

Industrial switchgear with radio technology



SAFE SWITCHGEAR FOR DEMANDING AND
CRITICAL APPLICATIONS

// Control technology / catalogue



4 The Company

PRODUCTS



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STEUTE SCHALTGERÄTE IN LÖHNE
SAFE SWITCHGEAR FOR COMPLEX AND CRITICAL APPLICATIONS





Our location: A good place to live and to work. Löhne, Westphalia, Germany. Embedded between the »Wiehengebirge« and the »Teutoburger Wald«. This is the location of steute Schaltgeräte GmbH & Co. KG. Here, switchgear is designed and produced for explosion protection, medical equipment and control technology.

Historians know our region as the area where the Battle of Varus took place in the year 9 AD. About 1700 years later, the Treaty of Westphalia marked the end of the Thirty Years' War. Gourmets love Westphalian sausage, walkers the beautiful landscape. Briefly: it's a good place to live. It's also a good place to work. The industrial culture of Westphalia is mostly characterised by SME companies; the region is also the home of many hidden champions and world-market leaders, specialist machine and system manufacturers, as well as electronic and connecting technology.

This means we have many important suppliers, customers and partners practically »on our doorstep«. And even so, our employees travel a great deal all over the world. This is because renowned companies in all industrial markets use switchgear by steute when the focus is on high quality and availability. And when they appreciate co-operating with suppliers who can adapt flexibly to their requests.



STEUTE SWITCHGEAR MEETS THE HIGHEST QUALITY REQUIREMENTS



Today, the company offers a homogenous product range, drawing on its wide know-how and characterised by a high degree of technological synergy.

180 employees attentively develop and manufacture electrical and electronic components for high-standard and explosive safety applications. These applications comply with established international directives, laws, standards and regulations. In this context, key significance is attributed to a close cooperation with technical certification institutions.

With its high standards and specific orientation, steute lives and breathes the following three QM systems:

- DIN EN ISO 9001: 2000
- DIN EN ISO 13485: 2003
- Certificate of Quality Assurance acknowledgement in accordance with the 94/9/EC Directive (ATEX)

On the following pages you will find an overview of our comprehensive range of industrial switchgear with radio technology, each of which can be modified in accordance with customer-specific requirements.

Talk to us. Let us help you find what you are looking for.
The steute team.



Optimise processes

This goal is playing an increasingly important role in the definition and design of industrial systems and machines. Radio technology offers many advantages: flexibility of installation, information about moving and rotating parts, reduction in installation and standstill times, sensor technology directly in the manufacturing process, early fault detection by integrated radio sensors. Maintenance-free radio sensors allow for many different applications and are revolutionising the processing sector.

Increase process quality

For example with radio position switches that are applied where moving parts on machines and systems must be positioned, controlled and monitored.

Reduce process times

For example with pull-wire switches that are mounted in the right place in no time at all and are applied to start machines or to open and close electrically-operated doors, gates and fences.

Optimise process costs

For example with wireless door handle switches that are applied for the unlocking of solenoid interlocks on guards and doors.

Sensing range

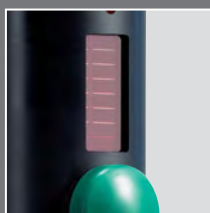
Sight connection

max. 300 m outside
max. 30 m in walkways
max. 100 m in halls
max. 30 m through 5 walls

Cement walls,
dry wood
Brick walls
Steel concrete
walls/ceilings
Note

max. 20 m through 3 walls
max. 10 m
through 1 ceiling
Fire protection walls,
hoistways, stairways,
as well as supply areas
are regarded as shadings.

Door handle with
solar cell



Design and mode of operation

Our industrial switchgear are based on the innovative EnOcean radio technology. The energy required for the radio technology is generated from the process or ambient energy. Examples for this freely available process energy are switching processes, light, vibrations or even temperature differences. Through this method switchgear can be operated without batteries – they are self-sustaining and are therefore wireless and maintenance-free.

steute offers radio industrial switchgear for the most various applications. The radio switches draw their energy from a powerful, miniaturised solar cell. Inside the compact EnOcean radio module integrated in the switch there is also a tiny energy supply which secures the autarkic function during day/night cycles or shift operation in artificial lighting up to 2 days in darkness.

The signal transmission is carried out on the licence-free SRD band (Short Range Devices) at 868 MHz at 10 mW transmission power. On actuation of the switchgear a very short telegram is spontaneously sent out that contains an individual 32 bit identification number and the usable information. A safety protocol and multi-transmission of this information guarantees highest transmission safety. As an additional safety feature a periodic presence signal is sent in order to recognise interferences in the system early enough.

The radio signals are processed by receiver units with integrated EnOcean radio technology. Assessment of the switching information is carried out in the compatible receiver solution. Therefore specific industrial receiver solutions with digital outputs for direct signal evaluation, as well as EnOcean receiver terminals for industrial control units, e.g. the WAGO-System 750 are available.

We develop specific switchgear concepts that use other energy sources for the design of maintenance-free radio solutions. For example the energy drawn from the actuation of the switch itself. For special cases long-lived batteries that have stand-by times of up to 10 years can also be used. Discuss your requirement profile with us.

Door handle switch
TGF



Position switch
EF 41



Pull-wire switch
EF 41 Z



// WE DEVELOP ENERGY AUTARKIC SWITCHGEAR

How the transmission works

Technical details transmitter

Function

Door handle switch:
On actuation a radio telegram is sent out. The evaluated radio signals required to unlock a safety solenoid interlock.

Function

Position switch:
On actuation a radio telegram is sent out.

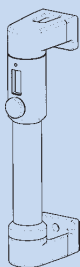
Function

Pull-wire switch:
On pulling wire a radio telegram is sent out.

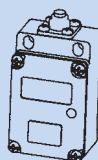
Power supply: Solar cells/electrodynamic energy converter



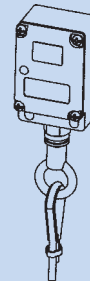
Radio switchgear



Switch actuated



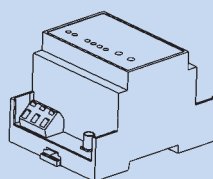
Contact closed



High-signal at receiver

Power supply
24 VDC

Transmission values
Relay outputs
potential-free
4-channel
868 MHz frequency band



Teaching mode
Assignment
Transmitter/receiver

External antenna
SMA plug-in connector

Radio receiver

// Series FE 1

// FE 1

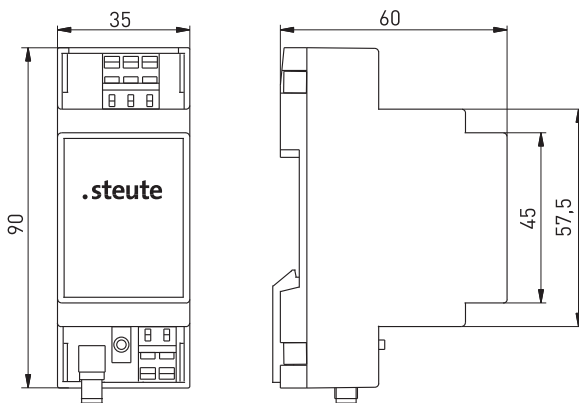


Features/options

- Thermoplastic enclosure
- EnOcean standard
- 1-channel: potential-free relay outputs
- 1 change-over contacts, max. 16 A, NPN- or PNP output
- Transmitter/receiver assignment by teaching mode
- LEDs for indication of switching state
- 868 MHz frequency band
- 35 mm enclosure
- SMA plug-in connector for external antenna

Technical Data

Standards	IEC 60068-2-6; IEC 60068-2-27
Number of channels	1
Mounting	DIN rail mounting
Screw terminals	terminals with CAGE CLAMP WAGO Series 236: 0.08 ... 2.5 mm ² AWG 28-14 (incl. conductor ferrules)
Protection class	IP 20 per IEC/EN 60529
Operating voltage U_e	24 VDC -15 % ... +20 %
Operating current I_e	max. 0,08 A
Inputs	1 radio channel, max. 10 transmitters per channel
Outputs	1 change-over contact (Relay), NPN or PNP (transistor)
Load current	1 W: 16 A, NPN, PNP: 0,2 A
Switching voltage	1 W: 230 VAC, NPN, PNP: U_B -2,5 VDC
Utilisation category	1 W: AC-12, NPN, PNP: DC-13
Display	green LED for control voltage, yellow LED for switching conditions
EMC rating	per EMC Directive
Switching frequency	max. 9000 telegrams at repetitions/h
Degree of pollution	2 per DIN VDE 0110
Ambient temperature	0 °C ... +55 °C
Storage and transport-temperature	-25 °C ... +85 °C
Vibration/Shock resistance	per IEC 60068-2-6 and IEC 60068-2-27
External antenna	always required for optimum sensing range
Note	inductive loads (contactors, relays etc.) are to be suppressed by suitable circuitry.



Arrangement of receiver and switch antenna

Optimum mounting



Possible mounting



Unsuitable mounting



Note

The antenna must be mounted on a metal plate of min. 250 x 250 mm size.

Ordering details

FE 1-1W

change-over contact (NPN, PNP transistor output)
1-channel
radio receiver

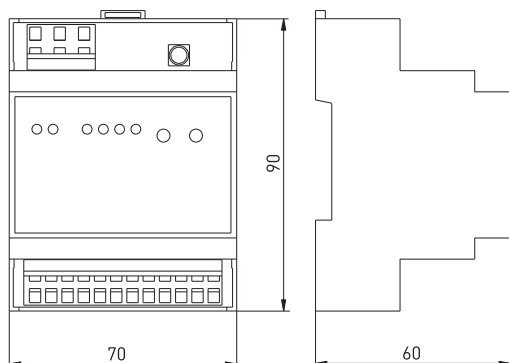
RF magnet antenna with SMA plug-in connector available as accessory, Art-No. 01.08.0254.

Mobile field strength indicator EPM 100 for radio field planning is available, Art-No. 01.08.0267.

Radio receiver

// Series WAGO 789

// WAGO 789



Arrangement of receiver and switch antenna

Optimum mounting



Possible mounting



Unsuitable mounting



Note

The antenna must be mounted on a metal plate of min. 250 x 250 mm size.

Features/options

- Thermoplastic enclosure
- EnOcean standard
- 4-channel: potential-free relay outputs
- 4 NO contacts, max. 16 A, 4 change-over contacts, max. 8 A
- Transmitter/receiver assignment by teaching mode
- LEDs for indication of switching state
- 868 MHz frequency band
- 70 mm enclosure
- SMA plug-in connector for external antenna

Technical Data

Standards	IEC 60068-2-6; IEC 60068-2-27
Number of channels	4
Mounting	DIN rail mounting
Screw terminals	terminals with CAGE CLAMP WAGO Series 236: 0.08 ... 2.5 mm ² AWG 28-14 (incl. conductor ferrules)
Protection class	IP 20 per IEC 60529
Protocol	EnOcean
Ambient temperature	-0 °C ... +55 °C
Storage and shipping temperature	-25 °C ... +85 °C
Switching frequency	max. 9000 telegrams at repetitions/h
Operating voltage U _e	24VDC -15 % ... +20 %
Operating current I _e	max. 0.1A
Inputs	radio, max. 4 transmitters
Outputs	4 relay outputs: type depending 4 NO contacts: 13-14 , 23-24, 33-34, 43-44 4 change-over contacts: 11-12/14 , 21-22/24, 31-32/34, 41-42/44 4 NO: 16A; 4 change-over: 8A
Load current/channel	green LED for control voltage, display of switching conditions
Display	per EMC Directive
EMC rating	2 per DIN VDE 0110
Degree of pollution	
Vibration/shock resistance	per IEC 60068-2-6 and IEC 600068-2-27
External antenna	always required for optimum sensing range
Note	inductive loads (contactors, relays etc.) are to be suppressed by suitable circuitry.

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Ordering details

WAGO 789-601

4 NO contacts,
-602: 4 change-over contacts
Series

RF magnet antenna with SMA plug-in connector available as accessory, Art-No. 01.08.0254.

Mobile field strength indicator EPM 100 for radio field planning is available, Art-No. 01.08.0267.

Features/options

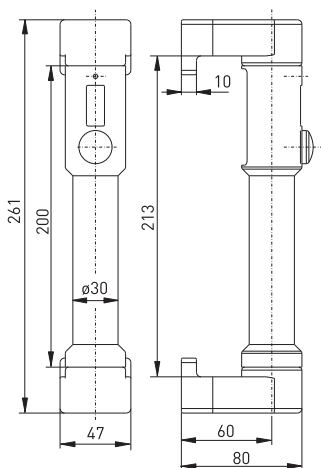
- Thermoplastic enclosure
- Enabling push button
- Integrated solar cell, no battery/rechargeable battery required
- Serial data output, output signal high on actuation
- EnOcean-protocol
- Data rate 120 kbps
- No wiring and pipe laying required
- Multi-network capable
- Easy programming of receiver

// TGF



Technical Data

Enclosure	glass-fibre reinforced thermoplastic POM
Protection class	IP 67 per IEC 60529
Switching system	push button
Protocol	EnOcean
Ambient temperature	-20 °C ... +65 °C
Switching frequency	approx. 6000 telegrams at repetitions/h
Voltage supply	Solar cell
Frequency	868.3 MHz
Transmission power	max. 10 mW
Data rate	120 kbps
Bandwidth channel	280 kHz
Sensing range	max. 300 m outside, max. 30 m inside
Power consumption in sleep mode	approx. 25 nA
Switching on with empty energy supply	< 10 min at 400 lx
Charging time with empty energy supply	approx. 6 h at 400 lx, approx. 1.5 h at 1000 lx
Charging time at operation limit	1 h at 400 lx, approx. 15 min at 1000 lx
Operation time in darkness	approx. 48 h, with presence signal every 3h, when the goldcap is totally charged at 1000 lx



Ordering details

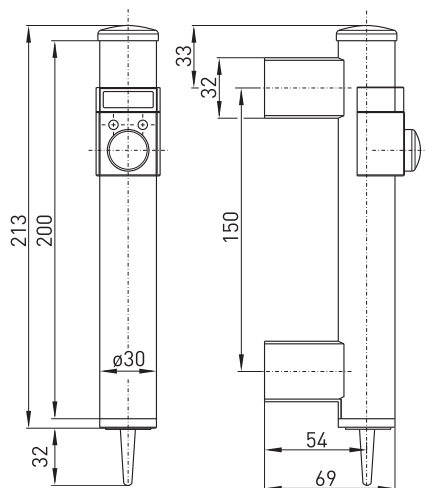
TGF

F radio technology
Door handle switch

Features/options

- Metal enclosure
- Enabling push button
- Integrated solar cell, no battery/rechargeable battery required
- Serial data output, output signal high on actuation
- EnOcean-protocol
- Data rate 120 kbps
- No wiring and pipe laying required
- Multi-network capable
- Easy programming of receiver

// TGFM



Technical Data

Enclosure	Aluminium anodised, stainless steel or aluminium black anodised
Protection class	IP 67 per IEC 60529
Switching system	push button
Protocol	EnOcean
Ambient temperature	-20 °C ... +65 °C
Switching frequency	approx. 6000 telegrams at repetitions/h
Voltage supply	Solar cell
Frequency	868.3 MHz
Transmission power	max. 10 mW
Data rate	120 kbps
Bandwidth channel	280 kHz
Sensing range	max. 300 m outside, max. 30 m inside
Power consumption in sleep mode	approx. 25 nA
Switching on with empty energy supply	< 10 min at 400 lx
Charging time with empty energy supply	approx. 6 h at 400 lx, approx. 1.5 h at 1000 lx
Charging time at operation limit	1 h at 400 lx, approx. 15 min at 1000 lx
Operation time in darkness	approx. 48 h, with presence signal every 3h, when the goldcap is totally charged at 1000 lx

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Ordering details

TGFM

M modular design
F radio technology
Door handle switch

Other handle lengths and several push buttons available on request.

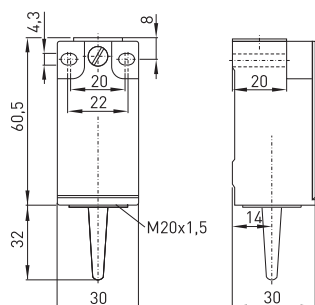
Features/options

- Thermoplastic enclosure
- Transversely slotted mounting holes
- To EN 50 047
- Serial data output, output signal high on actuation
- EnOcean-protocol
- Data rate 120 kbps
- No power supply, no wiring and pipe laying required
- Multi-network capable
- Easy programming of receiver

Technical Data

Standards	IEC/EN 60947-5-1
Enclosure	Glassfibre reinforced thermoplastic, self-extinguishing UL 94-V0
Cover	Glassfibre reinforced thermoplastic, self-extinguishing UL 94-V0
Protection class	IP 67 per IEC 60529
Protocol	EnOcean
Ambient temperature	-20 °C ... +65 °C
Switching frequency	approx. 6000 telegrams at repetitions/h
Voltage supply	Electrodynamic energy generator
Frequency	868.3 MHz
Transmission power	max. 10 mW
Data rate	120 kbps
Bandwidth channel	280 kHz
Sensing range	max. 300 m outside, max. 30 m inside
Actuating time	min. 80 ms
Note	no presence signal available

// EF 95



Contact travel

1 NO contact EF 95



Ordering details

EF 95 WH

Actuator H (R, D, DS, etc. ...)
Watertight collar
Series
F radio technology

Position switch with radio technology

// Series EF 95, actuators

Features/options

Plunger W

- Actuator type B per DIN EN 50 047

Cap WK

- Large actuating surface
- Safe switching also with unprecise actuation
- Suitable for manual actuation
- Watertight collar for protection against penetration of dirt

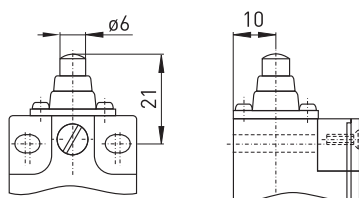
Roller plunger R/ long roller plunger RL

- R: actuator type C per DIN EN 50 047
- Wear-resistant thermoplastic roller
- Metal roller available on request
- Actuator can be repositioned by 90°

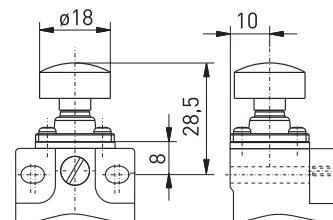
Offset roller lever WH/WHM

- Actuator type E per DIN EN 50 047
- Wear-resistant thermoplastic roller
- WH: thermoplastic lever, WHM: metal lever
- Actuator can be repositioned by 90°
- Metal roller available on request

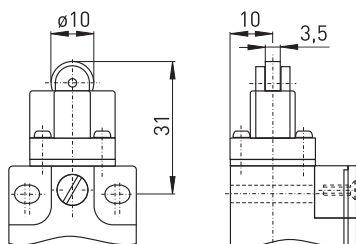
// Plunger W



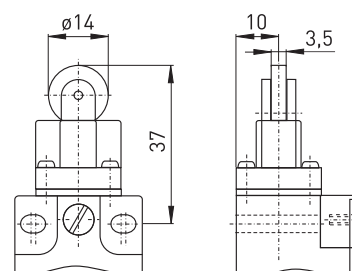
// Cap WK



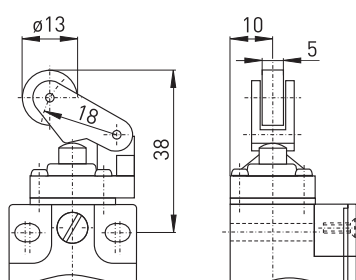
// Roller plunger R



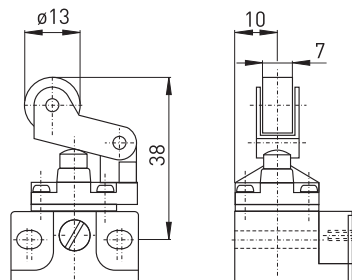
// Long Roller plunger RL



// Roller lever WH



// Metal roller lever WHM



Position switch with radio technology

// Series EF 95, actuators

Features/options

Long metal roller lever WHLM

- Wear-resistant thermoplastic roller
- Actuator can be repositioned by 4 x 90°

Thermoplastic roller lever 4K

- Wear-resistant thermoplastic roller
- Actuator can be repositioned by 4 x 90°

Parallel roller lever WPH/WPHM

- WPH: thermoplastic lever
- WPHM: metal lever

- Actuator can be repositioned by 4 x 90°

- Actuation from below parallel to plunger axis

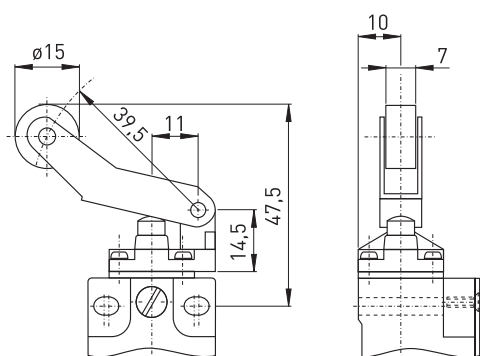
Rocking offset roller lever WHKM

- Wear-resistant thermoplastic roller
- Actuator can be repositioned by 4 x 90°
- Actuation only possible from one side
- Free movement of actuator from other side

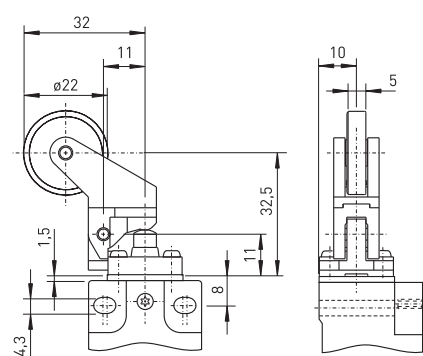
Rocking lever D

- Actuator can be repositioned by 4 x 90°

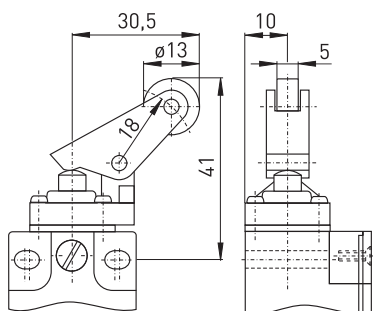
// Long metal roller lever WHLM



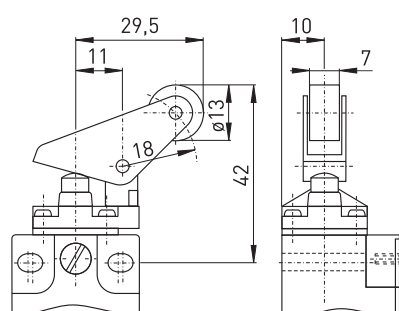
// Thermoplastic roller lever 4K



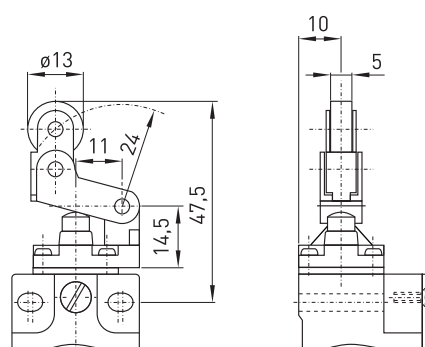
// Parallel roller lever WPH



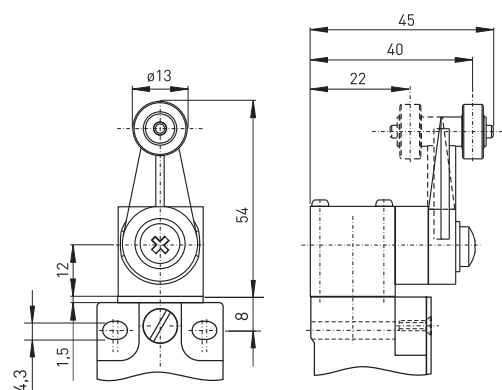
// Metal parallel roller lever WPHM



// Rocking offset roller lever WHKM



// Rocking lever D



Features/options

Adjustable rocking lever DS

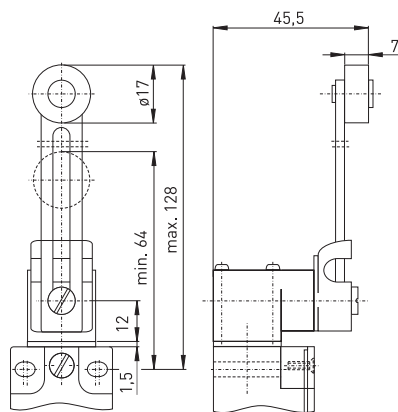
- Position of roller can be adjusted
- Wear-resistant thermoplastic roller
- Actuator can be repositioned by 4 x 90°
- Metal roller available on request

Features/options

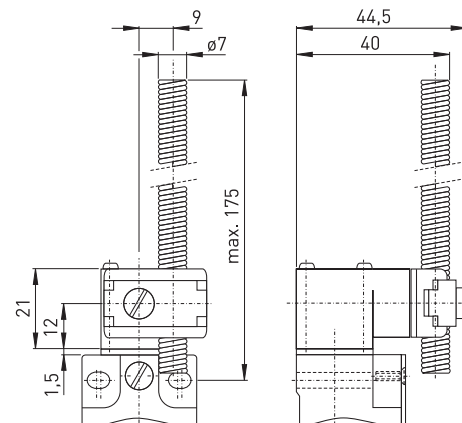
Spring-rod lever DF/rod lever DD

- Lever angle adjustable in 10° steps
- Actuator can be repositioned by 4 x 90°

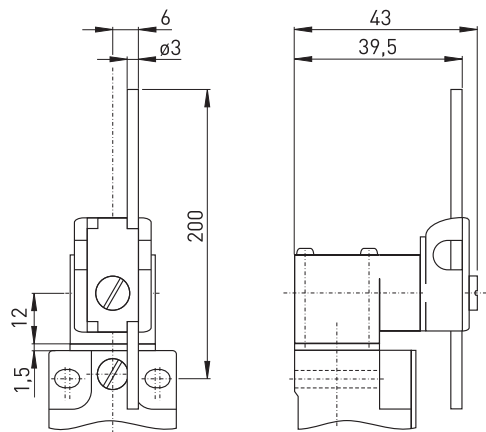
// Adjustable rocking lever DS



// Spring-rod lever DF



// Rod lever DD



Features/options

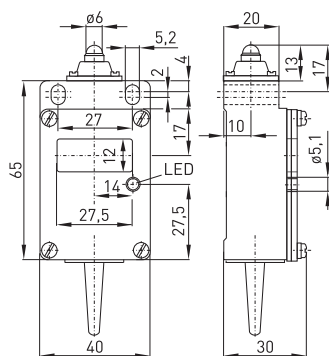
- Metal enclosure
- Integrated solar cell, no battery/rechargeable battery required
- Serial data output, output signal high on actuation
- EnOcean-protocol
- Data rate 120 kbps
- No wiring and pipe laying required
- Multi-network capable
- Easy programming of receiver

// EF 41



Technical Data

Standards	IEC/EN 60947-5-1
Enclosure	Aluminium die-cast, enamelled
Cover	Steel, enamelled
Protection class	IP 65 per IEC 60529
Protocol	EnOcean
Ambient temperature	-20 °C ... +65 °C
Switching frequency	approx. 6000 telegrams at repetitions/h
Voltage supply	Solar cell
Frequency	868.3 MHz
Transmission power	max. 10 mW
Data rate	120 kbps
Bandwidth channel	280 kHz
Sensing range	max. 300 m outside, max. 30 m inside
Power consumption in sleep mode	approx. 25 nA
Switching on with empty energy supply	< 10 min at 400 lx
Charging time with empty energy supply	approx. 6 h at 400 lx, approx. 1.5 h at 1000 lx
Charging time at operation limit	1 h at 400 lx, approx. 15 min at 1000 lx
Operation time in darkness	approx. 48 h, with presence signal every 3h, when the goldcap is totally charged at 1000 lx
Actuating time	min. 80 ms



Contact travel

1 NO contact EF 41



Ordering details

EF 41 WH

Actuator H (R, TK, D, etc. ...)
Watertight collar
Series 41
F radio technology

Position switch with radio technology

// Series EF 41, actuators

Features/options

Plunger/ball plunger KU

- Vertical or actuation from side possible
- Actuator with built-in stainless steel ball
- Exact repeatability of the switching point

Plunger with watertight collar W

- Watertight collar for protection against penetration of dirt

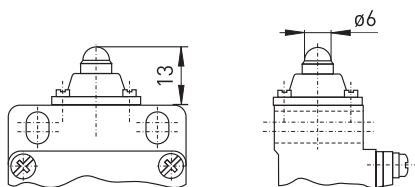
Adjustable plunger ST/WST

- Length-adjustable metal plunger via M4 screw
- For fine adjustment of switching travel

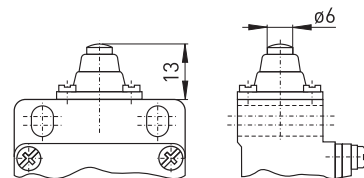
Cap WK

- Large actuating surface
- Safe switching also with unprecise actuation
- Suitable for manual actuation
- Watertight collar for protection against penetration of dirt

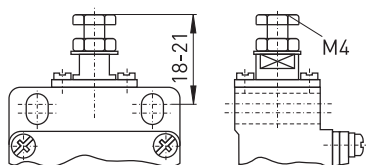
// Plunger



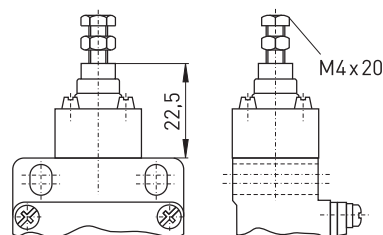
// Plunger with watertight collar W



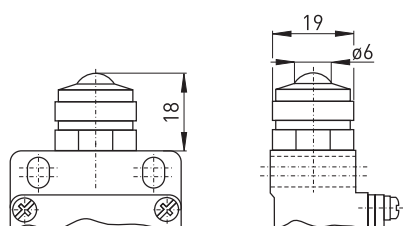
// Adjustable plunger ST



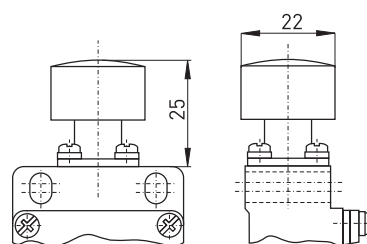
// Adjustable plunger collar WST



// Ball plunger KU



// Cap WK



Position switch with radio technology

// Series EF 41, actuators

Features/options

Roller plunger R

- Metal roller
- Actuator can be repositioned by 90°

Roller plunger collar WR

- Wear-resistant thermoplastic roller
- Actuator can be repositioned by 90°
- Watertight collar for protection against penetration of dirt
- Metal roller available on request

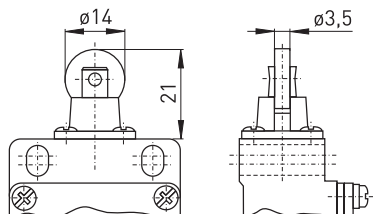
Roller lever H/WH/HL/WHL

- Wear-resistant thermoplastic roller
- Actuator head can be repositioned by 4 x 90°
- Metal roller available on request

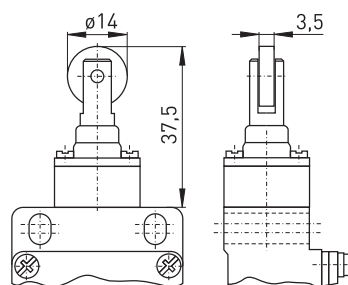
Note

Actuation of H, WH, HL and WHL actuators from the left should be avoided, since this reduces the mechanical life of the position switch.

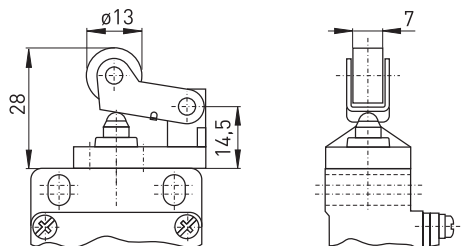
// Roller plunger R



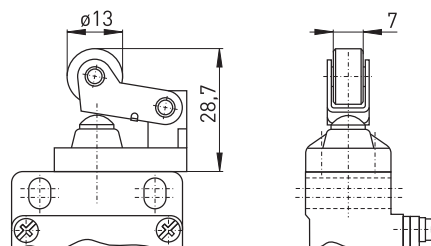
// Roller plunger collar WR



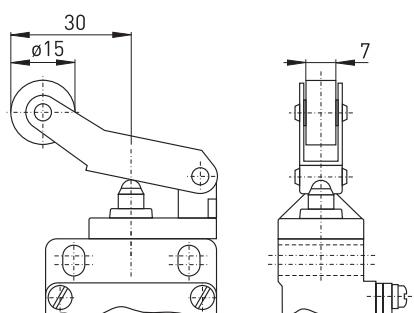
// Roller lever H



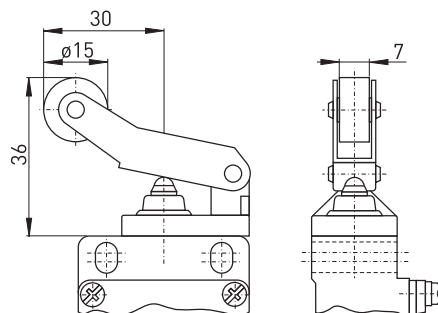
// Roller lever with collar WH



// Long roller lever HL



// Long roller lever collar WHL



Features/options

Parallel roller PH/WPH

- Actuation from below parallel to plunger axis
- Wear-resistant thermoplastic roller
- Actuator head can be repositioned by $4 \times 90^\circ$

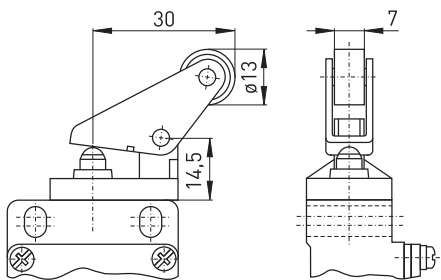
Rocking offset roller HK/WHK

- Actuation only possible from one side
- Free movement of actuator from other side
- Wear-resistant thermoplastic roller
- Actuator head can be repositioned by $4 \times 90^\circ$

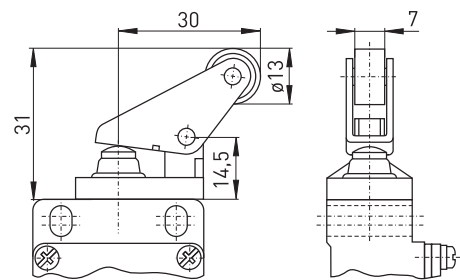
Rocking lever D/DL

- Wear-resistant thermoplastic roller
- Lever angle adjustable in 10° steps
- Actuator can be repositioned by 180°

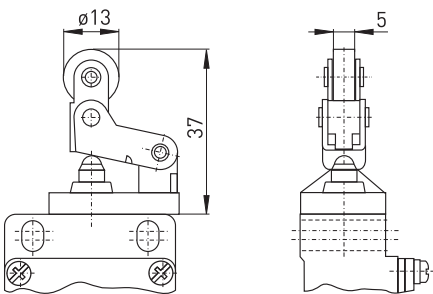
// Parallel roller lever PH



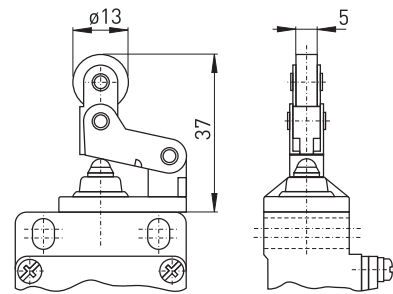
// Parallel roller lever collar WPH



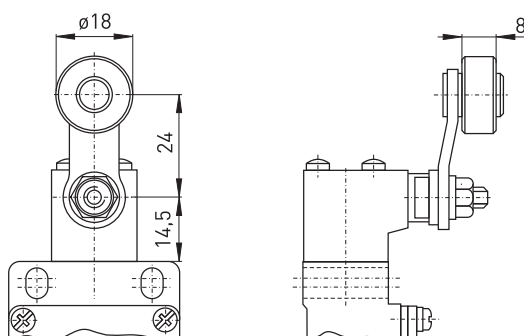
// Rocking offset roller lever HK



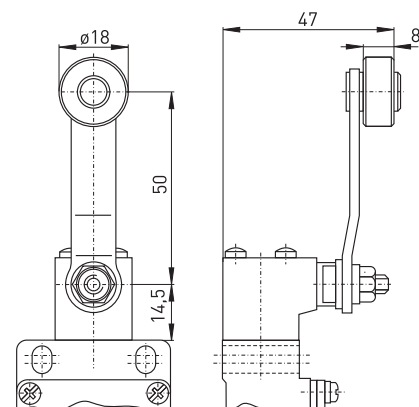
// Rocking offset roller lever collar WHK



// Rocking lever D



// Long rocking lever DL



Position switch with radio technology

// Series EF 41, actuators

Features/options

Adjustable roller lever DS

- Wear-resistant thermoplastic roller
- Lever angle adjustable in 10° steps
- Actuator can be repositioned by 180°
- Metal roller available on request

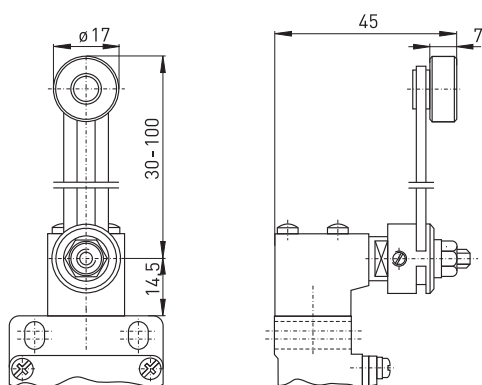
Spring-rod lever DF

- Lever angle adjustable in 10° steps
- Actuator can be repositioned by 180°

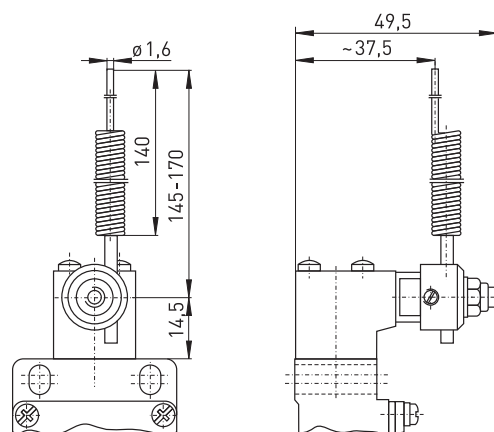
Wire lever DD

- Wear-resistant thermoplastic tip
- Lever angle adjustable in 10° steps
- Actuator can be repositioned by 180°

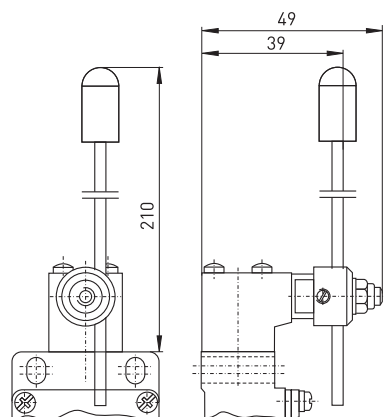
// Adjustable rocking lever DS



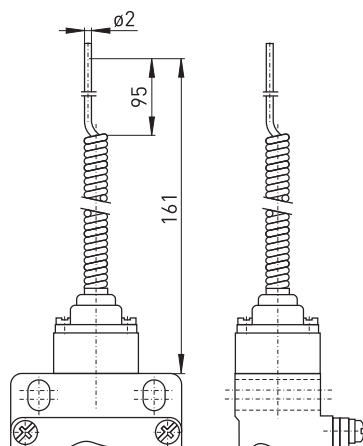
// Spring-rod lever DF



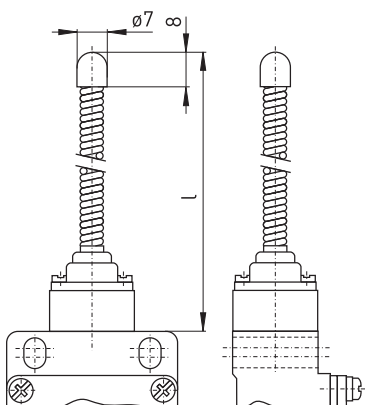
// Rod lever DD



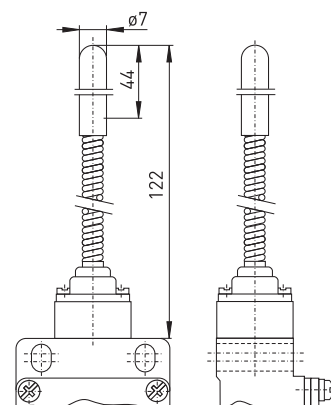
// Long spring rod TL

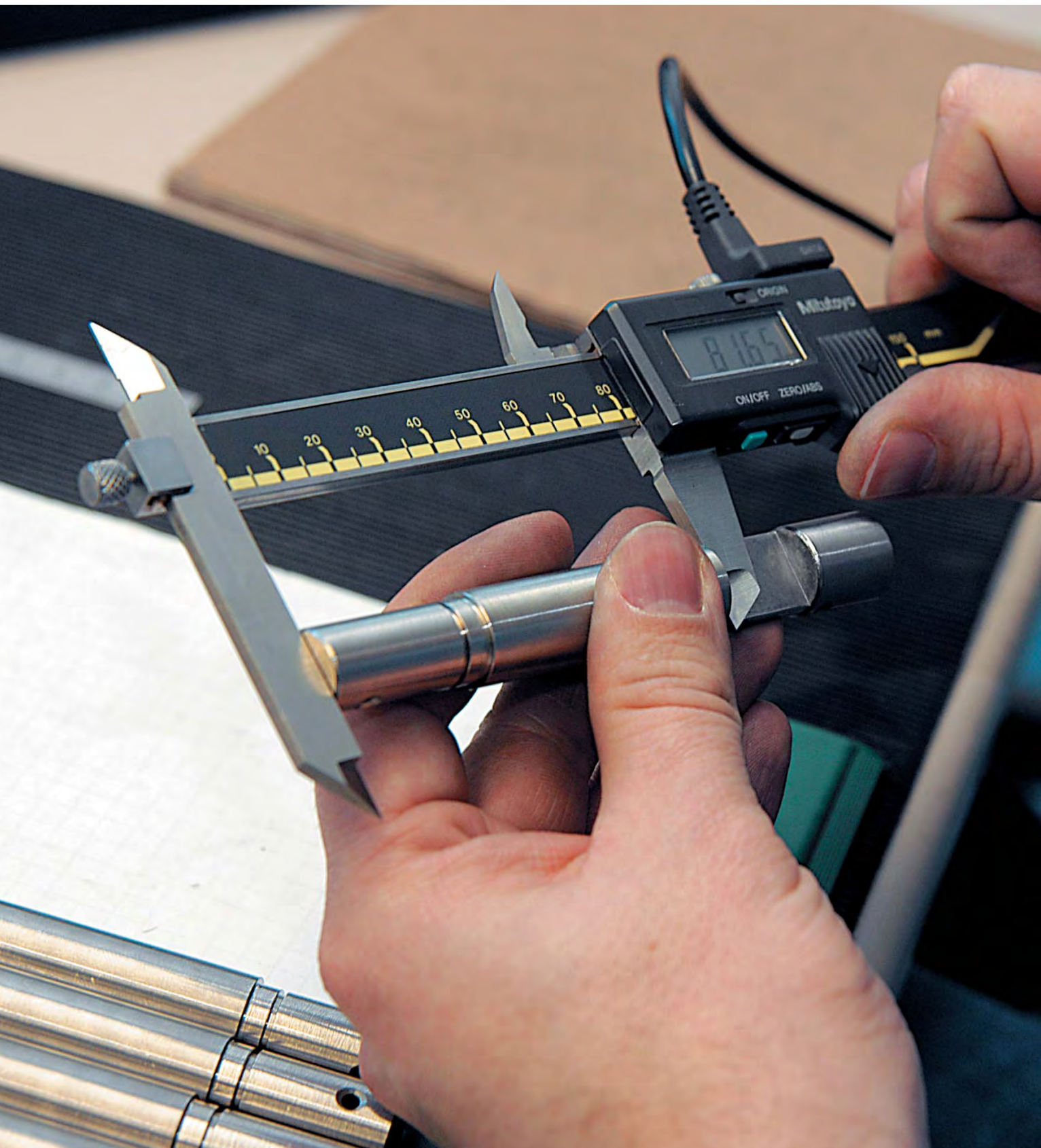


// Spring rod with steel tip TF/TFL



// Spring rod with plastic rod TK





Features/options

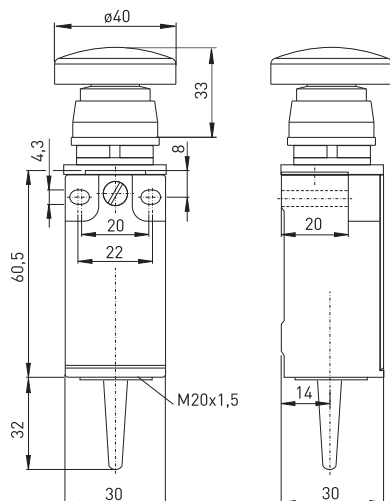
- Thermoplastic enclosure
- Mountings to EN 50 047
- Serial data output, output signal high on actuation
- EnOcean-protocol
- Data rate 120 kbps
- No power supply, no wiring and pipe laying required
- Multi-network capable
- Easy programming of receiver

// EF 95 RS SW



Technical Data

Standards	IEC/EN 60947-5-1
Enclosure	Glassfibre reinforced thermoplastic, self-extinguishing UL 94-V0
Cover	Glassfibre reinforced thermoplastic, self-extinguishing UL 94-V0
Protection class	IP 67 per IEC 60529
Protocol	EnOcean
Ambient temperature	- 20 °C ... + 65 °C
Switching frequency	approx. 6000 telegrams at repetitions/h
Voltage supply	Electrodynamic energy generator
Frequency	868.3 MHz
Transmission power	max. 10 mW
Data rate	120 kbps
Bandwidth channel	280 kHz
Sensing range	max. 300 m outside, max. 30 m inside
Actuating time	min. 80 ms
Note	no presence signal available

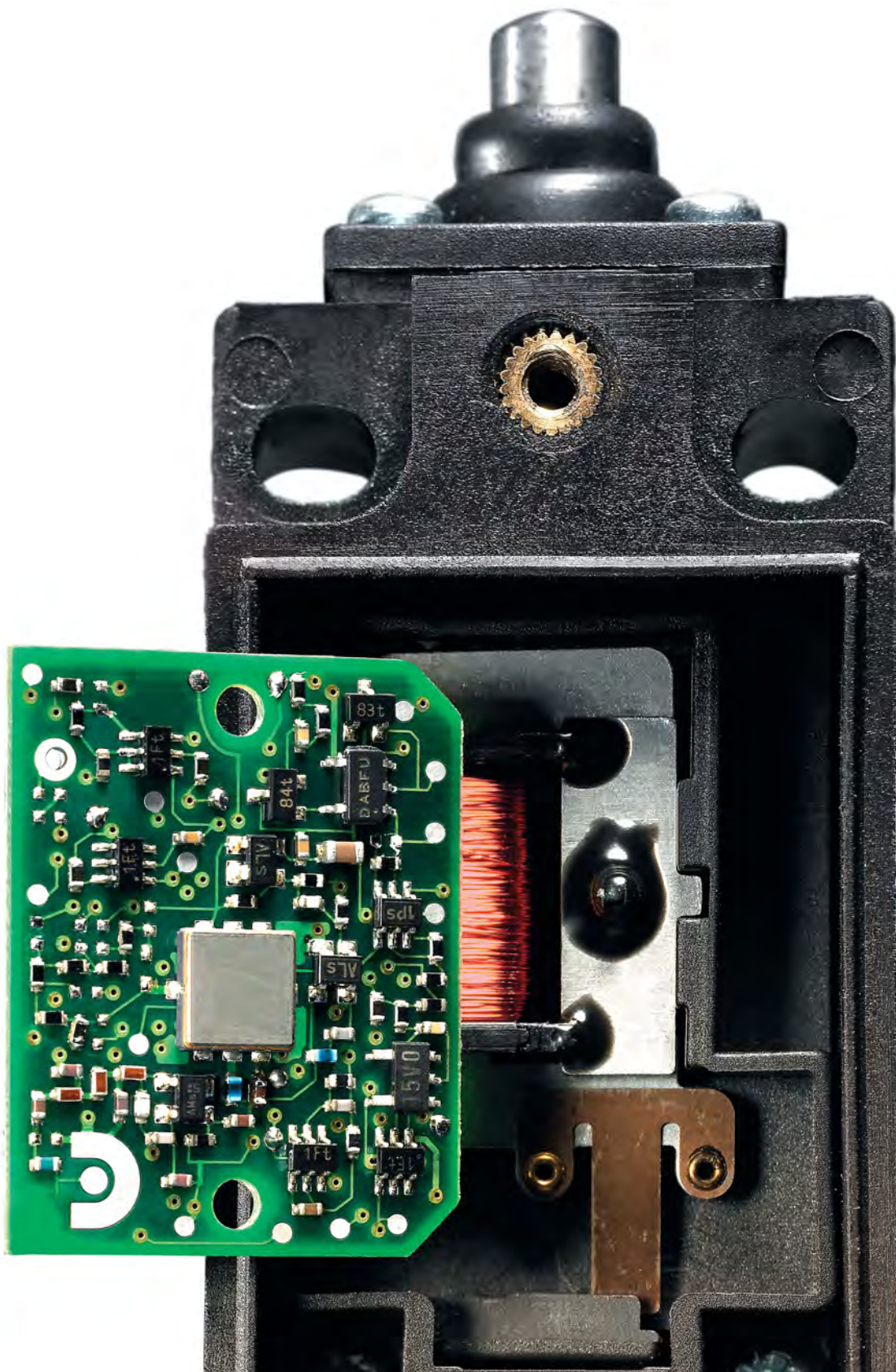


Ordering details

EF 95 RS SW

Actuator RS SW
(different push-buttons available)
Series
F radio technology

PRODUCTION PROCESS
FIXING THE RADIO CIRCUIT BOARD



Pull-wire switch with radio technology // Series EF 95 WH/90°

Malux

Features/options

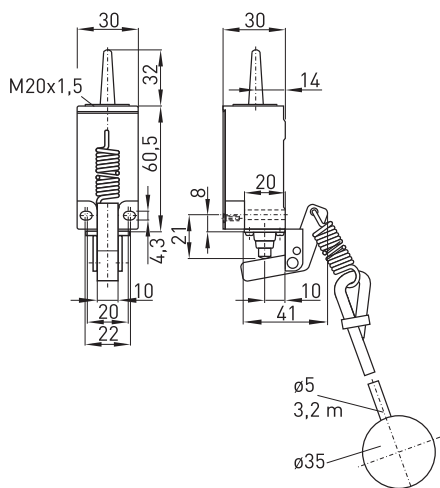
- Thermoplastic enclosure
- Transversely slotted mounting holes
- To EN 50 047
- Serial data output, output signal high on actuation
- EnOcean-protocol
- Data rate 120 kbps
- No power supply, no wiring and pipe laying required
- Multi-network capable
- Easy programming of receiver

// EF 95 WH/90°



Technical Data

Standards	IEC/EN 60947-5-1
Enclosure	Glassfibre reinforced thermoplastic, self-extinguishing UL 94-V0
Cover	Glassfibre reinforced thermoplastic, self-extinguishing UL 94-V0
Protection class	IP 67 per IEC 60529
Protocol	EnOcean
Ambient temperature	-20 °C ... +65 °C
Switching frequency	approx. 6000 telegrams at repetitions/h
Voltage supply	Electrodynamic energy generator
Frequency	868.3 MHz
Transmission power	max. 10 mW
Data rate	120 kbps
Bandwidth channel	280 kHz
Sensing range	max. 300 m outside, max. 30 m inside
Actuating time	min. 80 ms
Note	no presence signal available



Contact travel

1 NO contact EF 95



Ordering details

EF 95 WH/90°

Actuator H/90°
Watertight collar
Series
F radio technology

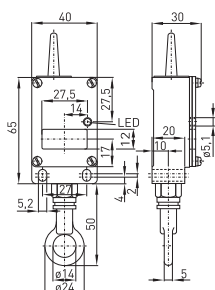
Pull-wire switch with radio technology // Series EF 41 Z

Malux

Features/options

- Metal enclosure
- Integrated solar cell, no battery/rechargeable battery required
- Serial data output, output signal high on actuation
- EnOcean-protocol
- Data rate 120 kbps
- No wiring and pipe laying required
- Multi-network capable
- Easy programming of receiver

// EF 41 Z



Technical Data

Standards	IEC/EN 60947-5-1
Enclosure	Aluminium die-cast, enamelled
Cover	Steel, enamelled
Protection class	IP 65 per IEC 60529
Protocol	EnOcean
Ambient temperature	-20 °C ... +65 °C
Switching frequency	approx. 6000 telegrams at repetitions/h
Voltage supply	Solar cell
Frequency	868.3 MHz
Transmission power	max. 10 mW
Data rate	120 kbps
Bandwidth channel	280 kHz
Sensing range	max. 300 m outside, max. 30 m inside
Power consumption in sleep mode	approx. 25 nA
Switching on with empty energy supply	< 10 min at 400 lx
Charging time with empty energy supply	approx. 6 h at 400 lx, approx. 1.5 h at 1000 lx
Charging time at operation limit	1 h at 400 lx, approx. 15 min at 1000 lx
Operation time in darkness	approx. 48 h, with presence signal every 3h, when the goldcap is totally charged at 1000 lx

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Contact travel

1 NO contact EF 41 Z



Ordering details

EF 41 WZ

Actuator Z
Watertight collar
Series 41
F radio technology

Features/options

- Metal console, thermoplastic pedal
- Without protective shield
- Serial data output, output signal high on actuation
- EnOcean-protocol
- Data rate 120 kbps
- No wiring and pipe laying required, powered by a lithium ion battery
- Multi-network capable
- Easy programming of receiver

// KF F



Technical Data

Standards	IEC 609047-5-1
Enclosure	zinc die cast console, RAL 9005
Cover	-
Pedal	glass-fibre reinforced thermoplastic (PA 66)
Protective shield	-
Protection class	IP 67 per IEC 60529
Protocol	EnOcean
Ambient temperature	-20 °C ... +65 °C
Switching frequency	approx. 6000 telegrams at repetitions/h
Voltage supply	lithium ion battery
Frequency	868.3 MHz
Transmission power	max. 10 mW
Data rate	120 kbps
Bandwidth channel	280 kHz
Sensing range	max. 300 m outside, max. 30 m inside
Actuating time	min. 80 ms

Ordering details

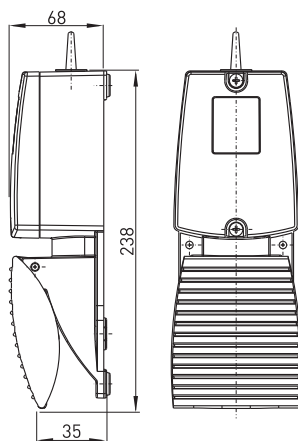
KF F

F radio technology
Series

Features/options

- Metal enclosure
- Without protective shield
- Available with special finish in RAL colour tones
- Serial data output, output signal high on actuation
- EnOcean-protocol
- Data rate 120 kbps
- No power supply, no wiring and pipe laying required
- Multi-network capable
- Easy programming of receiver

// GFI F



Technical Data

Standards	IEC 609047-5-1
Enclosure	aluminium die-cast, enamel finish, RAL 5011
Cover	aluminium die-cast, enamel finish, RAL 2004
Pedal	aluminium die-cast, enamel finish, RAL 5011
Protective shield	-
Protection class	IP 67 per IEC 60529
Protocol	EnOcean
Ambient temperature	-20 °C ... +65 °C
Switching frequency	approx. 6000 telegrams at repetitions/h
Voltage supply	Electrodynamic energy generator
Frequency	868.3 MHz
Transmission power	max. 10 mW
Data rate	120 kbps
Bandwidth channel	280 kHz
Sensing range	max. 300 m outside, max. 30 m inside
Actuating time	min. 80 ms
Note	no presence signal available

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Ordering details

GFI F

F radio technology
Series

Features/options

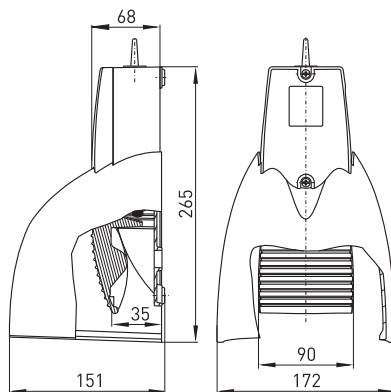
- Metal enclosure
- With protective shield
- Available with special finish in RAL colour tones
- Serial data output, output signal high on actuation
- EnOcean-protocol
- Data rate 120 kbps
- No power supply, no wiring and pipe laying required
- Multi-network capable
- Easy programming of receiver

// GFSI F



Technical Data

Standards	IEC 609047-5-1
Enclosure	aluminium die-cast, enamel finish, RAL 5011
Cover	-
Pedal	aluminium die-cast, enamel finish, RAL 5011
Protective shield	aluminium die-cast, enamel finish, RAL 2004
Protection class	IP 67 per IEC 60529
Protocol	EnOcean
Ambient temperature	-20 °C ... +65 °C
Switching frequency	approx. 6000 telegrams at repetitions/h
Voltage supply	Electrodynamic energy generator
Frequency	868.3 MHz
Transmission power	max. 10 mW
Data rate	120 kbps
Bandwidth channel	280 kHz
Sensing range	max. 300 m outside, max. 30 m inside
Actuating time	min. 80 ms
Note	no presence signal available

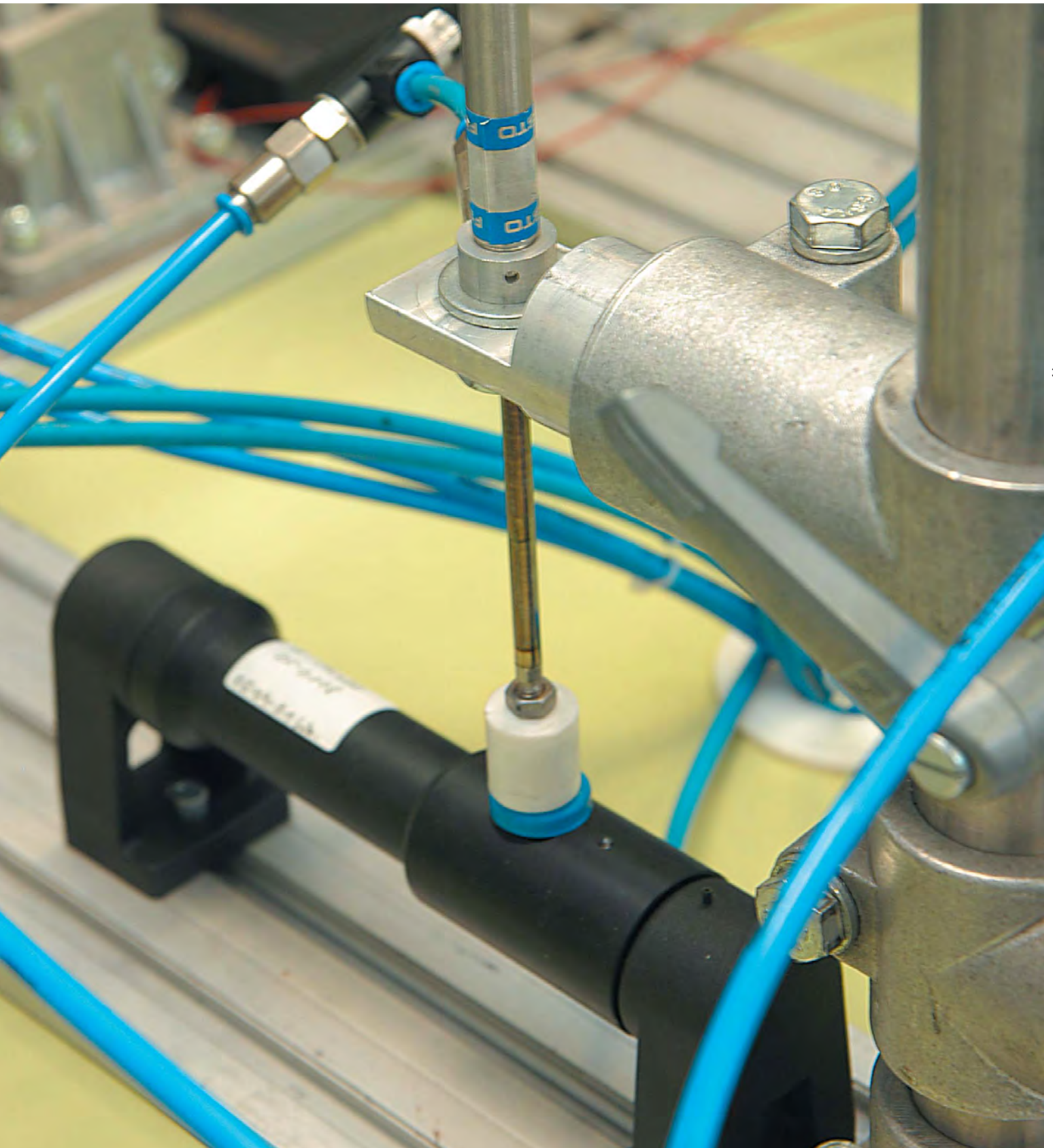


Ordering details

GFSI F

F radio technology
 S protective shield
 Series

QUALITY MANAGEMENT
LIFE TEST OF A PUSH BUTTON ON A DOOR HANDLE SWITCH



- Features/Options
- Remote sender
 - 2 channels
 - 4 push-buttons
 - Order unit: 1 piece

- Features/Options
- Radio repeater with SMA plug-in connector
 - 24 VDC supply voltage
 - Order unit: 1 piece

// R 101



// FR 1



32

Ordering details

R 101

01.08.0282

Ordering details

FR 1

90590004

Features/Options

- Mobile field strength indicator EPM 100 for radio field planning
- To measure and indicate the electrical field strength
- Battery not included, requires 9 volt battery

Features/Options

- RF magnet antenna with SMA plug-in connector
- Cable length 2.5 m
- Order unit: 1 piece

// EPM 100



// RF magnet Antenna



33

Ordering details

EPM 100

01.08.0267

Ordering details

RF magnet antenna

01.08.0254