operation greatly increases precision and safety levels as well as machinery maneuverability.

## **Hallmarks**

Danfoss develops and manufactures highly reliable, cutting-edge products at its own facilities, ensuring that all equipment can operate in the most demanding conditions and environments, in line with the most stringent regulations and health and safety requirements.

Danfoss acts as a technology partner for its customers, in order to meet the market demand for flexible products and custom solutions. Danfoss can always be found alongside its customers, listening to them and designing highly customized, adaptable equipment in line with their requirements.

Danfoss offers a quick, agile service built on a professional support team and an extensive network of distributors around the world to provide the end-customer with high quality technical support.

# IK 2

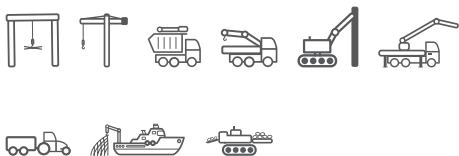
## When service meets design

- Up to 2 joysticks or 4 paddles
- Multiband radio with full-duplex communication
- Highly customizable
- 128 x 64 Graphic LCD
- External removable EEPROM SIM module
- Easy and fast maintenance
- High resistance to impacts
- Innovative ergonomics
- Non-slip handles
- Frequency management against interferences

## Specifications

Transmitter	IK 2
Stop function	Cat. 3 - PLd
Ingress protection	IP65/NEMA4
Anti-condensation system	Goretex film
Frequency band	Multiband (400-930 MHz)
Main mechanisms (max. #)	Joystick (2)/paddle (4)
Auxiliary mechanisms	Push-button, toggle and rotary switches
Removable EEPROM	External
Battery model	BT11K
Battery life	16 hours
Operating temperature range	-20° C + 70° C (-4° F + 158° F)
Weight (with battery) grams	950
Harness	Belt/shoulder strap
Display	128 x 64 Graphic LCD
Cable connection	Yes (M12 connector)
Range limiter	Yes
Associated receivers	R06/R13/R70/MPCAN/MP08/MP20



**Associated applications:**

External removable  
EEPROM SIM  
module

# ikontrol

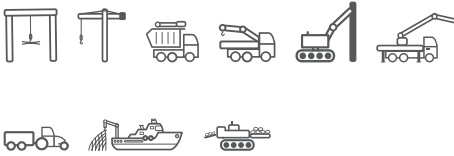
# IK 3

## When service meets design

- Up to 3 joysticks or 6 paddles
- Multiband radio with full-duplex communication
- Highly customizable
- 3.5" color TFT display
- External removable EEPROM SIM module
- Easy and fast maintenance
- High resistance to impacts
- Innovative ergonomics
- Non-slip handles
- Frequency management against interferences

## Specifications

Transmitter	IK 3
Stop function	Cat. 3 - PLd
Ingress protection	IP65/NEMA4
Anti-condensation system	Goretex film
Frequency band	Multiband (400-930 MHz)
Main mechanisms (max. #)	Joystick (3)/paddle (6)
Auxiliary mechanisms	Push-button, toggle and rotary switches
Removable EEPROM	External
Battery model	BT27IK
Battery life	16 hours
Operating temperature range	-20° C + 70° C (-4° F + 158° F)
Weight (with battery) grams	1780
Harness	Belt/shoulder strap
Display	3.5" Color TFT
Cable connection	Yes (M12 connector)
Range limiter	Yes
Associated receivers	R13/R70/R70PLUS/MPCAN/MP20

**Associated applications:**

External removable  
EEPROM SIM  
module

# ikontrol

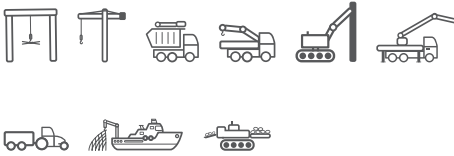
# IK 4

## Service, design and endless options

- Up to 4 joysticks or 8 paddles
- Multiband radio with full-duplex communication
- Highly customizable
- 3.5" color TFT display
- External removable EEPROM SIM module
- Easy and fast maintenance
- High resistance to impacts
- Innovative ergonomics
- Non-slip handles
- Frequency management against interferences

## Specifications

Transmitter	IK 4
Stop function	Cat. 3 - PLd
Ingress protection	IP65/NEMA4
Anti-condensation system	Goretex film
Frequency band	Multiband (400-930 MHz)
Main mechanisms (max. #)	Joystick (4)/paddle (8)
Auxiliary mechanisms	Push-button, toggle and rotary switches
Removable EEPROM	External
Battery model	BT27IK
Battery life	16 hours
Operating temperature range	-20° C + 70° C (-4° F + 158° F)
Weight (with battery) grams	2300
Harness	Belt/shoulder strap
Display	3.5" Color TFT
Cable connection	Yes (M12 connector)
Range limiter	Yes
Associated receivers	R13/R70/R70PLUS/MPCAN/MP20

**Associated applications:**

External removable  
EEPROM SIM  
module

# ikontrol



# Ikore

## State-of-the-art lifting technology

- High-sensitivity two-step push-button
- Radio communication at 2.4 GHz
- External removable EEPROM SIM module
- Easy and fast maintenance
- High resistance to impacts
- Improved ergonomics
- Hoist selection push-button
- Frequency management against interferences

## Specifications

Transmitter	Ikore
Stop function	Cat. 3 - PLe EN12849-1 and SIL 3 IEC 61508/IEC 62061
Ingress protection	IP65/NEMA4
Anti-condensation system	Non-applicable
Frequency band	2.4 GHz
Main mechanisms (max. #)	Push-button (7)
Auxiliary mechanisms	Non-applicable
Removable EEPROM	External
Battery model	4 x AAA/BT11K
Battery life	>80 hours (100% duty cycle)
Operating temperature range	-20° C + 70° C (-4° F + 158° F)
Weight (with battery) grams	315
Harness	Hand strap/shoulder strap
Display	Non-applicable
Cable connection	Non-applicable
Range limiter	Non-applicable
Associated receivers	R11

**Associated applications:**

# Ikargo

## Robustness and ergonomics in your hand

- High-sensitivity two-step push-button
- Multiband radio with full-duplex communication
- External removable EEPROM SIM module
- Easy and fast maintenance
- High resistance to impacts
- Frequency management against interferences
- Improved ergonomics
- Screen display
- Highly customizable

## Specifications

Transmitter	Ikargo
Stop function	Cat. 3 - PLd
Ingress protection	IP65/NEMA4
Anti-condensation system	Non-applicable
Frequency band	Multiband (400-930 MHz)
Main mechanisms (max. #)	Push-button (6)/Multikey (1)
Removable EEPROM	External
Battery model	BT11K
Battery life	>80 hours (100% duty cycle)
Operating temperature range	-20° C + 70° C (-4° F + 158° F)
Weight (with battery) grams	400
Harness	Hand strap/shoulder strap
Display	Yes
Cable connection	Non-applicable
Range limiter	Yes
Associated receivers	R06/R13 B/R13 F/R70

**Associated applications:**

# Ikompact

## Mini handheld transmitter for mobile applications

- High-sensitivity one-step push-button
- Radio communication at 2.4 GHz
- External and removable EEPROM SIM module
- Magnet fix option
- Fast and easy maintenance
- High resistance to impacts
- Frequency management against interferences
- Improved ergonomics

## Specifications

Transmitter	Ikompact
Stop function	Cat. 3-PLc EN12849-1 and SIL 3 IEC 61508/IEC 62061 (with STOP button option)
Ingress protection	IP65/NEMA4
Anti-condensation system	Non-applicable
Frequency band	2405-2475 MHz
Main mechanisms (max. #)	8 or 12 push-buttons
Auxiliary mechanisms	Non-applicable
Removable EEPROM	External
Battery model	4 AAA alkaline batteries
Battery life	>80 hours (100% duty cycle).
Operating temperature range	-20° C + 70° C (-4° F + 158° F)
Storage temperature	(24h): -25/+75° C (-13/+167° F)
Weight (with battery) grams	250
Harness	Lanyard/hook
Display	Non-applicable
Cable connection	Non-applicable
Range limiter	Non-applicable
Associated receivers	MP08 TR2400



**Associated applications:**

# T70 1

## The classic for lifting applications

- High-sensitivity two-step push-button
- Multiband radio with full-duplex communication
- Highly customizable
- LCD display
- External removable EEPROM SIM module
- Easy and fast maintenance
- High resistance to impacts
- Frequency management against interferences

## Specifications

Transmitter	T70 1
Stop function	Cat. 3 - PLd
Ingress protection	IP65/NEMA4
Anti-condensation system	Non-applicable
Frequency band	Multiband (400-930 MHz)
Main mechanisms (max. #)	Push-button (6)
Auxiliary mechanisms	Toggle and rotary switches
Removable EEPROM	External
Battery model	BT06K
Battery life	10 hours
Operating temperature range	-20° C + 70° C (-4° F + 158° F)
Weight (with battery) grams	460
Harness	Hand strap/shoulder strap
Display	2 x 12 Char LCD
Cable connection	Non-applicable
Range limiter	Yes
Associated receivers	R06/R13/R70/MPCAN/MP08

**Associated applications:**

External removable  
EEPROM SIM  
module

# T70 2

## Multiple configurations on a compact transmitter

- High-sensitivity two-step push-button
- Multiband radio with full-duplex communication
- Highly customizable
- LCD display
- External removable EEPROM SIM module
- Easy and fast maintenance
- High resistance to impacts
- Frequency management against interferences

## Specifications

Transmitter	T70 2
Stop function	Cat. 3 - PLd
Ingress protection	IP65/NEMA4
Anti-condensation system	Non-applicable
Frequency band	Multiband (400-930 MHz)
Main mechanisms (max. #)	Push-button (10)
Auxiliary mechanisms	Toggle and rotary switches
Removable EEPROM	External
Battery model	BT06K
Battery life	10 hours
Operating temperature range	-20° C + 70° C (-4° F + 158° F)
Weight (with battery) grams	550
Harness	Hand strap/shoulder strap
Display	2 x 12 Char LCD
Cable connection	Non-applicable
Range limiter	Yes
Associated receivers	R13/R70/MPCAN/MP08/MP20

**Associated applications:**

External removable  
EEPROM SIM  
module



# T70 1 HALL

## Precision at your fingertips

- High-sensitivity proportional push-button
- Multiband radio with full-duplex communication
- Highly customizable
- LCD display
- External removable EEPROM SIM module
- Easy and fast maintenance
- High resistance to impacts
- Frequency management against interferences

## Specifications

Transmitter	T70 1 HALL
Stop function	Cat. 3 - PLd
Ingress protection	IP65/NEMA4
Anti-condensation system	Non-applicable
Frequency band	Multiband (400-930 MHz)
Main mechanisms (max. #)	Push-button (6)
Auxiliary mechanisms	Toggle and rotary switches
Removable EEPROM	External
Battery model	BT06K
Battery life	10 hours
Operating temperature range	-20° C + 70° C (-4° F + 158° F)
Weight (with battery) grams	460
Harness	Hand strap/shoulder strap
Display	2 x 12 Char LCD
Cable connection	Non-applicable
Range limiter	Yes
Associated receivers	R13/R70/MPCAN/MP08

**Associated applications:**

External removable  
EEPROM SIM  
module

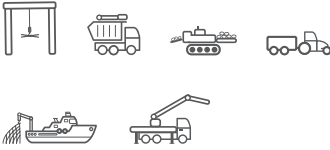
# T70 2 HALL

## Precision and total customization

- High-sensitivity proportional push-button
- Multiband radio with full-duplex communication
- Highly customizable
- LCD display
- External removable EEPROM SIM module
- Easy and fast maintenance
- High resistance to impacts
- Frequency management against interferences

## Specifications

Transmitter	T70 2 HALL
Stop function	Cat. 3 - PLd
Ingress protection	IP65/NEMA4
Anti-condensation system	Non-applicable
Frequency band	Multiband (400-930 MHz)
Main mechanisms (max. #)	Push-button (10)
Auxiliary mechanisms	Toggle and rotary switches
Removable EEPROM	External
Battery model	BT06K
Battery life	10 hours
Operating temperature range	-20° C + 70° C (-4° F + 158° F)
Weight (with battery) grams	550
Harness	Hand strap/shoulder strap
Display	2 x 12 Char LCD
Cable connection	Non-applicable
Range limiter	Yes
Associated receivers	R13/R70/MPCAN/MP08/MP20

**Associated applications:**

External removable  
EEPROM SIM  
module

# T70 1 ATEX

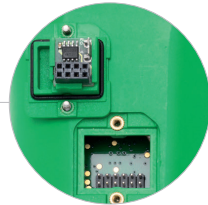
## The transmitter for hazardous areas

- High-sensitivity two-step push-button
- Multiband radio with full-duplex communication
- Highly customizable
- External removable EEPROM SIM module
- Easy and fast maintenance
- High resistance to impacts
- Frequency management against interferences
- Intrinsically safe

## Specifications

Transmitter	T70 1 ATEX
Stop function	Cat. 3 - PLd
Ingress protection	IP65/NEMA4
Anti-condensation system	Non-applicable
Frequency band	Multiband (400-930 MHz)
Main mechanisms (max. #)	Push-button (6)
Auxiliary mechanisms	Toggle and rotary switches
Removable EEPROM	External
Battery model	BT06K-ATEX
Battery life	8 hours
Operating temperature range	-20° C + 70° C (-4° F + 158° F)
Weight (with battery) grams	500
Harness	Hand strap/shoulder strap
Display	Non-applicable
Cable connection	Non-applicable
Range limiter	Non-applicable
Associated receivers	R70/R70 ATEX Z1/R13 ATEX Z2

## Associated applications:



External removable  
EEPROM SIM  
module

> **ATEX/IECEx**

Ex II 2 GD

Ex ia IIC T4 Gb

Ex ia IIIC T135°C Db CE0080

INERIS 08ATEX0006

IECEx INE 09.0014

> **CSA/UL**

Class I, Division 1, Groups

A,B,C and D Class II,

Division 1, Groups E,F and G

Zone 21, AEx iaD T135°C

T4 IP65

# T70 2 ATEX

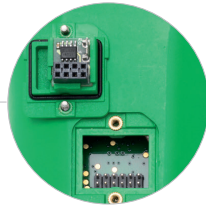
## Customization for hazardous areas

- High-sensitivity two-step push-button
- Multiband radio with full-duplex communication
- Highly customizable
- External removable EEPROM SIM module
- Easy and fast maintenance
- High resistance to impacts
- Frequency management against interferences
- Intrinsically safe

## Specifications

Transmitter	T70 2 ATEX
Stop function	Cat. 3 - PLd
Ingress protection	IP65/NEMA4
Anti-condensation system	Non-applicable
Frequency band	Multiband (400-930 MHz)
Main mechanisms (max. #)	Push-button (10)
Auxiliary mechanisms	Toggle and rotary switches
Removable EEPROM	External
Battery model	BT06K-ATEX
Battery life	8 hours
Operating temperature range	-20° C + 70° C (-4° F + 158° F)
Weight (with battery) grams	600
Harness	Hand strap/shoulder strap
Display	Non-applicable
Cable connection	Non-applicable
Range limiter	Non-applicable
Associated receivers	R70/R70 ATEX Z1/R13 ATEX Z2

## Associated applications:



External removable  
EEPROM SIM  
module

> **ATEX/IECEx**

Ex II 2 GD

Ex ia IIC T4 Gb

Ex ia IIIC T135°C Db CE0080

INERIS 08ATEX0006

IECEx INE 09.0014

> **CSA/UL**

Class I, Division 1, Groups

A,B,C and D Class II,

Division 1, Groups E,F and G

Zone 21, AEx iaD T135°C

T4 IP65



# MPCAN

## Adapted to vehicles with CAN bus communication

- Multiband radio with full-duplex communication
- External LEDs for troubleshooting
- Highly field-customizable
- Removable EEPROM SIM module
- Frequencies management against interferences
- STOP: PLd, Category 3 according to EN ISO 13849-1:2008
- Easy and fast maintenance
- Multifeedback capability
- 4 digital outputs/inputs

## Specifications

Receiver	MPCAN
Stop function	Cat. 3 - PLd
Ingress protection	IP65/NEMA4
Frequency band	Multiband (400-930 MHz)
AC power supply	Non-applicable
DC power supply	6-35 Vdc
Antenna	External/internal
Removable EEPROM	Internal
Signaling	External
ON/OFF outputs (max. #)	4
Analog outputs (max. #)	Non-applicable
CANOpen	Yes
ON/OFF inputs (max. #)	4
Analog inputs (max. #)	Non-applicable
Maximum output current	2A
Working temperature range	-20° C + 70° C (-4° F + 158° F)
Weight (grams)	300
Dimensions (L x W x H mm)	117 x 133 x 36
Cable connection	Yes
Associated transmitters	T70 1, T70 2, T70 1 HALL, T70 2 HALL, T70 1 ATEX, T70 2 ATEX, IK 2, IK 3, IK 4

**Associated applications:**

# MP08

## Mobile applications in reduced spaces

- 2.4 GHz or 400-900 MHz frequency band radios
- External LEDs for troubleshooting
- Highly field-customizable
- Removable EEPROM SIM module
- Frequencies management against interferences
- STOP: PLd, Category 3 according to EN ISO 13849-1:2008
- Easy and fast maintenance
- Multifeedback capability
- 8 digital and 4 analog outputs (PWM/voltage)
- Suitable for all common proportional valves

## Specifications

Receiver	MP08A/MP08V
Stop function	Cat. 3 - PLd
Ingress protection	IP65/NEMA4
Frequency band	Multiband (400-930 MHz) or 2405-2475 MHz
AC power supply	Non-applicable
DC power supply	6-35 Vdc
Antenna	External/internal
Removable EEPROM	Internal
Signaling	External
ON/OFF outputs (max. #)	12/8
Analog outputs (max. #)	PWM (4), voltage (4)
CANOpen	Non-applicable/yes
ON/OFF inputs (max. #)	4/2
Analog inputs (max. #)	1
Maximum digital output current	2A/2A
Maximum analog output current	2.5A/20mA
Working temperature range	-20° C + 70° C (-4° F + 158° F)
Weight (grams)	300
Dimensions (L x W x H mm)	117 x 133 x 36
Cable connection	Yes
Associated transmitters	T70 1 HALL, T70 2 HALL, IK 2, IK 3, Ikompact

**Associated applications:**

# MP20

## When service is paramount

- Multiband radio with full-duplex communication
- External display for troubleshooting
- Highly field-customizable
- External removable EEPROM SIM module
- Frequencies management against interferences
- STOP: PLd, Category 3 according to EN ISO 13849-1:2008
- Easy and fast maintenance
- Multifeedback capability
- 12 digital and 8 analog outputs (PWM/voltage)
- Suitable for all common proportional valves

## Specifications

Receiver	MP20A/MP 20V
Stop function	Cat. 3 - PLd
Ingress protection	IP65/NEMA4
Frequency band	Multiband (400-930 MHz)
AC power supply	Non-applicable
DC power supply	6-35 Vdc
Antenna	External/internal
Removable EEPROM	External
Signaling	External
ON/OFF outputs (max. #)	28/12
Analog outputs (max. #)	PWM (8), voltage (8)
CANOpen	Yes
ON/OFF inputs (max. #)	24
Analog inputs (max. #)	5
Maximum digital output current	2A/2A
Maximum analog output current	2.5A/20mA
Working temperature range	-20° C + 70° C (-4° F + 158° F)
Weight (grams)	1350
Dimensions (L x W x H mm)	245 x 160 x 80
Cable connection	Yes
Associated transmitters	T70 2 HALL, IK 2, IK 3, IK 4

**Associated applications:**

External display  
for troubleshooting



External removable  
EEPROM SIM  
module



# R06

## The hoist receiver

- Multiband radio with full-duplex communication
- External LEDs for troubleshooting
- Highly field-customizable
- Removable EEPROM SIM module
- Frequencies management against interferences
- STOP: PLd, Category 3 according to EN ISO 13849-1: 2008
- Easy and fast maintenance
- Multifeedback capability
- 6 digital outputs

## Specifications

Receiver	R06
Stop function	Cat. 3 - PLd
Ingress protection	IP65/NEMA4
Frequency band	Multiband (400-930 MHz)
AC power supply	18-30/48-230 Vac
DC power supply	8-36 Vdc
Antenna	Internal
Removable EEPROM	Internal
Signaling	External
ON/OFF outputs (max. #)	6
Analog outputs (max. #)	Non-applicable
CANOpen	Yes
ON/OFF inputs (max. #)	4
Analog inputs (max. #)	1
Maximum output current	6A
Working temperature range	-20° C + 70° C (-4° F + 158° F)
Weight (grams)	640
Dimensions (L x W x H mm)	151 x 129 x 61
Cable connection	Yes
Associated transmitters	T70 1, T70 1 ATEX, IK 2

**Associated applications:**



# R11

## The receiver for standard EOT cranes

- Radio communication at 2.4 GHz
- Removable EEPROM SIM module
- Frequencies management against interferences
- Easy and fast maintenance
- Multifeedback capability
- 11 digital outputs

### Specifications

Receiver	R11
Stop function	Cat. 3-PLe EN12849-1 and SIL 3 IEC 61508/IEC 62061
Ingress protection	IP65/NEMA4
Frequency band	2.4 GHz
AC power supply	18-30/48-230 Vac
DC power supply	8-36 Vdc
Antenna	Internal
Removable EEPROM	Internal
Signaling	Internal
ON/OFF outputs (max. #)	11
Analog outputs (max. #)	Non-applicable
CANOpen	Non-applicable
ON/OFF inputs (max. #)	Non-applicable
Analog inputs (max. #)	Non-applicable
Maximum output current	8A
Working temperature range	-20° C + 70° C (-4° F + 158° F)
Weight (grams)	800
Dimensions (L x W x H mm)	164 x 210 x 60
Cable connection	Non-applicable
Associated transmitters	Ikore

**Associated applications:**

# R13 B

## The standard solution for industrial cranes

- Multiband radio with full-duplex communication
- External LEDs for troubleshooting
- Highly field-customizable
- External removable EEPROM SIM module
- Frequencies management against interferences
- STOP: PLd, Category 3 according to EN ISO 13849-1:2008
- Easy and fast maintenance
- Multifeedback capability
- 13 digital outputs

### Specifications

Receiver	R13 B
Stop function	Cat. 3 - PLd
Ingress protection	IP65/NEMA4
Frequency band	Multiband (400-930 MHz)
AC power supply	18-30/48-230 Vac
DC power supply	8-36 Vdc
Antenna	Internal
Removable EEPROM	External
Signaling	External
ON/OFF outputs (max. #)	13
Analog outputs (max. #)	Non-applicable
CANOpen	Non-applicable
ON/OFF inputs (max. #)	4
Analog inputs (max. #)	1
Maximum output current	8A
Working temperature range	-20° C + 70° C (-4° F + 158° F)
Weight (grams)	1350
Dimensions (L x W x H mm)	245 x 160 x 80
Cable connection	Non-applicable
Associated transmitters	T70 1, T70 2, T70 1 ATEX, T70 2 ATEX, IK 2, IK 3

**Associated applications:**

External  
LEDs for  
troubleshooting

External removable  
EEPROM SIM  
module



# R13 F

## The custom solution for industrial cranes

- Multiband radio with full-duplex communication
- External display for troubleshooting
- Highly field-customizable
- External removable EEPROM SIM module
- Frequencies management against interferences
- STOP: PLd, Category 3 according to EN ISO 13849-1:2008
- Easy and fast maintenance
- Multifeedback capability
- 21 digital and 4 analog outputs
- Suitable for all common proportional valves

### Specifications

Receiver	R13 F
Stop function	Cat. 3 - PLd
Ingress protection	IP65/NEMA4
Frequency band	Multiband (400-930 MHz)
AC power supply	18-30/48-230 Vac
DC power supply	8-36 Vdc
Antenna	External
Removable EEPROM	External
Signaling	External
ON/OFF outputs (max. #)	21
Analog outputs (max. #)	4
CANOpen, Profibus-DP, Profinet	Yes
ON/OFF inputs (max. #)	24
Analog inputs (max. #)	6
Maximum output current	8A
Working temperature range	-20° C + 70° C (-4° F + 158° F)
Weight (grams)	1700
Dimensions (L x W x H mm)	245 x 160 x 80
Cable connection	Yes
Associated transmitters	T70 1, T70 2, T70 1 HALL, T70 2 HALL, T70 1 ATEX, T70 2 ATEX, IK 2, IK 3, IK 4

**Associated applications:**

# R70

## Flexibility for any application

- Multiband radio with full-duplex communication
- Highly field-customizable
- Removable EEPROM SIM module
- Frequencies management against interferences
- STOP: PLd, Category 3 according to EN ISO 13849-1:2008
- Easy and fast maintenance
- Multifeedback capability
- 29 digital and 8 analog outputs
- Suitable for all common proportional valves

## Specifications

Receiver	R70
Stop function	Cat. 3 - PLd
Ingress protection	IP65/NEMA4
Frequency band	Multiband (40- 930 MHz)
AC power supply	18-30/48-230 Vac
DC power supply	8-36 Vdc
Antenna	External
Removable EEPROM	Internal
Signaling	Internal
ON/OFF outputs (max. #)	29
Analog outputs (max. #)	8
CANOpen	Yes
ON/OFF inputs (max. #)	44
Analog inputs (max. #)	8
Maximum output current	8A
Working temperature range	-20° C + 70° C (-4° F + 158° F)
Weight (grams)	2100
Dimensions (L x W x H mm)	285 x 200 x 110
Cable connection	Yes
Associated transmitters	T70 1, T70 2, T70 1 HALL, T70 2 HALL, T70 1 ATEX, T70 2 ATEX, IK 2, IK 3, IK 4

**Associated applications:**



# R70 PLUS

## Endless possibilities

- Multiband radio with full-duplex communication
- Highly field-customizable
- Removable EEPROM SIM module
- Frequencies management against interferences
- STOP: PLd, Category 3 according to EN ISO 13849-1:2008
- Easy and fast maintenance
- Multifeedback capability
- 53 digital and 8 analog outputs
- Suitable for all common proportional valves

## Specifications

Receiver	R70 PLUS
Stop function	Cat. 3 - PLd
Ingress protection	IP65/NEMA4
Frequency band	Multiband (400-930 MHz)
AC power supply	18-30/48-230 Vac
DC power supply	8-36 Vdc
Antenna	External
Removable EEPROM	Internal
Signaling	Internal
ON/OFF outputs (max. #)	53
Analog outputs (max. #)	8
CANOpen	Yes
ON/OFF inputs (max. #)	44
Analog inputs (max. #)	8
Maximum output current	8A
Working temperature range	-20° C + 70° C (-4° F + 158° F)
Weight (grams)	Config dependant
Dimensions (L x W x H mm)	350 x 250 x 150
Cable connection	Yes
Associated transmitters	IK 3, IK 4

**Associated applications:**

# R13 ATEX Z2

## The receiver for Zone 2 classification hazardous areas

- Multiband radio
- Highly field-customizable
- Removable EEPROM SIM module
- Frequencies management against interferences
- STOP: PLd, Category 3 according to EN ISO 13849-1:2008
- Easy and fast maintenance
- Low mechanical risk
- Electrostatic buildup risk
- 13 digital outputs

### Specifications

Receiver	R13 ATEX Z2
Stop function	Cat. 3 - PLd
Ingress protection	IP65/NEMA4
Frequency band	Multiband (400-930 MHz)
AC power supply	230 Vac
DC power supply	Non-applicable
Antenna	External/internal
Removable EEPROM	Internal
Signaling	Internal
ON/OFF outputs (max. #)	13
Analog outputs (max. #)	Non-applicable
CANOpen	Non-applicable
ON/OFF inputs (max. #)	Non-applicable
Analog inputs (max. #)	Non-applicable
Maximum output current	8A
Working temperature range	-20° C + 50° C (-4° F + 122° F)
Weight (grams)	1350
Dimensions (L x W x H mm)	245 x 160 x 80
Cable connection	Non-applicable
Associated transmitters	T70 1 ATEX, T70 2 ATEX

**Associated applications:****> ATEX/IECEX**

Ex II 3 GD

Ex ic nA nC IIC T4 Gc

Ex ic tc III C T135° C Dc

T.amb: -20° C + 50° C

CE 0080

INERIS 14ATEX3013X

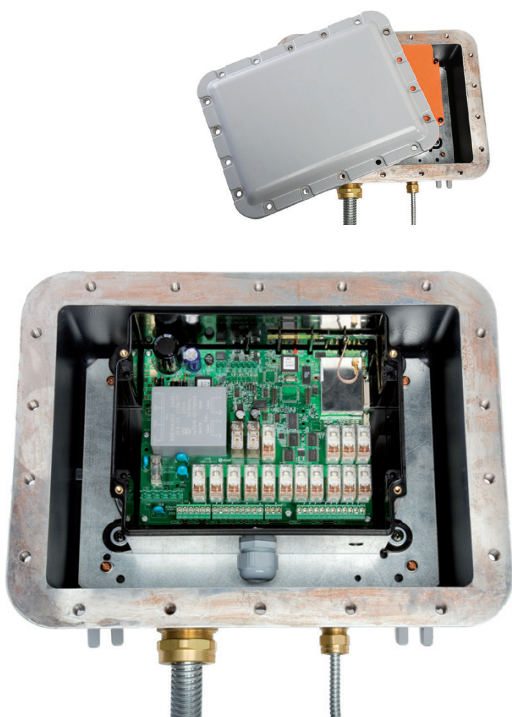
# R70 ATEX Z1

## The receiver for hazardous areas

- Multiband radio
- Highly field-customizable
- Removable EEPROM SIM module
- Frequencies management against interferences
- STOP: PLd, Category 3 according to EN ISO 13849-1:2008
- Easy and fast maintenance
- Explosion-proof
- 29 digital outputs

## Specifications

Receiver	R70 ATEX Z1
Stop function	Cat. 3 - PLd
Ingress protection	IP66/NEMA4
Frequency band	Multiband (400-930 MHz)
AC power supply	48/230 Vac
DC power supply	Non-applicable
Antenna	External
Removable EEPROM	Internal
Signaling	Internal
ON/OFF outputs (max. #)	29
Analog outputs (max. #)	Non-applicable
CANOpen	Non-applicable
ON/OFF inputs (max. #)	Non-applicable
Analog inputs (max. #)	Non-applicable
Maximum output current	8A
Working temperature range	-20° C + 70° C (-4° F + 158° F)
Weight (grams)	Config dependant
Dimensions (L x W x H mm)	452 x 350 x 207
Cable connection	Non-applicable
Associated transmitters	T70 1 ATEX, T70 2 ATEX

**Associated applications:****> ATEX/IECE<sub>x</sub>**

⚡ II 2 GD

Ex d ia IIB T5

Ex tD iaD A21 IP65 T100°C

T<sub>amb</sub>: -20° C + 70° C

CE 0080

INERIS 08ATEX029

## Battery charger

# CB70



The CB70 battery charger has two charge housings for the simultaneous charging of two batteries (models BT06K, BT27IK and BT06K ATEX).

## Battery

# BT06K



The BT06K model battery is a rechargeable NiMH (Nickel Metal Hydride) battery for use with push-button transmitters from the TM70 range (models T70 1 and T70 2).

# BT27IK



The BT27IK model battery is a rechargeable NiMH (Nickel Metal Hydride) battery for use with console box transmitters IK 3 and IK 4.

# BT06K ATEX



The BT06K ATEX model battery is a rechargeable NiMH (Nickel Metal Hydride) battery for use with push-button transmitters from the TM70 range models T70 1 ATEX and T70 2 ATEX.

**Battery charger****BC70K**

The BC70K battery charger has two charge housings for the simultaneous charging of two batteries (model BT11K). It has a fast and intelligent charge.

**Battery****BT11K**

The BT11K model battery is a rechargeable Li-Ion (Lithium-ion) battery for use with console box transmitter model IK 2 and Ikore.





# Customization options

## External EEPROM

Removable memory card. Quick and easy restoration of service with a spare unit in the event a transmitter or receiver fails. If the transmitter is completely destroyed, the replacement can copy the EEPROM from the receiver.



## Color TFT

3.5" color TFT display with high image quality for displaying feedback information. Possibility of full-duplex communication. The new Ikugraph software enables the customization of the feedback shown in the display.



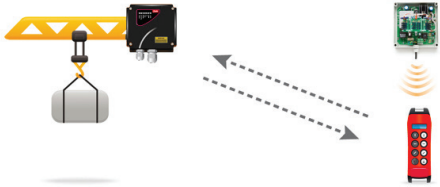
## LEDs panel

The panel of the IK 3 and IK 4 transmitters has a maximum number of 12 LEDs and the possibility of incorporating two side lanterns. The IK 2 transmitter has a maximum of eight LEDs and does not bring the opportunity to set up the lanterns.



## Range limiter

The remote can only be used when there is an infrared connection between the infrared transmitter and the radio transmitter. This rules out risk situations caused by activating the remote without a clear and safe view of the machine.



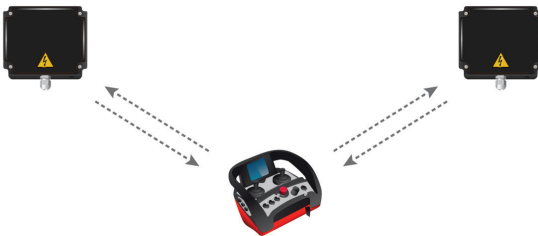
## Twin synchro

The most compact tandem solution. A system operated by a master transmitter (push-button or console box) that controls the synchronized movements of two cranes working in tandem through the use of simultaneous radio signals.



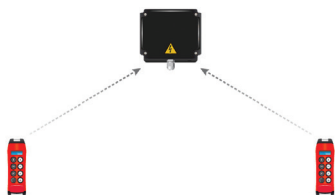
## Multiple receiver systems

Possibility of working with a single transmitter and multiple receivers at the same time.



## Multiple transmitter systems (first come, first served)

Possibility of working with multiple transmitters and a single receiver. The first device to link up assumes control of the machine.



## Communication protocols

Our receivers can communicate through different serial communication protocols: CANopen, Profibus and Profinet.



## Worldwide radio capabilities

Worldwide compatible multiband radio. Possibility of full-duplex communication. Easily customizable via EEPROM. Possibility of choosing the more suitable for each application. Multiband (400-900MHz) + 2.4 GHz



## Inclinometer

Used to detect an unusual, high transmitter angle. It allows a number of intervention modes:

- Activate the transmitter buzzer
- Disable all radio remote functions or only those considered necessary



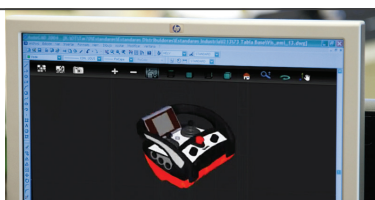
## Tether connection

Tether connection between the transmitter and receiver as an alternative to radio connection. In the event that radio control is not permitted or there are no charged batteries, the radio remote can be used with a wired connection between the transmitter and receiver. If a wired connection is used, the transmitter is powered by the receiver.



## Customizing tools

Several customizing tools are available for our equipment:



- REPCON 4: Configuration software for complete Danfoss equipment. This tool is available to the official network of Danfoss dealers, all of whom are highly trained and qualified to provide a close and efficient service to customers.
- EEPROM recorder: Tool for recording removable memories of Danfoss equipment; also offers the possibility of setting basic parameters.
- Remote settings: Analog input/output calibration tool for the installation.

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