

TRANSMITTERS

The MIDI & MIDI Extended transmitters



The MIDI series – Product benefits

- Two-way communication with feedback to a graphic display and LEDs
- Can be customised for a wide range of applications and according to preference
- Ergonomic joysticks made of tempered steel with superior durability
- The use of a unique digital protocol and verification by double processors ensures safety
- Designed for challenging environments and reliable operation. The transmitter complies with protection class IP65 and can withstand chemicals, cold, heat and humidity
- Backwards compatibility makes it possible to use the MIDI series in place of previous transmitter models

TRANSMITTERS



The Datek MIDI series has been designed for safe radio remote control in demanding industrial environments. It is suitable for everything from standard applications to advanced specialised equipment. Choose either the MIDI or the larger MIDI Extended, depending on the number of functions required.

Flexible and user-friendly

The front panel of the transmitter can be adapted according to the application and user preferences by choosing appropriate joysticks and switches. The front panel is laser-engraved with the customer's preferred symbols, texts and logos. Feedback information from the receiver to the transmitter is shown on a graphic display and/or LEDs. The housing, which is made of impact-resistant plastic, is ergonomically designed with sturdy handles, and the top part is available in black, red or blue.

Convenient online programming

This versatile transmitter can be programmed and calibrated online to ensure optimal control of proportional functions. Calibrated values, such as initial, maximum and micro speeds, are stored in three different memory banks. By means of a toggle switch, the operator can access these memory banks to select a particular setting or suitable operating properties.

Panel design - Choose the layout, controls, symbols and text

With Datek you can have your very own panel design. You choose the type and number of joysticks, switches and indicators you require. We will engrave your own text and symbols on the panel. You can also select the colour and have your own logo on the transmitter to match your corporate identity.

Safe multiple operation

Multiple-receiver operation means that one transmitter can take control of up to three receivers at the same time. This makes it easy to handle simultaneous lifting, for instance. Multiple-transmitter operation means that the control can be shifted between three transmitters. Handovers may be appropriate in the case of long transfers where the view is blocked. Datek's multiple operation ensures that only one transmitter at a time can have control of the receiver. Operators have to make an active choice to transfer the control, by either relinquishing control or taking control.

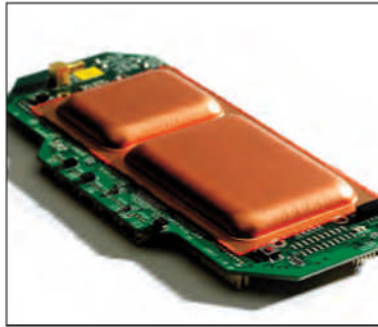
Two-way communication

Information can be sent back to the transmitter on the same frequency as the control commands to the receiver, by using semi-duplex technology. The information is presented on a graphic display and/or LEDs. Images, text and figures are shown on the display in a flexible format and sequence.

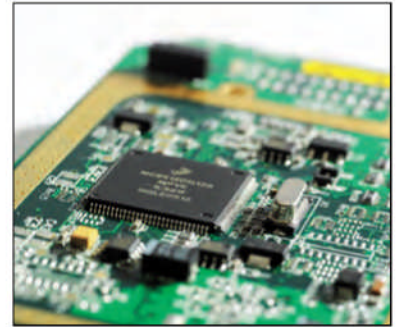




Robust and ergonomically designed joysticks made of tempered steel with low static stress on joints.



Encapsulated circuit board. The electronics are hermetically sealed and protected against all outside influences.



Sophisticated technology and software provide superior safety.



A flexible graphic display provides excellent feedback to the user.



Activation of the stop button puts the system in a safe stop mode within 0.5 seconds.



The case is impact resistant and can withstand UV light, chemicals, heat, cold and humidity. The ergonomic design makes it comfortable and easy to keep hold of even when using working gloves.

Comprehensive safety

The transmitter is equipped with a built-in start control, preventing startup in the event of safety-critical errors. LED indicators and audible signals inform the user as to what has caused the error. The transmitter continuously sends information to the receiver using a digitally verified protocol unique to Datek. In the event of even the smallest error arising, the receiver will immediately (<0.5 seconds) revert to a safe stop mode. Each Datek transmitter is assigned a unique ID code, ensuring that any given transmitter can only activate its own dedicated receiver. No other transmitter or product can ever activate a Datek system.

Robust, ergonomic joysticks

Datek's joysticks are supplied with well-defined neutral positions and speed steps, or are designed for proportional control (128 levels for proportional control). The joysticks are made of tempered steel, ensuring superior durability and quality. The design gives a low static resistance, preventing wear and tear on joints. The joysticks come in many different designs to suit different types of applications as well as the operators' individual preferences.

The D2801 MIDI Extended

The MIDI Extended has the same basic functions as the MIDI, but the transmitter has a larger housing, with space for more joysticks, paddles and switches. The enlarged panel has plenty of room for controls, symbols and text, and has space for up to three joysticks, seven paddles and also a large number of toggle switches and LEDs. The MIDI Extended can handle up to 60 control functions simultaneously, and a powerful battery provides up to 30 hours of continuous operation.

Backwards compatibility

The MIDI series is backwards compatible and can substitute for all of Datek's previous transmitter models. This makes it possible to update an older system using a new transmitter without making modifications to the radio receiver and relay cabinet. Datek products are generally backwards compatible in terms of both hardware and software, so that we can provide the best possible service.





D2801 MIDI

General information

Dimensions	120 x 280 x 150 mm
Weight	1.0 – 1.5 kg with battery
Temperature range	-25° – 70°C
Protection class	IP65

Radio transmission

Frequency	406 – 472 MHz
Output power	1 – 100 mW (standard 10 mW)
Range	>100 m

Cable control

Technology	2-wire
Length	≤200 metres (standard 10 m)

Power supply

Battery	4.8 VDC NiMH
Effective operating time	<14 hours continuous operation
Charging time	2.5 hours

Control functions

Proportional functions	8
Digital functions	16

Feedback

Technology	semi-duplex
Graphic display	128 x 64 pixels / 60 x 30 mm
LEDs	16

Joysticks

Number	0 – 2
Axis	Y, X/Y, X/Y/Z
Speed steps	1, 2, 3, 4, 5, 6 or proportional



D2801 MIDI Extended

General information

Dimensions	140 x 340 x 160 mm
Weight	1.7 – 2.5 kg with battery
Temperature range	-25° – 70°C
Protection class	IP65

Radio transmission

Frequency	406 – 472 MHz
Output power	1 – 100 mW (standard 10 mW)
Range	>100 m

Cable control

Technology	2-wire
Length	≤200 metres (standard 10 m)

Power supply

Battery	7.2 VDC NiMH
Effective operating time	<30 hours continuous operation
Charging time	2.5 hours

Control functions

Proportional functions	8
Digital functions	52

Feedback

Technology	semi-duplex
Graphic display	128 x 64 pixels / 60 x 30 mm
LEDs	16

Joysticks

Number	0 – 3
Axis	Y, X/Y, X/Y/Z
Speed steps	1, 2, 3, 4, 5, 6 or proportional



The D2001K receiver

The Datek D2001K (L/M/PLC) receiver series is designed to safely control industrial and mobile applications. The receiver is suitable for operating overhead cranes, telfers and winches in industrial environments. It is also suitable for operating mobile units, such as concrete chutes/pumps, sewage tankers and hook lifts.

Robust and easy to maintain

The receiver is designed for harsh working environments and a long service life. Separate circuit boards for radio, logic devices and relays with LEDs indicating operating status and information flow make any troubleshooting easy. All connectors and relays are socket-mounted, making it easy to replace the defective module, thereby keeping downtime to a minimum. The receiver is mounted inside a sturdy steel cabinet that complies with protection class IP65. If the receiver will be particularly exposed to such things as chemicals, sea water or road salt, a stainless-steel cabinet can be chosen as an option.

The radio board and logic devices are mounted in an aluminium case inside the receiver cabinet door. The front of the case is fitted with transparent perspex, making it easy to see the operating status of each board. A quick-release coupling keeps the case in place, so it can easily be removed. This facilitates fast and easy replacement of important electronics, the moving of electronic devices between different receivers, troubleshooting in a more suitable location or sending the unit in for service.

Radio transmission

The receiver's frequency is adjusted to the required frequency band. For frequency shift transmitters, the receiver scans the frequency band until it finds the relevant transmitter with the correct ID code and protocol.

Product benefits

- Suitable for overhead cranes, telfers and winches in industry as well as mobile units, such as concrete chutes/pumps, sewage tankers and hook lifts
- Comes in four basic versions and can be customised according to preference
- Easy to install and maintain
- The use of a unique digital protocol and verification by double processors ensures safety
- Designed for challenging environments and reliable operation. The receiver complies with protection class IP65 and is resistant to chemicals, cold, heat and humidity

Comprehensive safety

Datek uses synchronous data transmission, which means that each bit of data is checked very carefully. Even the smallest deviation from the norm is detected, and then the entire data packet that has been received is rejected. Each system has a unique ID code. If the transmitter's ID code does not match the receiver's, radio communication will never be established.

Both the protocol and its checksum are digitally verified by dual processors using different software. This provides what is known as a redundancy check. If the processors interpret the protocol differently, they immediately shut down all outputs. Such safety features as digitally verified transmission and redundancy checking are just two of the innovations which Datek has pioneered in the area of radio remote control. Since its founding in 1979 Datek has focused on developing safe radio remote controls, something we still do and will continue to do.

Feedback

The receivers in this series can be provided with two-way communication. Feedback to the transmitter unit is obtained through semi-duplex, which means that only one frequency is utilised for both control signals to the receiver and feedback data. This is advantageous if availability of frequencies is limited, as you are only taking up one frequency instead of two.

The receiver series is available in four different versions

The D2001K can control up to 20 digital functions. The receiver is suitable for applications with one, two or more speed steps.

The D2001KL can control up to four motions proportionally along with nine digital functions. The four analogue outputs are galvanically separated and are fitted with directional and, if required, full-speed relays.

The D2001KM can control up to 14 digital functions. This receiver is more compact (220 x 120 x 90 mm) than the other receivers in this series and is therefore suitable for installation in confined spaces. The receiver enclosure is made of sturdy fibreglass, which complies with protection class IP65.

The D2001K PLC has parallel PNP outputs or serial communication via RS-232 for PLC control. The receiver is supplied as standard on a mounting plate with terminal strips to be fitted into a control cabinet together with a PLC. As an option, the receiver can also be supplied in a steel or stainless-steel cabinet.

Options

- Signal horn
- Pre-assembled machine cable with Harting connector
- Extension cable for aerial
- Stainless-steel cabinet

Recommended transmitters

- D2801 MIDI
- D2801 MIDI Extended
- D2012 Hand-Held Transmitter



	2001K	2001KL	2001KM	2001K/PLC
Dimensions	300 x 200 x 160 mm	300 x 200 x 160 mm	220 x 120 x 90 mm	280 x 250 x 70 mm
Output relays	8A/250 VDC	8A/250 VDC	8A/250 VDC	-
Proportional outputs	-	4 pcs 0 - 10 VDC / +/-10 VDC / 4 - 20 mA	-	-
Digital outputs	20	9	14	28 (PNP)
Digital inputs	6	6	6	6
Digital / analogue inputs	8	8	8	8
Serial output	-	-	-	RS232
Frequency	406 - 472 MHz	406 - 472 MHz	406 - 472 MHz	406 - 472 MHz
Temperature range	-25° - 70°C	-25° - 70°C	-25° - 70°C	-25° - 70°C
Protection class	IP65	IP65	IP65	IP20
Supply voltage	12 - 36 VDC / 48, 110, 230 VAC	24 - 36 VDC / 48, 110, 230 VAC	12 - 36 VDC	12 - 36 VDC



The D2001/D2801 receiver

The Datek D2001/D2801 receiver has been designed for a long service life in harsh environments and for easy maintenance. Separate circuit boards for radio, logic devices and power supply with LEDs indicating operating status and information flow make any troubleshooting easy. The 11-pin socket-mounted industrial relays manage high loads (10 A/250 VAC), which means that the receiver can be directly connected to all kinds of apparatus without the need for intermediate devices. Older cranes with large contactors and high power consumption can also be directly operated.

Robust and easy to maintain

The receiver is mounted inside a sturdy steel cabinet which complies with protection class IP65. If the receiver will be particularly exposed to such things as chemicals, sea water or road salt, a stainless-steel cabinet can be chosen as an option. The radio board, logic devices and voltage transformer are mounted in an aluminium case inside the receiver cabinet door.

The front of the case is fitted with transparent perspex, making it easy to see the operating status of each board. A quick-release coupling keeps the case in place, so it can easily be removed. This facilitates fast and easy replacement of important electronics, the moving of electronic devices between different receivers, troubleshooting in a more suitable location or sending the unit in for service.

The 11-pin industrial relays are socket-mounted, which makes them easy to replace if required. Connections to controlled applications are made using connection blocks with screw terminals. The individually detachable connections facilitate easy disabling and troubleshooting of different functions. This makes it easy to identify and replace the defective module, thereby avoiding longer downtime.

Product benefits

- Suitable for construction cranes, overhead cranes, deck winches, etc. with two or more speed steps
- 11-pin industrial relays that manage high loads: 10 A/250 VAC
- Can be customised for various applications and according to preference
- Easy to install and maintain
- The use of a unique digital protocol and verification by double processors ensures safety
- Designed for challenging environments and reliable operation. The receiver complies with protection class IP65 and is resistant to chemicals, cold, heat and humidity
- Backwards compatibility makes it possible to use the D2001/D2801 in place of previous receiver models

Comprehensive safety

Datek uses synchronous data transmission, which means that each bit of data is checked very carefully. Even the smallest deviation from the norm is detected, and then the entire data packet that has been received is rejected. Each system has a unique ID code. If the transmitter's ID code does not match the receiver's, radio communication will never be established.

Both the protocol and its checksum are digitally verified by dual processors using different software. This provides what is known as a redundancy check. If the processors interpret the protocol differently, they immediately shut down all outputs. Such safety features as digitally verified transmission and redundancy checking are just two of the innovations which Datek has pioneered in the area of radio remote control. Since its founding in 1979 Datek has focused on developing safe radio remote controls, something we still do and will continue to do.

Radio transmission

The receiver's frequency is adjusted to the required frequency band. For frequency shift transmitters, the receiver scans the frequency band until it finds the relevant transmitter with the correct ID code and protocol.

Feedback

The receivers in this series can be provided with two-way communication. Feedback to the transmitter unit is obtained through semi-duplex, which means that only one frequency is utilised for both control signals to the receiver and feedback data. This is advantageous if availability of frequencies is limited, as you are only taking up one frequency instead of two.

Customised receivers

The receiver cabinet is available in two different sizes, depending on the number of functions/relays required. Receivers with up to 23 relays come in a cabinet measuring 380 x 380 x 210 mm. Receivers with more than 23 relays come in a cabinet measuring 380 x 600 x 210 mm.

D2001 can control up to 20 digital functions.

D2801 can control up to 28 digital functions.

D2801 Extended can control more than 28 digital functions by using two receiver logic boards in a master/slave configuration. This makes it possible to have 56 simultaneous digital outputs from the receiver.



General information

Dimensions	380 x 380 x 210 mm (≤23 relays)
Dimensions	380 x 600 x 210 mm (>23 relays)
Temperature range	-25° – 70°C
Protection class	IP65

Radio transmission

Frequency	406 – 472 MHz
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Power supply

Supply voltage	48/110/230 VAC
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Outputs

Digital outputs	≤56
Output relays	10 A/250 VAC

Feedback

Digital inputs	6
Digital / analogue inputs	8

Options

- Signal horn
- Pre-assembled machine cable with Harting connector
- Extension cable for aerial
- Stainless-steel cabinet

Recommended transmitters

D2801 MIDI
D2801 MIDI Extended
D2012 Hand-Held



The D6003B receiver

The Datek D6003B field bus receiver has been designed to operate industrial and mobile applications safely. The receiver is suitable for all kinds of applications where the Profibus DP-V1 or various types of CAN-bus are used. Field bus technology involves the serial transmission of information to a PLC, as opposed to parallel transmission using separate outputs.

Comprehensive safety

Datek uses synchronous data transmission, which means that each bit of data is checked very carefully. Even the smallest deviation from the norm is detected, and then the entire data packet that has been received is rejected. Each system has a unique ID code. If the transmitter's ID code does not match the receiver's, radio communication will never be established.

Both the protocol and its checksum are digitally verified by dual processors using different software. This provides what is known as a redundancy check. If the processors interpret the protocol differently, they immediately shut down all outputs. Such safety features as digitally verified transmission and redundancy checking are just two of the innovations which Datek has pioneered in the area of radio remote control. Since its founding in 1979 Datek has focused on developing safe radio remote controls, something we still do and will continue to do!

Radio transmission

The receiver's frequency is adjusted to the required frequency band. For frequency-shift transmitters, the receiver scans the frequency band until it finds the relevant transmitter with the correct ID code and protocol.

Product benefits

- Safe control of industrial and mobile applications
- Communicates with the field bus variants Profibus DP-V1 and various types of CAN-bus
- Can be customised for each application and according to preference
- Easy to install and maintain
- The use of a unique digital protocol and verification by double processors ensures safety
- Designed for challenging environments and reliable operation. The receiver complies with protection class IP65 and is resistant to chemicals, cold, heat and humidity

Feedback

The receivers in this series can be provided with two-way communication. Feedback to the transmitter unit is obtained through semi-duplex, which means that only one frequency is utilised for both control signals to the receiver and feedback data. This is advantageous if availability of frequencies is limited, as you are only taking up one frequency instead of two.

Enclosure

The receiver comes in a robust fibreglass enclosure which complies with protection class IP65.

Recommended transmitters

- D2801 MIDI
- D2801 MIDI Extended
- D2012 Hand-Held Transmitter



General information	
Dimensions	220 x 120 x 90 mm
Temperature range	-25° – 70°C
Protection class	IP65
Radio transmission	
Frequency	406 – 472 MHz
Power supply	
Supply voltage	24 VDC
Field busses	
Datek CAN	
CANopen	
Sauer-Danfoss +1	
OEM adjustments	
Profibus DP-V1	
Outputs	
Digital outputs	7
Field bus	Limited by the transmitter
Feedback	
Digital inputs	6
Field bus	Analogue/Digital
Alarm messages	65,536



The D6003 receiver

The Datek D6003 receiver is designed to control hydraulic applications safely. This receiver is suitable for various proportional applications such as truck cranes, drilling rigs, piling machines, concrete chutes/pumps, etc. Receiver output signals are adjustable to accommodate current- and/or voltage-controlled hydraulic valves from various manufacturers.

Robust and easy to maintain

The receiver is designed for harsh working environments and a long service life. Separate circuit boards and LEDs indicating control functions, information flow and operating status make any troubleshooting easy. All connectors and relays are socket-mounted, making it easy to identify and replace the defective module, thereby avoiding longer downtime. The receiver is mounted inside a sturdy stainless-steel cabinet that complies with protection class IP65. The radio board

and logic board are mounted in an aluminium case inside the receiver cabinet door. The front of the case is fitted with transparent perspex, making it easy to see the operating status on each board. A quick-release coupling keeps the case in place, so it can easily be removed. This facilitates fast and easy replacement of important electronics, the moving of electronic devices between different receivers, troubleshooting in a more suitable location or sending the unit in for service. All outputs are protected against transients and short circuits.

Radio transmission

The receiver's frequency is adjusted to the required frequency band. For frequency-shift transmitters, the receiver scans the frequency band until it finds the relevant transmitter with the correct ID code and protocol.

Product benefits

- Easy to install and maintain
- Can be customised for various applications and according to preference
- The use of a unique digital protocol and verification by double processors ensures safety
- Online calibration for optimal control of proportional applications
- Designed for challenging environments and reliable operation. The receiver complies with protection class IP65 and is resistant to chemicals, cold, heat and humidity
- Backwards compatibility makes it possible to use the D6003 in place of previous receiver models

Comprehensive safety

Datek uses synchronous data transmission, which means that each bit of data is checked very carefully. Even the smallest deviation from the norm is detected, and then the entire data packet that has been received is rejected. Each system has a unique ID code. If the transmitter's ID code does not match the receiver's, radio communication will never be established.

Both the protocol and its checksum are digitally verified by dual processors using different software. This provides what is known as a redundancy check. If the processors interpret the protocol differently, they immediately shut down all outputs. Such safety features as digitally verified transmission and redundancy checking are just two of the innovations which Datek has pioneered in the area of radio remote control. Since its founding in 1979 Datek has focused on developing safe radio remote controls, something we still do and will continue to do.

Feedback

The receivers in this series can be provided with two-way communication. Feedback to the transmitter unit is obtained through semi-duplex, which means that only one frequency is utilised for both control signals to the receiver and feedback data. This is advantageous if availability of frequencies is limited, as you are only taking up one frequency instead of two.

Output signals

The receiver's standard design has eight proportional and thirteen digital output signals. All functions can be controlled simultaneously. If control of more functions is needed, the receiver can either be extended or functions can be shifted.

Online calibration

From the transmitter, many parameters can easily be calibrated online to ensure optimal control. Calibrated values, such as initial, maximum and micro speeds, are stored in three different memory banks. By means of a switch on the transmitter, the operator can access these memory banks to select a particular setting or suitable operating properties. The calibrated values are stored in the receiver. If a new transmitter is ordered for the system, all settings are saved, and the operating properties remain the same. A further number of parameters can be preconfigured from the factory or adjusted by authorised personnel either online or using a PC. These include acceleration, retardation, linearity, cruise control and overloads. A system's specific characteristics can be copied to another system or to a PC.

D6003K – the more compact receiver

For Danfoss hydraulics, a more compact version of the receiver with a sturdy fibreglass enclosure is available. This receiver measures only 220 x 120 x 90 mm and is therefore suitable for installation in confined spaces. The receiver can control eight proportional and 21 digital functions simultaneously.



General information	
Dimensions	300 x 200 x 160 mm
Temperature range	-25° – 70° C
Protection class	IP65
Radio transmission	
Frequency	406 – 472 MHz
Cable control	
Technology	2-wire
Length	≤200 metres (standard 10 m)
Power supply	
Supply voltage	12/24 VDC
Outputs	
Proportional outputs	8
Digital outputs	13
Feedback	
Digital inputs	6
Digital/analogue inputs	8

Options

- Pre-assembled cables with connectors for hydraulic valves and other functions
- Extension cable for aerial
- Cable control between transmitter and receiver

Recommended transmitters

- D2801 MIDI
- D2801 MIDI Extended
- D2012 Hand-held transmitter