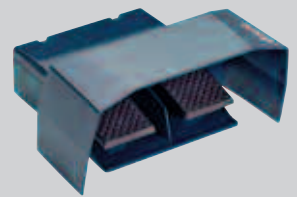
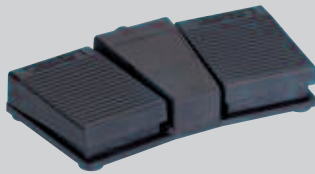


Automation

Foot switches / Safety foot switches



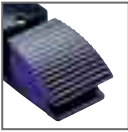
// SYSTEMATIC CONTROL SWITCHGEAR

Catalogue



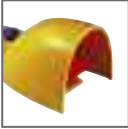
4 The company

PRODUCTS



6 Foot switches Metal enclosure

- 10 Series GF, single-pedal
- 16 Series GFS, single-pedal
- 26 Series GFI, single-pedal
- 32 Series GFSI, single-pedal
- 38 Series GF 2, double-pedal
- 44 Series GFS 2, double-pedal
- 50 Series GF 3, triple-pedal
- 52 Series GFS 3, triple-pedal



54 Safety foot switches Metal enclosure

- 58 Series GFS VD, single-pedal
- 60 Series GFSI VD, single-pedal
- 62 Series GFS 2 VD, double-pedal



64 Foot switches Thermoplastic enclosure

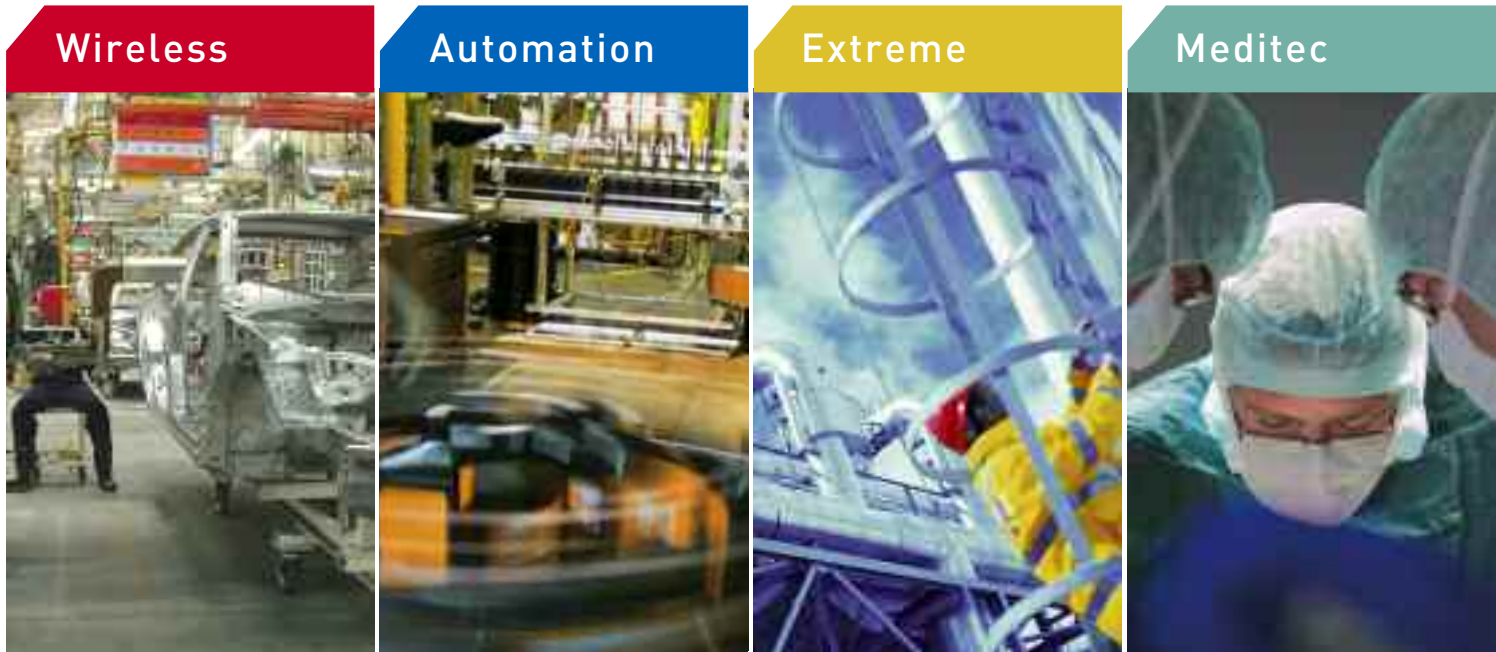
- 68 Series KF
- 72 Series KFS
- 76 Series KF 2
- 80 Series KF 3
- 82 Series KF 4
- 84 Series KF 5

87 Appendix

Legend of symbols



// SAFE SWITCHGEAR FOR DEMANDING AND CRITICAL APPLICATIONS



»Safe switchgear for demanding and critical applications«. True to this motto, steute has been providing its customers with innovative, practical and durable switchgear solutions – for over 50 years.

When our customers are successful, so are we. Because we always focus on our customers, our company has grown steadily and sustainably over the last decades. Steute is committed to continuing this growth – in close cooperation with our customers.

We are situated in East Westphalia, a key region for machine building and electrical goods manufacturing. It is home to qualified specialists committed to developing and manufacturing innovative products. It is also the location of renowned universities, research and educational institutions to which we maintain healthy contacts.

Markets are no longer restricted by national borders. This is why our products are developed and tested for extreme conditions all over the world. We take care to ensure that our products are always certified according to the latest international standards. In every industrial or emerging nation in the world, steute has access to qualified specialists who can guarantee competent support and a quick service.

As a medium-sized company we are able to react with speed to customer wishes and market trends. We are continually developing innovative products and using new technologies as we consistently open up new fields of application for our switchgear.

steute is currently active in four different business fields, producing switchgear, sensors and control units for use in industry and in medical equipment:

Wireless

Cable free switchgear and sensors for use in machinery and process plants. These industrial-strength wireless switches communicate with higher level control systems via reliable radio transmission. »Energy harvesting« can play a major role in these products.

Automation

Standard and customised switchgear for machinery and process plants. Tried and tested electromechanical and non-contact technologies for classical applications in industrial automation and process control – always with a view to the latest global requirements.

Extreme

Switchgear and sensors for use in extreme environments or under extreme conditions. Certified products for use in hazardous areas worldwide (e. g. ATEX, IECEx, GOST).

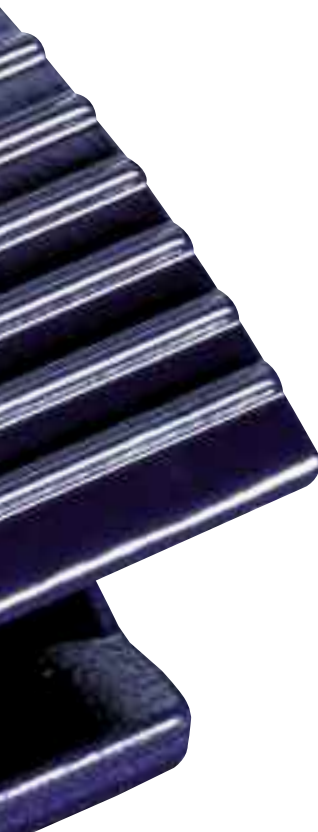
Meditec

A comprehensive range of standard and customised foot and hand controls for medical devices, meeting the highest ergonomic and availability requirements. Produced in accordance with the certified EN ISO 13485 quality management system for medical products.

The following information provides an overview of our standard range of switchgear for complex and demanding applications. We will be happy to provide you with any additional information you require. If you cannot find the solution for your application: just get in touch. We have already helped numerous customers by developing »tailor-made« switchgear for their individual needs.

Marc Stanesby
Managing Director
steute Schaltgeräte GmbH & Co. KG





Foot switches Metal enclosure

Single-pedal types

// **Series GF**

from page 10

// **Series GFS**

from page 16

// **Series GFI**

from page 26

// **Series GFSI**

from page 32

Double-pedal types

// **Series GF 2**

from page 38

// **Series GFS 2**

from page 44

Triple-pedal types

// **Series GF/GFS 3**

from page 50



Foot switches

Metal enclosure

Application

Foot switches are mounted on machines and plants in cases where operation using the hands is not possible. They are used to start and stop operations and production processes. Depending on the environmental conditions and mechanical duty, differing versions of foot switches are used.

The robust GF, GFS, GFI and GFSI range switches are generally used in the engineering industry, e.g. on presses, punching and bending machines, as well as in sheet-steel processing.

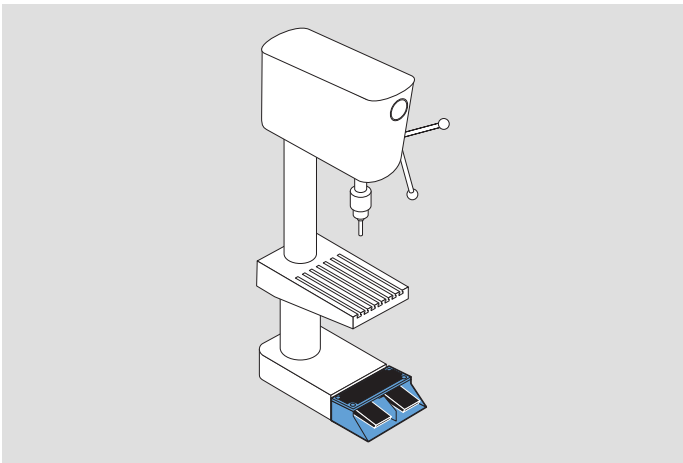
Design and mode of operation

The GF and GFS range foot switches are available in versions with multiple pedals. GFS and GFSI range switches are mounted with a shield to protect against unintentional actuation. All foot switches are equipped with slow or snap action contacts. Different versions are available with pressure point, potentiometer, Hall sensor and latching element. Foot rests, carrying handle and pedal covers are also available.

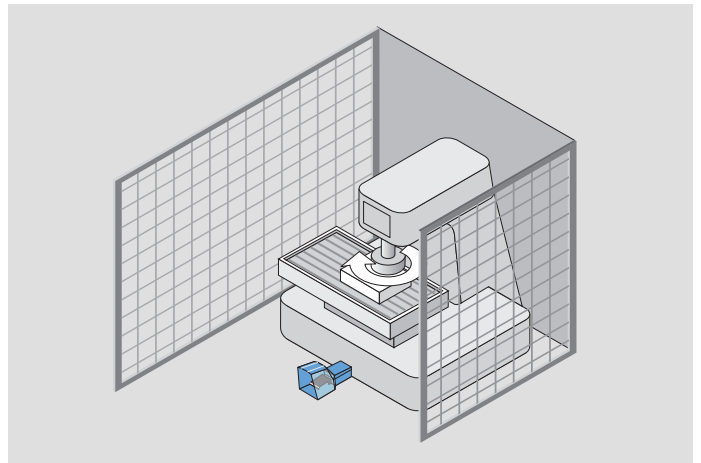
The foot switches bear the CE mark according to the Low Voltage Directive.

Application

Foot switch at a drill machine



Foot switch at a CNC machining center



Foot switches

// Series GF

Features/Options

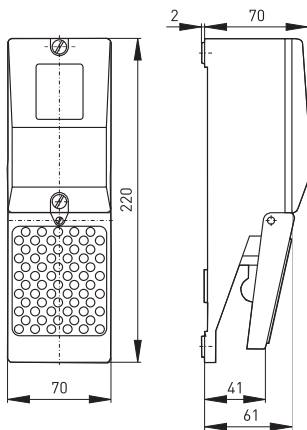
- Without protective shield
- Max. 4 contacts
- Metal enclosure
- High level of stability
- Low pedal height
- Wiring compartment
- Ex version available
- Available with mechanical interlock (only for slow action S)
- Available with special finish in RAL colour tones

// GF



Technical data

Standards	EN ISO 13849-1; EN 60947-5-1
Enclosure	aluminium die-cast, enamel finish, RAL 5011
Cover	glass-fibre reinforced thermoplastic
Pedal	glass-fibre reinforced thermoplastic
Connection	screw terminals
Cable cross-section	max. 2.5 mm ² (incl. conductor ferrules)
Cable entry	1 x M20 x 1.5
Contact material	silver
Degree of protection	IP 65 to IEC/EN 60529
Switching system	slow or snap action with double break, positive break NC contact ⊖
Switch insert	slow action: 2 contacts: ES 60 GF 4 contacts: ES 40 GF snap action: 2 and 4 contacts: ZS 232
B_{10d} (10 % load)	2 million
T_M	max. 20 years
Utilisation category	AC-15
I_e/U_e	slow action: 4 contacts: 6 A/400 VAC 2 contacts: 16 A/400 VAC snap action: 2 and 4 contacts: 4 A/230 VAC; 2.5 A/400 VAC; 1 A/500 VAC
Max. fuse rating	slow action: 4 contacts: 6 A gG/gN fuse 2 contacts: 16 A gG/gN fuse snap action: 4 A gG/gN fuse
Ambient temperature	- 25 °C ... + 80 °C
Mechanical life	> 1 million operations
Approvals	 GF(M)K:



10

Contact variants: Travel/contacts

	Snap action	Slow action
1 NC/1 NO contact	GFM 10/1S 	GF 10/1S
2 NC/2 NO contacts	GFM 20/2S 	GF 20/2S

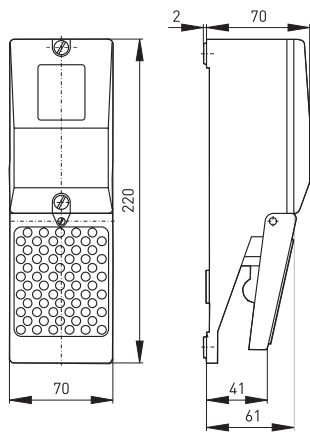
Ordering details

GFM K 10/1S

1NC/1NO contact, (20/2S, 10/3S),
other configurations possible
Pedal Cover
M Snap action (without M slow action)
Series

Foot switches
 // Series GF, variants

// Without protective shield GF



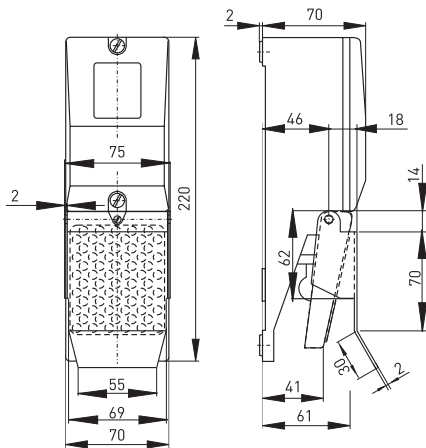
Snap action
 GFM 1Ö/1S
 GFM 2Ö/2S

Material Number
 1048500
 1048523

Slow action
 GF 1Ö/1S
 GF 2Ö/2S

Material Number
 1048458
 1048512

// Pedal cover K



Snap action/Pedal cover
 GFMK 1Ö/1S
 GFMK 2Ö/2S

Material Number
 on request
 1048524

Slow action/Pedal cover
 GFK 1Ö/1S
 GFK 2Ö/2S

Material Number
 1048464
 1048515

Foot switches

// Series GF, variants

- Features/Options**
- With pressure point: 2-step switching
 - 4 contacts
 - Metal enclosure
 - Without protective shield
 - High level of stability
 - Low pedal height
 - Wiring compartment
 - Available with mechanical interlock
 - Available with special finish in RAL colour tones

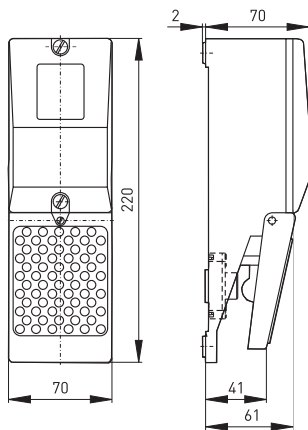
// GF D



Technical data

Standards	EN ISO 13849-1; EN 60947-5-1
Enclosure	aluminium die-cast, enamel finish, RAL 5011
Cover	glass-fibre reinforced thermoplastic
Pedal	glass-fibre reinforced thermoplastic
Connection	screw terminals
Cable cross-section	max. 2.5 mm ² (incl. conductor ferrules)
Cable entry	1 x M20 x 1.5
Contact material	silver
Degree of protection	IP 65 to IEC/EN 60529
Switching system	slow action with double break, positive break NC contact ⊖
Switch insert	2 x ES 40 GF
Switching element	2-step switching: 1 NC/1 NO contact pressure point: 1 NC/1 NO contact
Actuating force	aprox. 240 N
B_{10d} (10 % load)	2 million
T_M	max. 20 years
Utilisation category	AC-15
I_e/U_e	6 A/400 VAC
Max. fuse rating	6 A gG/gN fuse
Ambient temperature	- 25 °C ... + 80 °C
Mechanical life	> 1 million operations

Approvals



Contact variants: Travel/contacts

	Slow action	Material Number
1 NC/1 NO contact	GF 10S D 10S 	1048531

Ordering details

GF 10S D 10S

1NC/1NO contact
 Pressure point
 Contacts 1NC/1NO contact, other configurations possible
 Series



Features/Options

- With latching: ON/OFF principle
- Max. 2 contacts
- Metal enclosure
- Without protective shield
- High level of stability
- Low pedal height
- Wiring compartment
- Available with special finish in RAL colour tones

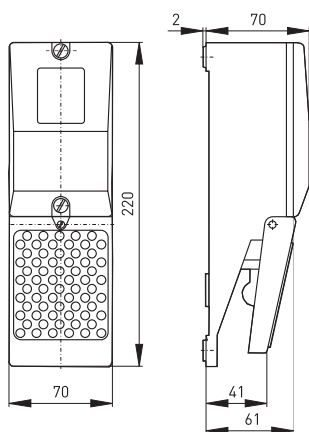
Technical data

Standards	EN 60947-5-1
Enclosure	aluminium die-cast, enamel finish, RAL 5011
Cover	glass-fibre reinforced thermoplastic
Pedal	glass-fibre reinforced thermoplastic
Connection	screw terminals
Cable cross-section	max. 2.5 mm ² (incl. conductor ferrules)
Cable entry	1 x M20 x 1.5
Contact material	silver
Degree of protection	IP 65 to IEC/EN 60529
Switching system	slow action with double break, positive break NC contact ⊖
Switch insert	ES 60 GF RE
Switching element	1 NC/1 NO contact with latching
Utilisation category	AC-15
I _e /U _e	16 A/400 VAC
Max. fuse rating	16 A gG/gN fuse
Ambient temperature	- 25 °C ... + 80 °C
Mechanical life	> 1 million operations


Approvals



// GF RE



Contact variants: Travel/contacts

	Slow action	Material Number
1 NC/1 NO contact	GF 10/1S RE 	1048462

Ordering details

GF 10/1S RE

Latching element
1NC/1NO contact
Series



Foot switches

// Series GF, variants

Features/Options

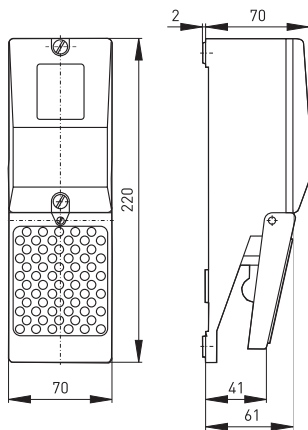
- With Hall sensor: Analogue output
- Metal enclosure
- Various output values available: 0 ... 10 VDC, 0 ... 20 mA or 4 ... 20 mA
- Analogue output signal proportional to pedal travel
- Without protective shield
- Available with additional micro switch
- High level of stability
- Low pedal height
- Wiring compartment
- Available with special finish in RAL colour tones

// GF HS



Technical data

Standards	EN 60947-5-1
Enclosure	aluminium die-cast, enamel finish, RAL 5011
Cover	glass-fibre reinforced thermoplastic
Pedal	glass-fibre reinforced thermoplastic
Connection	screw terminals
Cable cross-section	max. 1 mm ² (incl. conductor ferrules)
Cable entry	1 x M20 x 1.5
Degree of protection	IP 65 to IEC/EN 60529
Switching system	Hall sensor
Output values	
Output voltage U_a	0...10 VDC ± 1 %
Output current I_a	0...20 mA ± 1 % or 4...20 mA ± 1 %
Utilisation category	-
I_e/U_e	at U _a : 25 mA/15 ... 30 VDC at I _a : 45 mA/15 ... 30 VDC
Max. fuse rating	-
Ambient temperature	- 10 °C ... + 70 °C
Mechanical life	> 1 million operations
Approvals	



Contact variants: Travel/contacts

	Hall sensor	Material Number
U _a	GF HS 0-10 VDC 	1048576
I _a	GF HS 0-20 mA	1048577
	GF HS 4-20 mA 	1048578

Ordering details

GF HS 0-20 mA

Output value I_a 0-20 mA
(I_a 4-20 mA, U_a 0-10 VDC)
Hall sensor
Series



Features/Options

- With potentiometer: Analogue output
- Metal enclosure
- With various potentiometers available: 1 k Ω , 2 k Ω , 5 k Ω or 10 k Ω
- Start value can be set in factory
- Without protective shield
- High level of stability
- Low pedal height
- Wiring compartment
- Available with special finish in RAL colour tones

// GF POT1




Technical data

Standards	EN 60947-5-1
Enclosure	aluminium die-cast, enamel finish, RAL 5011
Cover	glass-fibre reinforced thermoplastic
Pedal	glass-fibre reinforced thermoplastic
Connection	soldering terminals
Cable entry	1 x M20 x 1.5
Contact material	silver, gold-plated
Degree of protection	IP 65 to IEC/EN 60529
Switching system	potentiometer
Resistance R	20 Ω ... 1 k Ω \pm 3 %; 20 Ω ... 2 k Ω \pm 3 %; 50 Ω ... 5 k Ω \pm 3 %; 100 Ω ... 10 k Ω \pm 3 %
Linearity	\pm 0.5 %
Utilisation category	-
I_e/U_e	micro switch: 0.1 A/250 VAC; 0.1 A/24 VDC
Switching power	potentiometer: max. 1.5 W at 40 °C
Max. fuse rating	-
Ambient temperature	- 15 °C ... + 80 °C
Mechanical life	> 1 million operations

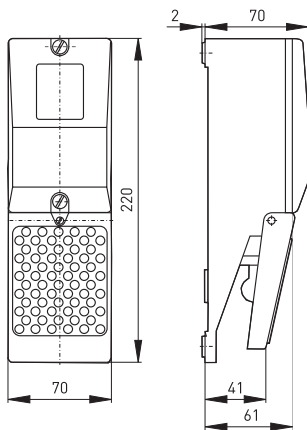
Approvals



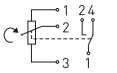
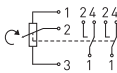
GF Poti 10K 1PW: 

Note

The built-in micro switch provides for potential-free switching of the potentiometer.



Contact variants: Travel/contacts

	Potentiometer	Material Number
1 change-over	GF POT1 1K 1PW 	1048555
2 change-over	GF POT1 1K 2PW 	on request

Ordering details

GF POT1 1K 1PW

Micro switch 1 change-over contact (2PW)
Potentiometer value 1 k Ω
(2 k Ω , 5 k Ω or 10 k Ω)
Potentiometer
Series



Foot switches

// Series GFS

Features/Options

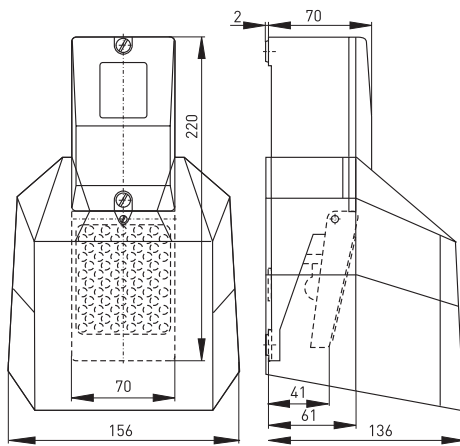
- With protective shield
- Max. 4 contacts
- Metal enclosure
- High level of stability
- Low pedal height
- Wiring compartment
- Ex version available
- Available with mechanical interlock (only for slow action S)
- Available with special finish in RAL colour tones

// GFS



Technical data

Standards	EN ISO 13849-1; EN 60947-5-1
Enclosure	aluminium die-cast, enamel finish, RAL 5011
Pedal	glass-fibre reinforced thermoplastic
Protective shield	aluminium die-cast, enamel finish, RAL 5011
Connection	screw terminals
Cable cross-section	max. 2.5 mm ² (incl. conductor ferrules)
Cable entry	1 x M20 x 1.5
Contact material	silver
Degree of protection	IP 65 to IEC/EN 60529
Switching system	slow or snap action with double break, positive break NC contact ⊖
Switch insert	slow action: 2 contacts: ES 60 GF 4 contacts: ES 40 GF snap action: 2 and 4 contacts: ZS 232
B_{10d} (10 % load)	2 million
T_M	max. 20 years
Utilisation category	AC-15
I_e/U_e	slow action: 4 contacts: 6 A/400 VAC 2 contacts: 16 A/400 VAC snap action: 2 contacts: 4 A/230 VAC; 2.5 A/400 VAC; 1 A/500 VAC
Max. fuse rating	slow action: 4 contacts: 6 A gG/gN fuse 2 contacts: 16 A gG/gN fuse snap action: 4 A gG/gN fuse
Ambient temperature	- 25 °C ... + 80 °C
Mechanical life	> 1 million operations
Approvals	



Contact variants: Travel/contacts

	Snap action	Slow action
1 NC/1 NO contact	GFSM 10/1S 	GFS 10/1S
2 NC/2 NO contacts	GFSM 20/2S 	GFS 20/2S

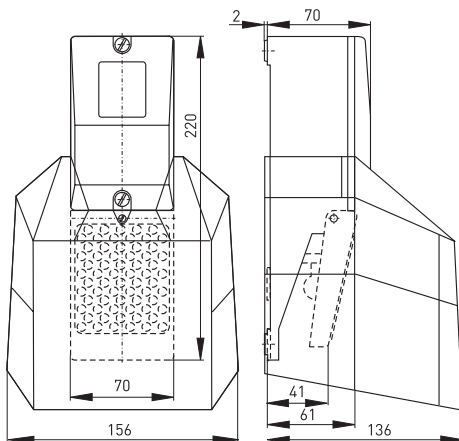
Ordering details

GFSM K 10/1S FST

- Foot rest, TST carrying handle
- 1 NC/1 NO contact (20/2S, 10/3S), other configurations possible
- Pedal Cover
- M Snap action (without M slow action)
- S Protective shield
- Series

Foot switches
 // Series GFS, variants

// With protective shield GFS



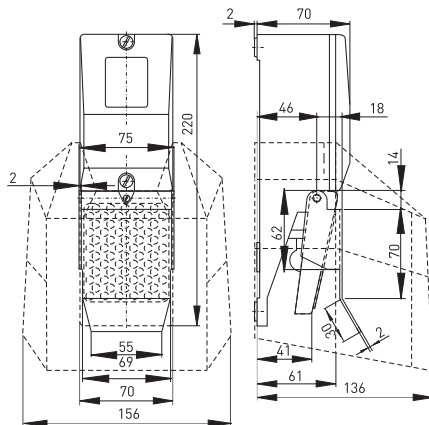
Snap action
 GFSM 10/1S
 GFSM 20/2S

Material Number
 1048638
 1048682

Slow action
 GFS 10/1S
 GFS 20/2S

Material Number
 1048579
 1048655

// Pedal cover K



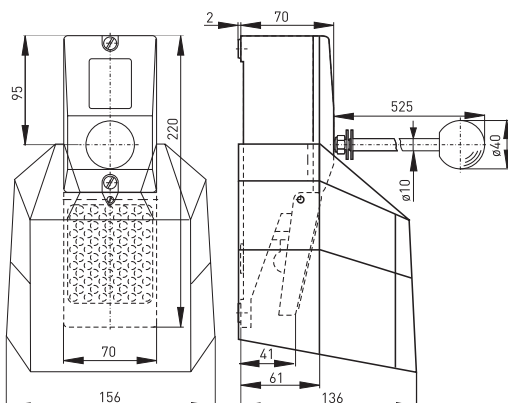
Snap action/Pedal cover
 GFSMK 10/1S
 GFSMK 20/2S

Material Number
 1048641
 1048684

Slow action/Pedal cover
 GFSK 10/1S
 GFSK 20/2S

Material Number
 1048588
 1048658

// Carrying handle TST

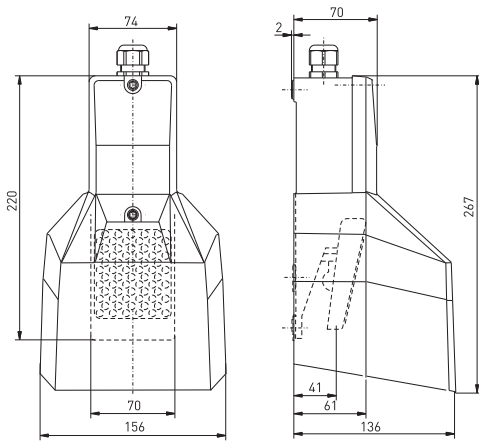


Features/Options

- Carrying handle:
 stainless steel 1.4104 with thermoplastic grip

Foot switches
 // Series GFS, variants

// GFS IP69K



Features/Options

- GFS IP69K, version with IP69K degree of protection:
 suitable for cleaning with 80 °C hot water at a pressure of 100 bar
 at a distance of 100 mm from different directions.

Slow action/IP 69K

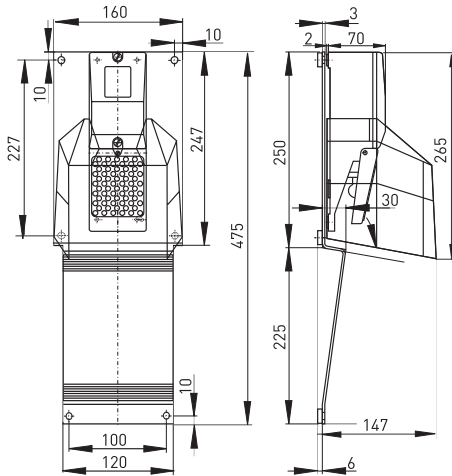
- GFS 10/1S IP69K KST Extreme
- GFS 10S D 10S IP69K KST Extreme

Material Number

- 1184570
- 1184972

18

// Foot rest FST



Features/Options

- Variants with foot rest available on request

PRODUCTION PROCESS ASSEMBLY
ENAMELLED DOUBLE-PEDAL FOOT SWITCH ENCLOSURE



Foot switches

// Series GFS, variants

- Features/Options**
- With pressure point: 2-step switching
 - 4 contacts
 - Metal enclosure
 - With protective shield
 - High level of stability
 - Low pedal height
 - Wiring compartment
 - Available with mechanical interlock
 - Available with special finish in RAL colour tones

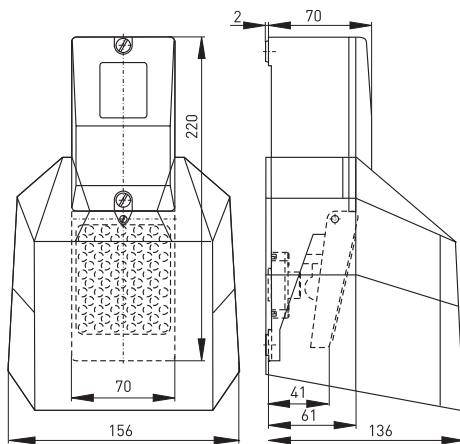
// GFS D



Technical data

Standards	EN ISO 13849-1; EN 60947-5-1
Enclosure	aluminium die-cast, enamel finish, RAL 5011
Pedal	glass-fibre reinforced thermoplastic
Protective shield	aluminium die-cast, enamel finish, RAL 5011
Connection	screw terminals
Cable cross-section	max. 2.5 mm ² (incl. conductor ferrules)
Cable entry	1 x M20 x 1.5
Contact material	silver
Degree of protection	IP 65 to IEC/EN 60529
Switching system	slow action with double break, positive break NC contact ⊖
Switch insert	ES 40 GF
Switching element	2-step switching: 1 NC/1 NO contact pressure point: 1 NC/1 NO contact
Actuating force	aprox. 240 N
B_{10d} (10 % load)	2 million
T_M	max. 20 years
Utilisation category	AC-15
I_e/U_e	6 A/400 VAC
Max. fuse rating	6 A gG/gN fuse
Ambient temperature	- 25 °C ... + 80 °C
Mechanical life	> 1 million operations
Approvals	

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Contact variants: Travel/contacts

	Slow action	Material Number
1 NC/1 NO contact	GFS 10S D 10S 	1048686

Ordering details

GFS 10S D 10S
 Contacts 1NC/1NO contact
 Pressure point
 Contacts 1NC/1NO contact,
 other configurations possible
 S Protective shield
 Series



Features/Options

- With latching: ON/OFF principle
- Max. 2 contacts
- Metal enclosure
- With protective shield
- High level of stability
- Low pedal height
- Wiring compartment
- Available with special finish in RAL colour tones

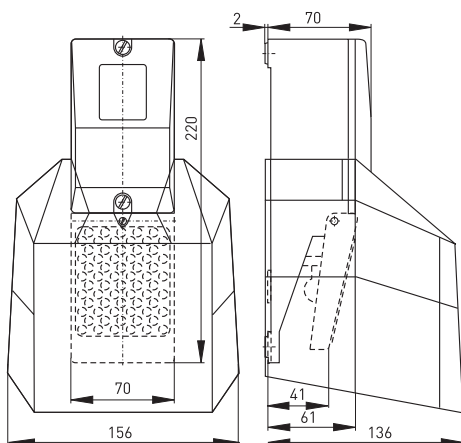
// GFS RE



Technical data

Standards	EN 60947-5-1
Enclosure	aluminium die-cast, enamel finish, RAL 5011
Pedal	glass-fibre reinforced thermoplastic
Protective shield	aluminium die-cast, enamel finish, RAL 5011
Connection	screw terminals
Cable cross-section	max. 2.5 mm ² (incl. conductor ferrules)
Cable entry	1 x M20 x 1.5
Contact material	silver
Degree of protection	IP 65 to IEC/EN 60529
Switching system	slow action with double break, positive break NC contact ⊖
Switch insert	ES 60 GF RE
Switching element	1 NC/1 NO contact with latching
Utilisation category	AC-15
I_e/U_e	16 A/400 VAC
Max. fuse rating	16 A gG/gN fuse
Ambient temperature	- 25 °C ... + 80 °C
Mechanical life	> 1 million operations
Approvals	

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Contact variants: Travel/contacts

	Slow action	Material Number
1 NC/1 NO contact	GFS 10/1S RE 	1048587

Ordering details

GFS 10/1S RE



Foot switches

// Series GFS, variants

Features/Options

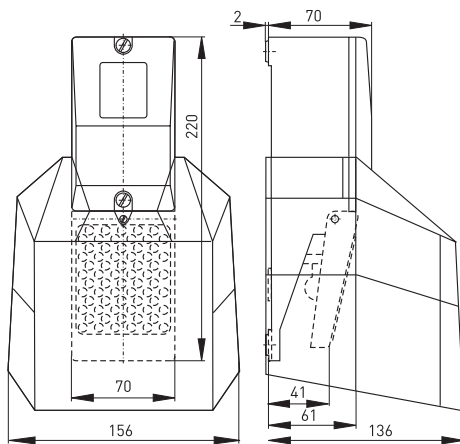
- With Hall sensor: Analogue output
- Metal enclosure
- Various output values available: 0 ... 10 VDC, 0 ... 20 mA or 4 ... 20 mA
- Analogue output signal proportional to pedal travel
- With protective shield
- Available with additional micro switch
- High level of stability
- Low pedal height
- Wiring compartment
- Available with special finish in RAL colour tones

// GFS HS



Technical data

Standards	EN 60947-5-1
Enclosure	aluminium die-cast, enamel finish, RAL 5011
Pedal	glass-fibre reinforced thermoplastic
Protective shield	aluminium die-cast, enamel finish, RAL 5011
Connection	screw terminals
Cable cross-section	max. 1 mm ² (incl. conductor ferrules)
Cable entry	1 x M20 x 1.5
Degree of protection	IP 65 to IEC/EN 60529
Switching system	Hall sensor
Output values	
Output voltage U_a	0...10 VDC ± 1 %
Output current I_a	0...20 mA ± 1 % or 4...20 mA ± 1 %
I_e/U_e	at U _a : 25 mA/15 ... 30 VDC at I _a : 45 mA/15 ... 30 VDC
Ambient temperature	- 10 °C ... + 70 °C
Mechanical life	> 1 million operations
Approvals	



Contact variants: Travel/contacts

	Hall sensor	Material Number
U _a	GFS HS 0-10 VDC 	1048765
I _a	GFS HS 0-20 mA	1048766
	GFS HS 4-20 mA	1048767

Ordering details

GFS HS 0-20 mA

Output value I_a 0-20 mA
(I_a 4-20 mA, U_a 0-10 VDC)
Hall sensor
S Protective shield
Series



Features/Options

- With potentiometer: Analogue output
- Metal enclosure
- With various potentiometers available: 1 k Ω , 2 k Ω , 5 k Ω or 10 k Ω
- Start value can be set in factory
- With protective shield
- High level of stability
- Low pedal height
- Wiring compartment
- Available with special finish in RAL colour tones

// GFS POT1



Technical data

Standards	EN 60947-5-1
Enclosure	aluminium die-cast, enamel finish, RAL 5011
Pedal	glass-fibre reinforced thermoplastic
Protective shield	aluminium die-cast, enamel finish, RAL 5011
Connection	soldering terminals
Cable entry	1 x M20 x 1.5
Contact material	silver, gold-plated
Degree of protection	IP 65 to IEC/EN 60529
Switching system	potentiometer
Resistance R	20 Ω ... 1 k Ω \pm 3 %; 20 Ω ... 2 k Ω \pm 3 %; 50 Ω ... 5 k Ω \pm 3 %; 100 Ω ... 10 k Ω \pm 3 %
Linearity	\pm 0.5 %
I_e/U_e	micro switch: 0.1 A/250 VAC; 0.1 A/24 VDC
Switching power	potentiometer: max. 1.5 W at 40 °C
Ambient temperature	-15 °C ... +80 °C
Mechanical life	> 1 million operations

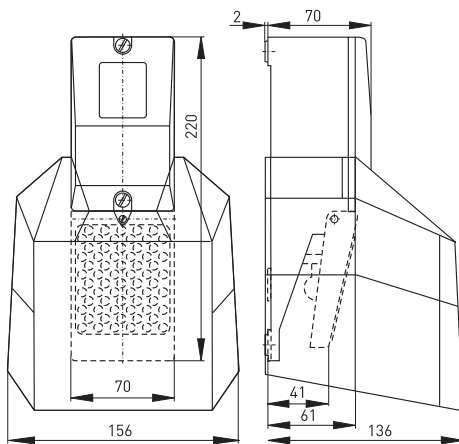
Approvals



GFS Poti 10K 1PW:

Note

The built-in micro switch provides for potential-free switching of the potentiometer.



Contact variants: Travel/contacts

	Potentiometer	Material Number
1 change-over	GFS POT1 1K 1PW 	1048737
2 change-over	GFS POT1 1K 2PW 	on request

Ordering details

GFS POT1 1K 1PW

Micro switch 1 change-over contact (2PW)
Potentiometer value 1 k Ω
(2 k Ω , 5 k Ω or 10 k Ω)
Potentiometer
S Protective shield
Series



Foot switches

// Series GFS, variants

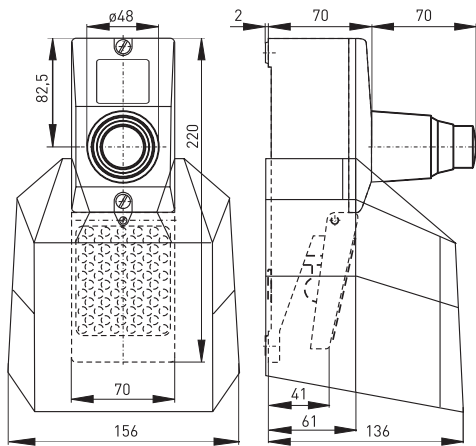
- Features/Options**
- With emergency-stop push button
 - Max. 4 contacts
 - Metal enclosure
 - With protective shield
 - High level of stability
 - Low pedal height
 - Wiring compartment
 - Available with special finish in RAL colour tones

// GFS NA



Technical data

Standards	EN ISO 13849-1; EN 60947-5-1
Enclosure	aluminium die-cast, enamel finish, RAL 5011
Pedal	glass-fibre reinforced thermoplastic
Protective shield	aluminium die-cast, enamel finish, RAL 5011
Connection	screw terminals
Cable cross-section	max. 2.5 mm ² (incl. conductor ferrules) Emergency-stop: flat-plug connectors 2.8 x 0.8 mm per DIN 46247-3 also to be soldered
Cable entry	1 x M20 x 1.5
Contact material	silver
Degree of protection	IP 65 to IEC/EN 60529
Switching system	slow or snap action with double break, positive break NC contact ⊖
Switch insert	slow action: 2 contacts: ES 60 GF 4 contacts: ES 40 GF snap action: 2 and 4 contacts: ZS 232
B_{10d} (10 % load)	60,000
T_M	max. 20 years
Utilisation category	AC-15
I_e/U_e	slow action: 4 contacts: 6 A/400 VAC 2 contacts: 16 A/400 VAC snap action: 2 contacts: 4 A/230 VAC; 2.5 A/400 VAC; 1 A/500 VAC emergency-stop push button: 3 A/250 VAC
Max. fuse rating	slow action: 4 contacts: 6 A gG/gN fuse 2 contacts: 16 A gG/gN fuse snap action: 4 A gG/gN fuse
Ambient temperature	- 25 °C ... + 80 °C
Mechanical life	> 30,000 operations
Approvals	



Contact variants: Travel/contacts

	Slow action	Material Number
1 NC/1 NO contact	GFS 10/1S NA 10/1S 	1184930
1 NC/1 NO contact	GFS 10/1S NA 20 	1184419

Ordering details

GFSM 10/1S NA 10/1S	Emergency-stop push button contacts 1 NC/1 NO contact (20)
GFSM 10/1S NA 20	Emergency-stop push button 1 NC/1 NO contact (20/2S)
GFSM 10/1S NA 20 S	M Snap action (without M slow action) S Protective shield
Series	

PRODUCTION PROCESS PAINT SHOP
PROTECTIVE SHIELDS ON AN ENAMELLING FIXTURE



Foot switches // Series GFI

Features/Options

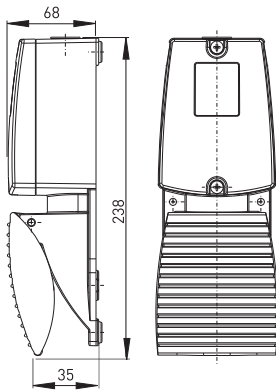
- Metal enclosure
- Max. 4 contacts
- Without protective shield
- High level of stability
- Ergonomic pedal design and low pedal height
- Degree of protection IP 67/IP 68 possible on request
- Ex version available
- Wiring compartment
- Available with mechanical interlock (only for slow action S)
- Available with special finish in RAL colour tones

// GFI



Technical data

Standards	EN ISO 13849-1; EN 60947-5-1
Enclosure	aluminium die-cast, enamel finish, RAL 5011
Cover	aluminium die-cast, enamel finish, RAL 2004
Pedal	aluminium die-cast, enamel finish, RAL 5011
Connection	screw terminals
Cable cross-section	max. 2.5 mm ² (incl. conductor ferrules)
Cable entry	1 x M20 x 1.5
Contact material	silver
Degree of protection	IP 65 to IEC/EN 60529
Switching system	slow or snap action with double break, positive break NC contact ⊖
Switch insert	slow action: 2 contacts: ES 60 GF 4 contacts: ES 40 GF snap action: 2 and 4 contacts; ZS 232
Switching element	1 NC/1 NO contact or 2 NC/2 NO contacts
B_{10d} (10 % load)	2 million
T_M	max. 20 years
Utilisation category	AC-15
I_e/U_e	slow action: 4 contacts: 6 A/400 VAC 2 contacts: 16 A/400 VAC snap action: 4 A/230 VAC 2.5 A/400 VAC 1 A/500 VAC
Max. fuse rating	slow action: 4 contacts: 6 A gG/gN fuse 2 contacts: 16 A gG/gN fuse snap action: 4 A gG/gN fuse
Ambient temperature	- 25 °C ... + 80 °C
Mechanical life	> 1 million operations
Approvals	GFI 1Ö/1S:



Contact variants: Travel/contacts

	Snap action	Slow action
1 NC/1 NO contact	GFIM 1Ö/1S 	GFI 1Ö/1S
2 NC/2 NO contacts	GFIM 2Ö/2S 	GFI 2Ö/2S

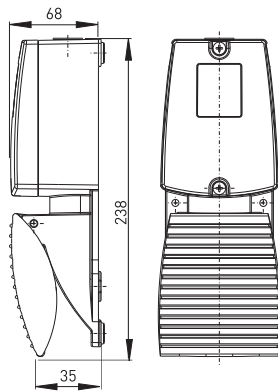
Ordering details

GFIM 1Ö/1S

Contacts 1Ö/1S, (2Ö/2S), other configurations possible
M Snap action (without M slow action)
Series

Foot switches
// Series GFI, variants

// Without protective shield GFI



Snap action
GFIM 10/1S
GFIM 20/2S

Material Number
1183831
1186822

Slow action
GFI 10/1S
GFI 20/2S

Material Number
1053497
1186735

Foot switches

// Series GFI, variants

Features/Options

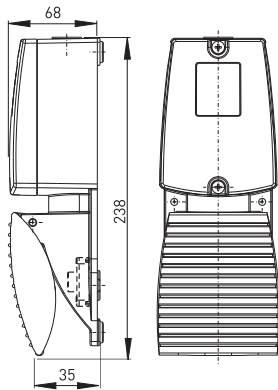
- With pressure point: 2-step switching
- 4 contacts
- Without protective shield
- High level of stability
- Ergonomic pedal design
- Low pedal height
- Wiring compartment
- Degree of protection IP 67/IP 68 possible on request
- Available with mechanical interlock
- Available with special finish in RAL colour tones

// GFI D



Technical data

Standards	EN ISO 13849-1; EN 60947-5-1
Enclosure	aluminium die-cast, enamel finish, RAL 5011
Cover	aluminium die-cast, enamel finish, RAL 2004
Pedal	aluminium die-cast, enamel finish, RAL 5011
Connection	screw terminals
Cable cross-section	max. 2.5 mm ² (incl. conductor ferrules)
Cable entry	1 x M20 x 1.5
Contact material	silver
Degree of protection	IP 65 to IEC/EN 60529
Switching system	slow action with double break, positive break NC contact ⊖
Switch insert	2 x ES 40 GF
Switching element	2-step switching: 1 NC/1 NO contact pressure point: 1 NC/1 NO contact
Actuating force	aprox. 240 N
B_{10d} (10 % load)	2 million
T_M	max. 20 years
Utilisation category	AC-15
I_e/U_e	6 A/400 VAC
Max. fuse rating	6 A gG/gN fuse
Ambient temperature	- 25 °C ... + 80 °C
Mechanical life	> 1 million operations
Approvals	



Contact variants: Travel/contacts

	Slow action	Material Number
1 NC/1 NO contact	GFI 10S D 10S 	on request

Ordering details

GFI 10S D 10S


1NC/1NO contact, other configurations possible
 Pressure point
 Contacts 1NC/1NO contact
 Series



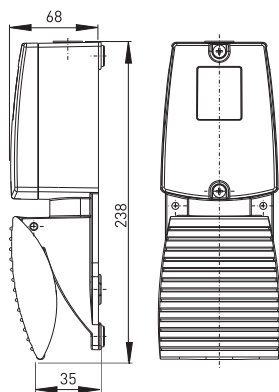
Features/Options

- With latching: ON/OFF principle
- Metal enclosure
- 2 contacts
- Without protective shield
- High level of stability
- Low pedal height
- Ergonomic pedal design
- Degree of protection IP 67/IP 68 possible on request
- Wiring compartment
- Available with special finish in RAL colour tones

Technical data

Standards	EN 60947-5-1
Enclosure	aluminium die-cast, enamel finish, RAL 5011
Cover	aluminium die-cast, enamel finish, RAL 2004
Pedal	aluminium die-cast, enamel finish, RAL 5011
Connection	screw terminals
Cable cross-section	max. 2.5 mm ² (incl. conductor ferrules)
Cable entry	1 x M20 x 1.5
Contact material	silver
Degree of protection	IP 65 to IEC/EN 60529
Switching system	slow action with double break, positive break NC contact ⊖
Switch insert	ES 60 GF RE
Switching element	1 NC/1 NO contact with latching
Utilisation category	AC-15
I _e /U _e	16 A/400 VAC
Max. fuse rating	16 A gG/gN fuse
Ambient temperature	-25 °C ... +80 °C
Mechanical life	> 1 million operations
Approvals	

// GFI RE



Contact variants: Travel/contacts

	Slow action	Material Number
1 NC/1 NO contact	GFI 10/15 RE	1180900

Ordering details

GFI 10/15 RE

Latching element
Contacts 1NC/1NO contact
Series



Foot switches

// Series GFI, variants

Features/Options

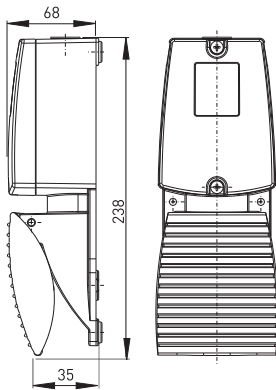
- With Hall sensor: Analogue output
- Metal enclosure
- Various output values available: 0 ... 10 VDC, 0 ... 20 mA or 4 ... 20 mA
- Analogue output signal proportional to pedal travel
- Without protective shield
- Available with additional micro switch
- Ergonomic pedal design and low pedal height
- Degree of protection IP 67/IP 68 possible on request
- Wiring compartment
- Available with special finish in RAL colour tones

// GFI HS



Technical data

Standards	EN 60947-5-1
Enclosure	aluminium die-cast, enamel finish, RAL 5011
Cover	aluminium die-cast, enamel finish, RAL 2004
Pedal	aluminium die-cast, enamel finish, RAL 5011
Connection	screw terminals
Cable cross-section	max. 1 mm ² (incl. conductor ferrules)
Cable entry	1 x M20 x 1.5
Degree of protection	IP 65 to IEC/EN 60529
Switching system	Hall sensor
Output values	
Output voltage U_a	0...10 VDC $\pm 1\%$
Output current I_a	0...20 mA $\pm 1\%$ or 4...20 mA $\pm 1\%$
I_e/U_e	at U_a : 25 mA/15 ... 30 VDC at I_a : 45 mA/15 ... 30 VDC
Ambient temperature	- 10 °C ... + 70 °C
Mechanical life	> 1 million operations
Approvals	



Contact variants: Travel/contacts

	Hall sensor	Material Number
U_a	GFI HS 0-10 VDC 	on request
I_a	GFI HS 0-20 mA GFI HS 4-20 mA 	on request on request

Ordering details

GFI HS 0-20 mA

Output value I_a 0-20 mA
(I_a 4-20 mA, U_a 0-10 VDC)
Hall sensor
Series



Features/Options

- With potentiometer: Analogue output
- Metal enclosure
- With various potentiometers available: 1 k Ω , 2 k Ω , 5 k Ω or 10 k Ω
- Start value can be set in factory
- Without protective shield
- Low pedal height
- Ergonomic pedal design
- Degree of protection IP 67/IP 68 possible on request
- Wiring compartment
- Available with special finish in RAL colour tones

// GFI POTI



Technical data

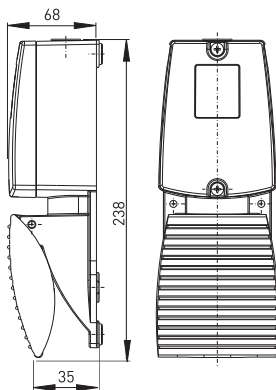
Standards	EN 60947-5-1
Enclosure	aluminium die-cast, enamel finish, RAL 5011
Cover	aluminium die-cast, enamel finish, RAL 2004
Pedal	aluminium die-cast, enamel finish, RAL 5011
Connection	soldering terminals
Cable entry	1 x M20 x 1.5
Contact material	silver, gold-plated
Degree of protection	IP 65 to IEC/EN 60529
Switching system	potentiometer
Resistance R	20 Ω ... 1 k Ω \pm 3 %; 20 Ω ... 2 k Ω \pm 3 %; 50 Ω ... 5 k Ω \pm 3 %; 100 Ω ... 10 k Ω \pm 3 %
Linearity	\pm 0.5 %
I_e/U_e	micro switch: 0.1 A/250 VAC; 0.1 A/24 VDC
Switching power	potentiometer: max. 1.5 W at 40 °C
Ambient temperature	- 15 °C ... + 80 °C
Mechanical life	> 1 million operations

Approvals

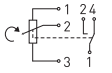
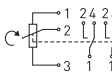


Note

The built-in micro switch provides for potential-free switching of the potentiometer.



Contact variants: Travel/contacts

	Potentiometer	Material Number
1 change-over	GFI POTI 1K 1PW 	on request
2 change-over	GFI POTI 1K 2PW 	on request

Ordering details

GFI POTI 1K 1PW

Micro switch 1 change-over contact (2PW), other configurations possible

Potentiometer value 1 k Ω (2 k Ω , 5 k Ω or 10 k Ω)

Potentiometer

Series



Foot switches // Series GFSI

Features/Options

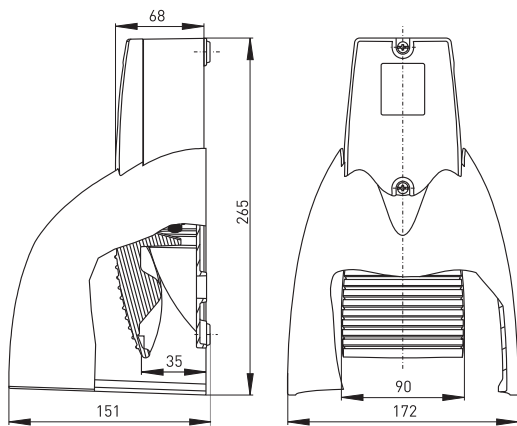
- Metal enclosure
- Max. 4 contacts
- With protective shield
- Wide opening in protective shield
- Ergonomic pedal design
- Degree of protection IP 67/IP 68 possible on request
- Ex version available
- Wiring compartment
- Available with mechanical interlock (only for slow action S)
- Available with special finish in RAL colour tones

// GFSI



Technical data

Standards	EN ISO 13849-1; EN 60947-5-1
Enclosure	aluminium die-cast, enamel finish, RAL 5011
Pedal	aluminium die-cast, enamel finish, RAL 5011
Protective shield	aluminium die-cast, enamel finish, RAL 2004
Connection	screw terminals
Cable cross-section	max. 2.5 mm ² (incl. conductor ferrules)
Cable entry	1 x M20 x 1.5
Contact material	silver
Degree of protection	IP 65 to IEC/EN 60529
Switching system	slow or snap action with double break, positive break NC contact ⊖
Switch insert	slow action: 2 contacts: ES 60 GF 4 contacts: ES 40 GF snap action: 2 and 4 contacts: ZS 232
Switching element	1 NC/1 NO contact or 2 NC/2 NO contacts
B_{10d} (10 % load)	2 million
T_M	max. 20 years
Utilisation category	AC-15
I_e/U_e	slow action: 4 contacts: 6 A/400 VAC 2 contacts: 16 A/400 VAC snap action: 4 A/230 VAC; 2.5 A/400 VAC; 1 A/500 VAC
Max. fuse rating	slow action: 4 contacts: 6 A gG/gN fuse 2 contacts: 16 A gG/gN fuse snap action: 2 and 4 contacts: 4 A gG/gN fuse
Ambient temperature	- 25 °C ... + 80 °C
Mechanical life	> 1 million operations
Approvals	GFSI 10/1S - GFSI 20/2S:



Contact variants: Travel/contacts

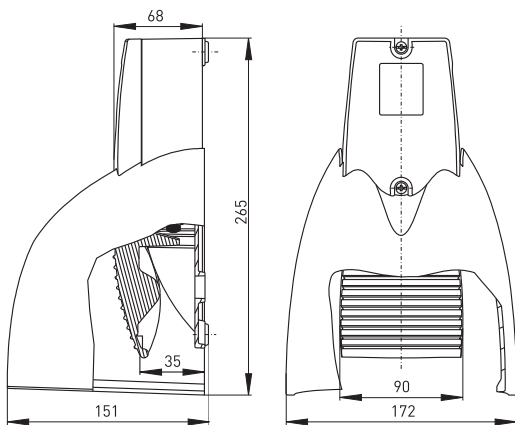
	Snap action	Slow action
1 NC/1 NO contact	GFSIM 10/1S 	GFSI 10/1S
2 NC/2 NO contacts	GFSIM 20/2S 	GFSI 20/2S

Ordering details

GFSIM 10/1S

Contacts 10/1S (20/2S), other configurations possible
M Snap action (without M slow action)
Series, S Protective shield

// With protective shield GFSI



Snap action
GFSIM 10/1S
GFSIM 20/2S

Material Number
1159404
1184185

Slow action
GFSI 10/1S
GFSI 20/2S

Material Number
1053499
1161879

Foot switches

// Series GFI, variants

Features/Options

- With pressure point: 2-step switching
- 4 contacts
- With protective shield
- Wide opening in protective shield
- Ergonomic pedal design
- Low pedal height
- Wiring compartment
- Degree of protection IP 67/IP 68 possible on request
- Available with mechanical interlock
- Available with special finish in RAL colour tones

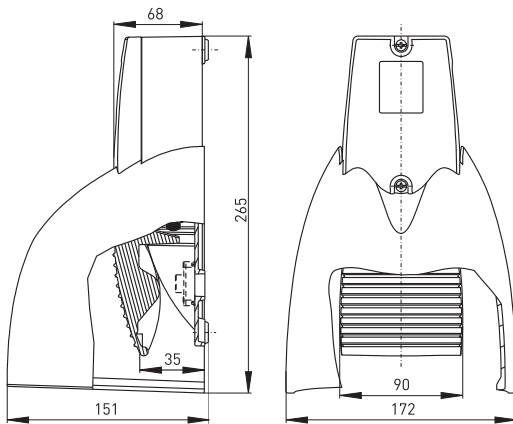
// GFSI D



Technical data

Standards	EN ISO 13849-1; EN 60947-5-1
Enclosure	aluminium die-cast, enamel finish, RAL 5011
Pedal	aluminium die-cast, enamel finish, RAL 5011
Protective shield	aluminium die-cast, enamel finish, RAL 2004
Connection	screw terminals
Cable cross-section	max. 2.5 mm ² (incl. conductor ferrules)
Cable entry	1 x M20 x 1.5
Contact material	silver
Degree of protection	IP 65 to IEC/EN 60529
Switching system	slow action with double break, positive break NC contact ⊖
Switch insert	2 x ES 40 GF
Switching element	2-step switching: 1 NC/1 NO contact pressure point: 1 NC/1 NO contact
Actuating force	aprox. 240 N
B_{10d} (10 % load)	2 million
T_M	max. 20 years
Utilisation category	AC-15
I_e/U_e	6 A/400 VAC
Max. fuse rating	6 A gG/gN fuse
Ambient temperature	- 25 °C ... + 80 °C
Mechanical life	> 1 million operations
Approvals	

34



Contact variants: Travel/contacts

	Slow action	Material Number
1 NC/1 NO contact	GFSI 10S D 10S 	on request

Ordering details

GFSI 10S D 10S


1NC/1NO contact
 Pressure point
 1NC/1NO contact, other configurations possible
 Series, S Protective shield



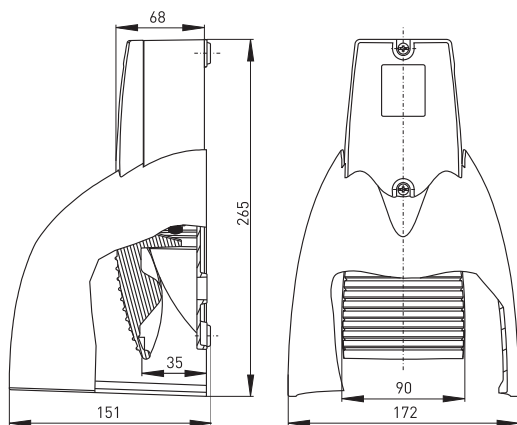
Features/Options

- With latching: ON/OFF principle
- Metal enclosure
- 2 contacts
- With protective shield
- Wide opening in protective shield
- Low pedal height
- Ergonomic pedal design
- Degree of protection IP 67/IP 68 possible on request
- Wiring compartment
- Available with special finish in RAL colour tones


Technical data

Standards	EN 60947-5-1
Enclosure	aluminium die-cast, enamel finish, RAL 5011
Pedal	aluminium die-cast, enamel finish, RAL 5011
Protective shield	aluminium die-cast, enamel finish, RAL 2004
Connection	screw terminals
Cable cross-section	max. 2.5 mm ² (incl. conductor ferrules)
Cable entry	1 x M20 x 1.5
Contact material	silver
Degree of protection	IP 65 to IEC/EN 60529
Switching system	slow action with double break, positive break NC contact ⊖
Switch insert	ES 60 GF RE
Switching element	1 NC/1 NO contact with latching
Utilisation category	AC-15
I _e /U _e	16 A/400 VAC
Max. fuse rating	16 A gG/gN fuse
Ambient temperature	- 25 °C ... + 80 °C
Mechanical life	> 1 million operations
Approvals	

// GFSI RE



Contact variants: Travel/contacts

	Slow action	Material Number
1 NC/1 NO contact	GFSI 1Ö/1S RE 	1182299

Ordering details

GFSI 1Ö/1S RE

Latching element
Contacts 1NC/1NO contact
Series, S Protective shield



Foot switches

// Series GFSI, variants

Features/Options

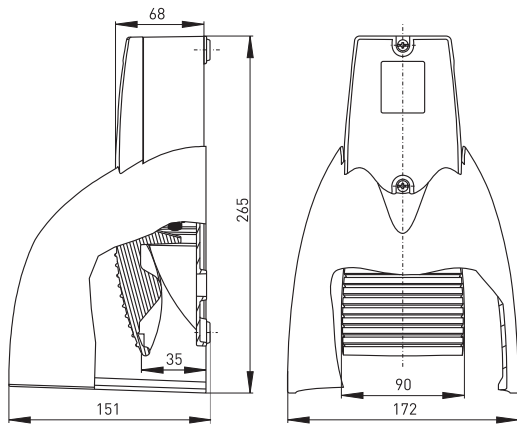
- With Hall sensor: Analogue output
- Metal enclosure
- Various output values available: 0 ... 10 VDC, 0 ... 20 mA or 4 ... 20 mA
- Analogue output signal proportional to pedal travel
- With protective shield and wide opening in protective shield
- Available with additional micro switch
- Ergonomic pedal design
- Degree of protection IP 67/IP 68 possible on request
- Wiring compartment
- Available with special finish in RAL colour tones

// GFSI HS



Technical data

Standards	EN 60947-5-1
Enclosure	aluminium die-cast, enamel finish, RAL 5011
Pedal	aluminium die-cast, enamel finish, RAL 5011
Protective shield	aluminium die-cast, enamel finish, RAL 2004
Connection	screw terminals
Cable cross-section	max. 1 mm ² (incl. conductor ferrules)
Cable entry	1 x M20 x 1.5
Degree of protection	IP 65 to IEC/EN 60529
Switching system	Hall sensor
Output values	
Output voltage U_a	0...10 VDC $\pm 1\%$
Output current I_a	0...20 mA $\pm 1\%$ or 4...20 mA $\pm 1\%$
I_e/U_e	at U_a : 25 mA/15 ... 30 VDC at I_a : 45 mA/15 ... 30 VDC
Ambient temperature	- 10 °C ... + 70 °C
Mechanical life	> 1 million operations
Approvals	



Contact variants: Travel/contacts

	Hall sensor	Material Number
U_a	GFSI HS 0-10 VDC 	1186230
I_a	GFSI HS 0-20 mA GFSI HS 4-20 mA 	on request 1169196

Ordering details

GFSI HS 0-20 mA

Output value I_a 0-20 mA
(I_a 4-20 mA, U_a 0-10 VDC)
Hall sensor
Series, S Protective shield



Features/Options

- With potentiometer: Analogue output
- Metal enclosure
- With various potentiometers available: 1 k Ω , 2 k Ω , 5 k Ω or 10 k Ω
- Start value can be set in factory
- With protective shield
- Wide opening in protective shield
- Ergonomic pedal design
- Degree of protection IP 67/IP 68 possible on request
- Wiring compartment
- Available with special finish in RAL colour tones

// GFSI POT1



Technical data

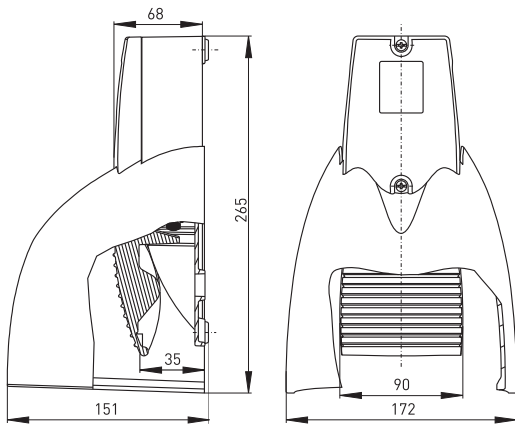
Standards	EN 60947-5-1
Enclosure	aluminium die-cast, enamel finish, RAL 5011
Pedal	aluminium die-cast, enamel finish, RAL 5011
Protective shield	aluminium die-cast, enamel finish, RAL 2004
Connection	soldering terminals
Cable entry	1 x M20 x 1.5
Contact material	silver, gold-plated
Degree of protection	IP 65 to IEC/EN 60529
Switching system	potentiometer
Resistance R	20 Ω ... 1 k Ω \pm 3 %; 20 Ω ... 2 k Ω \pm 3 %; 50 Ω ... 5 k Ω \pm 3 %; 100 Ω ... 10 k Ω \pm 3 %
Linearity	\pm 0.5 %
I_e/U_e	micro switch: 0.1 A/250 VAC; 0.1 A/24 VDC
Switching power	potentiometer: max. 1.5 W at 40 °C
Ambient temperature	- 15 °C ... + 80 °C
Mechanical life	> 1 million operations

Approvals



Note

The built-in micro switch provides for potential-free switching of the potentiometer.



Contact variants: Travel/contacts

	Potentiometer	Material Number
1 change-over	GFSI POT1 ... 1PW 	on request
2 change-over	GFSI POT1 ... 2PW 	on request

Ordering details

GFSI POT1 1K 1PW

Micro switch 1 change-over contact (2PW), other configurations possible

Potentiometer value 1 k Ω (2 k Ω , 5 k Ω or 10 k Ω)

Potentiometer

Series, S Protective shield



Foot switches

// Series GF 2

Features/Options

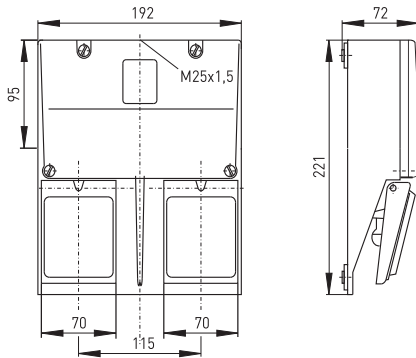
- Double-pedal type
- Without protective shield
- Max. 4 contacts per pedal
- Metal enclosure
- Different pedal functions possible
- Low pedal height
- Wiring compartment
- Ex version available
- Available with mechanical interlock (only for slow action S)
- Available with special finish in RAL colour tones

// GF 2



Technical data

Standards	EN ISO 13849-1; EN 60947-5-1
Enclosure	aluminium die-cast, enamel finish, RAL 5011
Cover	aluminium cast, enamel finish, RAL 5011
Pedal	glass-fibre reinforced thermoplastic
Connection	screw terminals
Cable cross-section	max. 2.5 mm ² (incl. conductor ferrules)
Cable entry	1 x M25 x 1.5
Contact material	silver
Degree of protection	IP 65 to IEC/EN 60529
Switching system	slow or snap action with double break, positive break NC contact ⊖
Switch insert	slow action: 2 contacts: ES 60 GF 4 contacts: ES 40 GF snap action: 2 and 4 contacts: ZS 232
B_{10d} (10 % load)	2 million
T_M	max. 20 years
Utilisation category	AC-15
I_e/U_e	slow action: 4 contacts: 6 A/400 VAC 2 contacts: 16 A/400 VAC snap action: 2 contacts: 4 A/230 VAC; 2.5 A/400 VAC; 1 A/500 VAC
Max. fuse rating	slow action: 4 contacts: 6 A gG/gN fuse 2 contacts: 16 A gG/gN fuse snap action: 4 A gG/gN fuse
Ambient temperature	- 25 °C ... + 80 °C
Mechanical life	> 1 million operations
Approvals	 GF 2 1ÖS/1ÖS, GF 2 2ÖS/2ÖS:



Contact variants: Travel/contacts

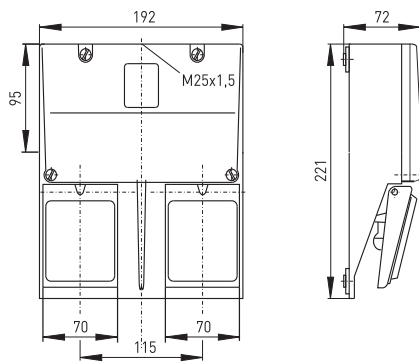
	Snap action	Slow action
1 NC/1 NO contact	GFM 2 1ÖS/1ÖS 	GF 2 1ÖS/1ÖS
2 NC/2 NO contacts	GFM 2 2ÖS/2ÖS 	GF 2 2ÖS/2ÖS

Ordering details

GFMK 2 1ÖS/1ÖS	1NC/1NO contact (2Ö/2S) right pedal
GFMK 2 2ÖS/2ÖS	1NC/1NO contact (2Ö/2S) left pedal, other configurations possible
GFMK 2 1ÖS/2ÖS	2 pedals
GFMK 2 2ÖS/1ÖS	K Pedal cover
GFMK 2 M 1ÖS/1ÖS	M Snap action (without M slow action)
GFMK 2 M 2ÖS/2ÖS	Series

Foot switches
 // Series GF 2, variants

// Without protective shield GF 2



Snap action
 GFM 2 1ÖS/1ÖS
 GFM 2 1ÖS/2ÖS
 GFM 2 2ÖS/1ÖS
 GFM 2 2ÖS/2ÖS

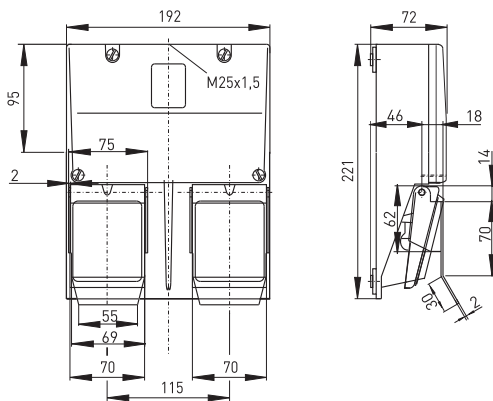
Material Number
 1048793
 1048809
 1048811
 1048805

Slow action
 GF 2 1ÖS/1ÖS
 GF 2 1ÖS/2ÖS
 GF 2 2ÖS/1ÖS
 GF 2 2ÖS/2ÖS

Material Number
 1048770
 1048808
 1048810
 1048798

39

// Pedal cover K



Snap action/Pedal cover
 GFMK 2 1ÖS/1ÖS
 GFMK 2 2ÖS/2ÖS

Material Number
 on request
 on request

Slow action/Pedal cover
 GFK 2 1ÖS/1ÖS
 GFK 2 2ÖS/2ÖS

Material Number
 1048774
 1160261

Foot switches

// Series GF 2, variants

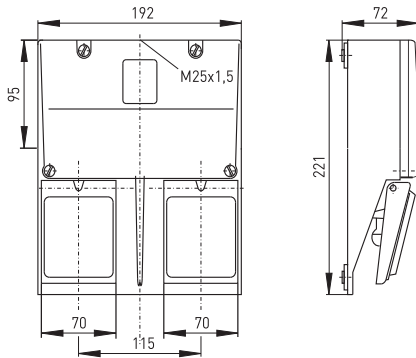
- Features/Options**
- With pressure point: 2-step switching
 - Double-pedal type
 - Max. 4 contacts per pedal
 - Metal enclosure
 - Without protective shield
 - Different pedal functions possible
 - Wiring compartment
 - Available with mechanical interlock
 - Available with special finish in RAL colour tones

// GF 2 D



Technical data

Standards	EN ISO 13849-1; EN 60947-5-1
Enclosure	aluminium die-cast, enamel finish, RAL 5011
Cover	aluminium cast, enamel finish, RAL 5011
Pedal	glass-fibre reinforced thermoplastic
Connection	screw terminals
Cable cross-section	max. 2.5 mm ² (incl. conductor ferrules)
Cable entry	1 x M25 x 1.5
Contact material	silver
Degree of protection	IP 65 to IEC/EN 60529
Switching system	slow action with double break, positive break NC contact ⊖
Switch insert	2 x ES 40 GF per pedal
Switching element	2-step switching: 1 NC/1 NO contact pressure point: 1 NC/1 NO contact
Actuating force	aprox. 240 N
B_{10d} (10 % load)	2 million
T_M	max. 20 years
Utilisation category	AC-15
I_e/U_e	6 A/400 VAC
Max. fuse rating	6 A gG/gN fuse
Ambient temperature	- 25 °C ... + 80 °C
Mechanical life	> 1 million operations
Approvals	



Contact variants: Travel/contacts

	Slow action	Material Number
1 NC/1 NO contact	GF 2 1ÖSD1ÖS/1ÖSD1ÖS 	1048826

Ordering details

GF 2 1ÖS D 1ÖS/1ÖS D 1ÖS

- Contacts right pedal
- 1NC/1NO contact left pedal
- Pressure point
- 1NC/1NO contact left pedal, other configurations possible
- 2 pedals
- Series



Features/Options

- With latching: ON/OFF principle
- Double-pedal type
- Max. 2 contacts per pedal
- Metal enclosure
- Without protective shield
- Different pedal functions possible
- Low pedal height
- Wiring compartment
- Available with special finish in RAL colour tones

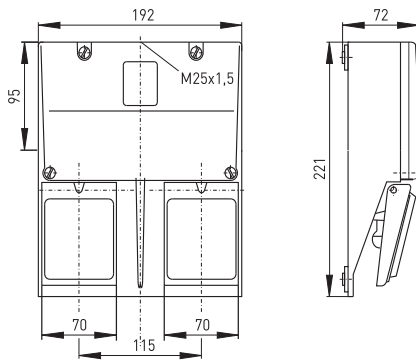
// GF 2 RE



Technical data

Standards	EN 60947-5-1
Enclosure	aluminium die-cast, enamel finish, RAL 5011
Cover	aluminium cast, enamel finish, RAL 5011
Pedal	glass-fibre reinforced thermoplastic
Connection	screw terminals
Cable cross-section	max. 2.5 mm ² (incl. conductor ferrules)
Cable entry	1 x M25 x 1.5
Contact material	silver
Degree of protection	IP 65 to IEC/EN 60529
Switching system	slow action with double break, positive break NC contact ⊖
Switch insert	1 x ES 60 GF RE per pedal
Switching element	1 NC/1 NO contact with latching
Utilisation category	AC-15
I_e/U_e	16 A/400 VAC
Max. fuse rating	16 A gG/gN fuse
Ambient temperature	-25 °C ... +80 °C
Mechanical life	> 1 million operations
Approvals	

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Contact variants: Travel/contacts

	Slow action	Material Number
1 NC/1 NO contact	GF 2 1ÖS RE/1ÖS RE 	1048772

Ordering details

GF 2 1ÖS RE/1ÖS RE

Latching element right p.
 1NC/1NO contact right pedal
 Latching element left pedal
 1NC/1NO contact left pedal, other configurations possible
 2 pedals
 Series



Foot switches

// Series GF 2, variants

Features/Options

- With potentiometer: Analogue output
- Double-pedal type
- Metal enclosure
- With various potentiometers available: 1 kΩ, 2 kΩ, 5 kΩ or 10 kΩ
- Start value can be set in factory
- Without protective shield
- Different pedal functions possible
- Low pedal height
- Wiring compartment
- Available with special finish in RAL colour tones

// GF 2 POT1

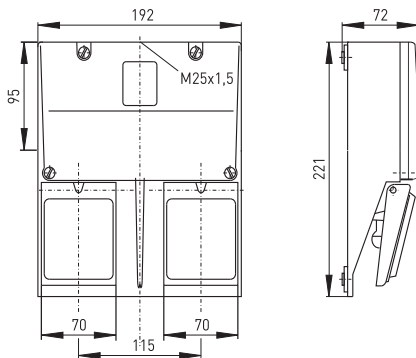


Technical data

Standards	EN 60947-5-1
Enclosure	aluminium die-cast, enamel finish, RAL 5011
Cover	aluminium cast, enamel finish, RAL 5011
Pedal	glass-fibre reinforced thermoplastic
Connection	soldering terminals
Cable entry	1 x M25 x 1.5
Contact material	silver, gold-plated
Degree of protection	IP 65 to IEC/EN 60529
Switching system	potentiometer
Resistance R	20 Ω ... 1 kΩ ±3 %; 20 Ω ... 2 kΩ ±3 %; 50 Ω ... 5 kΩ ±3 %; 100 Ω ... 10 kΩ ±3 %
Linearity	±0.5 %
I _e /U _e	micro switch: 0.1 A/250 VAC; 0.1 A/24 VDC
Switching power	potentiometer: max. 1.5 W at 40 °C
Ambient temperature	- 15 °C ... + 80 °C
Mechanical life	> 1 million operations

Approvals

Note The built-in micro switch provides for potential-free switching of the potentiometer.

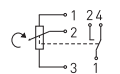


Contact variants: Travel/contacts

Potentiometer

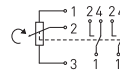
1 change-over

GF 2 POT1 1K 1PW/1K 1PW



2 change-over

GF 2 POT1 1K 2PW/1K 2PW



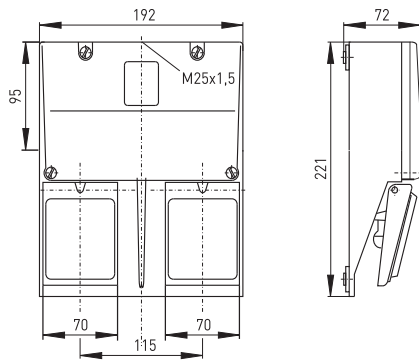
Ordering details

GF 2 POT1 1K 1PW/1K 1PW

Contacts right pedal
Micro sw. 1 change-over (2PW) l.p.
POTI value 1 kΩ (2, 5 or 10 kΩ) left
pedal, other configur. possible
Potentiometer
2 pedals
Series



// Potentiometer



Potentiometer
GF 2 Poti 1K 1PW/1K 1PW
GF 2 Poti 5K 1PW/5K 1PW
GF 2 Poti 10K 1PW/10K 1PW

Material Number
1184063
1048812
1048813

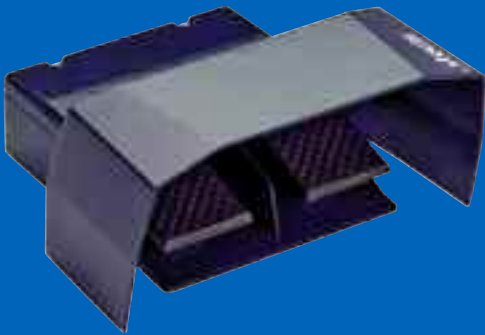
Foot switches

// Series GFS 2

Features/Options

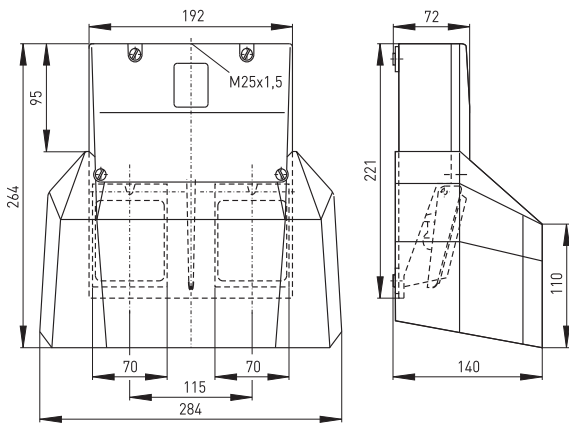
- Double-pedal type
- With protective shield
- Max. 4 contacts per pedal
- Metal enclosure
- Different pedal functions possible
- Low pedal height
- Wiring compartment
- Ex version available
- Available with mechanical interlock (only for slow action S)
- Available with special finish in RAL colour tones

// GFS 2

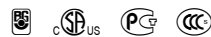


Technical data

Standards	EN ISO 13849-1; EN 60947-5-1
Enclosure	aluminium die-cast, enamel finish, RAL 5011
Pedal	glass-fibre reinforced thermoplastic
Protective shield	aluminium die-cast, enamel finish, RAL 5011
Connection	screw terminals
Cable cross-section	max. 2.5 mm ² (incl. conductor ferrules)
Cable entry	1 x M25 x 1.5
Contact material	silver
Degree of protection	IP 65 to IEC/EN 60529
Switching system	slow or snap action with double break, positive break NC contact ⊖
Switch insert	slow action: 2 contacts: ES 60 GF 4 contacts: ES 40 GF snap action: 2 and 4 contacts: ZS 232
B_{10d} (10 % load)	2 million
T_M	max. 20 years
Utilisation category	AC-15
I_e/U_e	slow action: 4 contacts: 6 A/400 VAC 2 contacts: 16 A/400 VAC snap action: 2 contacts: 4 A/230 VAC; 2.5 A/400 VAC; 1 A/500 VAC
Max. fuse rating	slow action: 4 contacts: 6 A gG/gN fuse 2 contacts: 16 A gG/gN fuse snap action: 4 A gG/gN fuse
Ambient temperature	- 25 °C ... + 80 °C
Mechanical life	> 1 million operations
Approvals	



GFS 2 1ÖS/1ÖS, GFS 2 2ÖS/2ÖS:



Contact variants: Travel/contacts

	Snap action	Slow action
1 NC/1 NO contact	GFSM 2 1ÖS/1ÖS 	GFS 2 1ÖS/1ÖS
2 NC/2 NO contacts	GFSM 2 2ÖS/2ÖS 	GFS 2 2ÖS/2ÖS

Ordering details

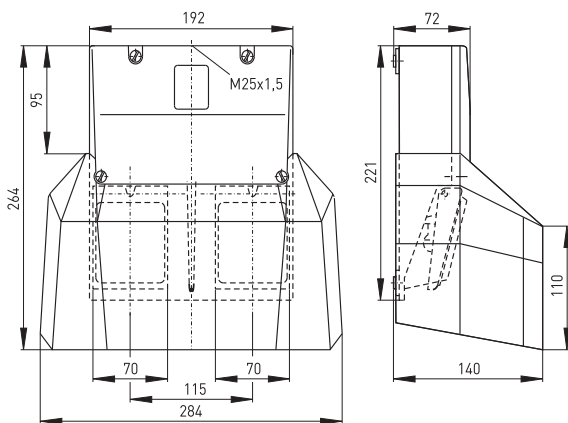
GFSMK 2 1Ö1S/1Ö1S TST

- TST Carrying handle (FST foot rest)
- 1NC/1NO contact (2Ö/2S) right pedal
- 1NC/1NO contact (2Ö/2S) left pedal, other configurations possible
- 2 pedals
- K Pedal cover
- M Snap action (without M slow action)
- S Protective shield
- Series

Foot switches

// Series GFS 2, variants

// Pedal cover K



Snap action
 GFSM 2 1ÖS/1ÖS
 GFSM 2 1ÖS/2ÖS
 GFSM 2 2ÖS/1ÖS
 GFSM 2 2ÖS/2ÖS

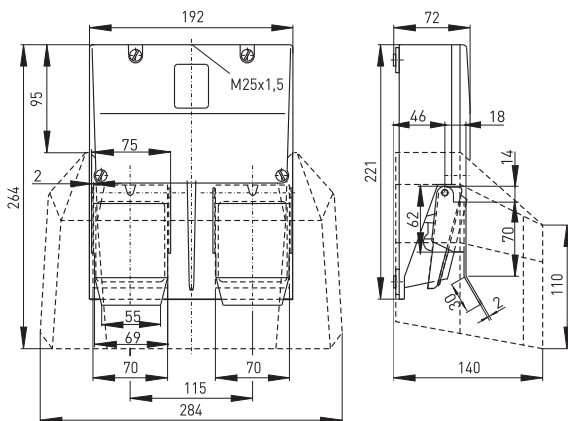
Material Number
 1048877
 1048905
 1048908
 1048893

Slow action
 GFS 2 1ÖS/1ÖS
 GFS 2 1ÖS/2ÖS
 GFS 2 2ÖS/1ÖS
 GFS 2 2ÖS/2ÖS

Material Number
 1048842
 1048903
 1048906
 1048883

45

// Pedal cover K



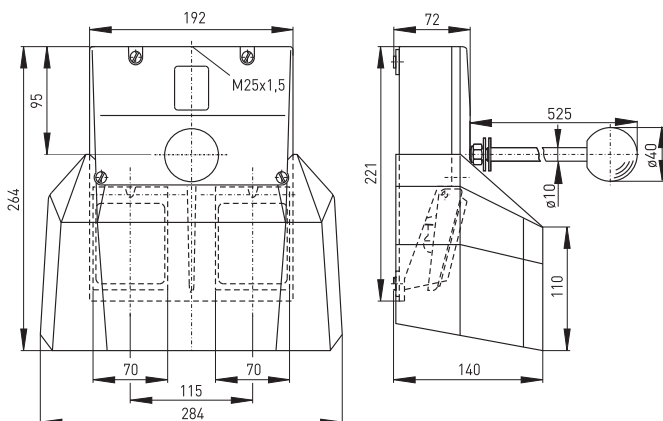
Snap action/Pedal cover
 GFSMK 2 1ÖS/1ÖS
 GFSMK 2 2ÖS/2ÖS

Material Number
 1048878
 1048894

Slow action/Pedal cover
 GFSK 1ÖS/1ÖS
 GFSK 2ÖS/2ÖS

Material Number
 1048848
 on request

// Carrying handle TST



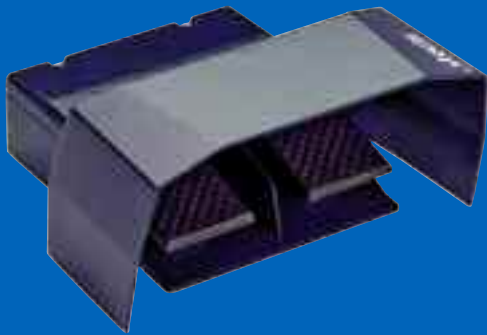
Features/Options
 - Carrying handle:
 stainless steel 1.4104 with thermoplastic grip

Foot switches

// Series GFS 2, variants

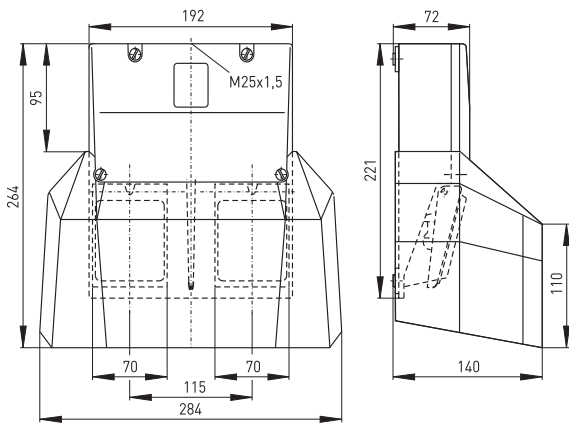
- Features/Options**
- With pressure point: 2-step switching
 - Double-pedal type
 - Max. 4 contacts per pedal
 - Metal enclosure
 - With protective shield
 - Different pedal functions possible
 - Low pedal height
 - Wiring compartment
 - Available with mechanical interlock
 - Available with special finish in RAL colour tones

// GFS 2 D



Technical data

Standards	EN ISO 13849-1; EN 60947-5-1
Enclosure	aluminium die-cast, enamel finish, RAL 5011
Pedal	glass-fibre reinforced thermoplastic
Protective shield	aluminium die-cast, enamel finish, RAL 5011
Connection	screw terminals
Cable cross-section	max. 2.5 mm ² (incl. conductor ferrules)
Cable entry	1 x M25 x 1.5
Contact material	silver
Degree of protection	IP 65 to IEC/EN 60529
Switching system	slow action with double break, positive break NC contact ⊖
Switch insert	2 x ES 40 GF per pedal
Switching element	2-step switching: 1 NC/1 NO contact pressure point: 1 NC/1 NO contact
Actuating force	aprox. 240 N
B_{10d} (10 % load)	2 million
T_M	max. 20 years
Utilisation category	AC-15
I_e/U_e	6 A/400 VAC
Max. fuse rating	6 A gG/gN fuse
Ambient temperature	- 25 °C ... + 80 °C
Mechanical life	> 1 million operations
Approvals	



Contact variants: Travel/contacts

	Slow action	Material Number
1 NC/1 NO contact	GFS 2 1ÖSD1ÖS/1ÖSD1ÖS 	1048916

Ordering details

GFS 2 1ÖS D 1ÖS/1ÖS D 1ÖS

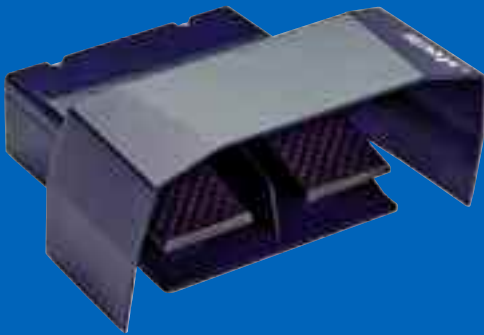
- Contacts right pedal
- 1NC/1NO contact left pedal
- Pressure point
- 1NC/1NO contact left pedal,
- other configurations possible
- 2 pedals
- Series, S Protective shield



Features/Options

- With latching: ON/OFF principle
- Double-pedal type
- Max. 2 contacts per pedal
- Metal enclosure
- With protective shield
- Different pedal functions possible
- Low pedal height
- Wiring compartment
- Available with special finish in RAL colour tones

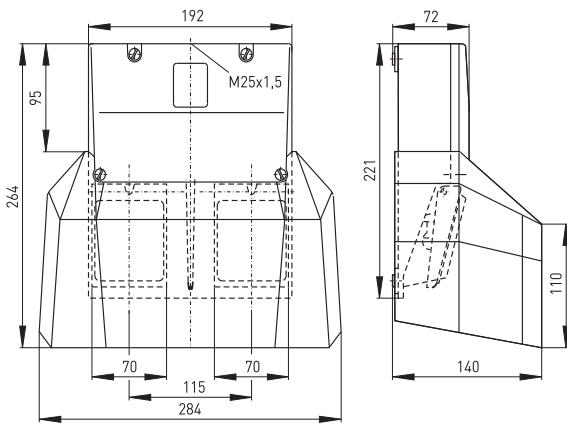
// GFS 2 RE




Technical data

Standards	EN 60947-5-1
Enclosure	aluminium die-cast, enamel finish, RAL 5011
Pedal	glass-fibre reinforced thermoplastic
Protective shield	aluminium die-cast, enamel finish, RAL 5011
Connection	screw terminals
Cable cross-section	max. 2.5 mm ² (incl. conductor ferrules)
Cable entry	1 x M25 x 1.5
Contact material	silver
Degree of protection	IP 65 to IEC/EN 60529
Switching system	slow action with double break, positive break NC contact ⊖
Switch insert	1 x ES 60 GF RE per pedal
Switching element	1 NC/1 NO contact with latching
Utilisation category	AC-15
I_e/U_e	16 A/400 VAC
Max. fuse rating	16 A gG/gN fuse
Ambient temperature	- 25 °C ... + 80 °C
Mechanical life	> 1 million operations

Approvals



Contact variants: Travel/contacts

	Slow action	Material Number
1 NC/1 NO contact	GFS 2 1ÖS RE/1ÖS RE 	1048862

Ordering details

GFS 2 1ÖS RE/1ÖS RE

- Contacts right pedal
- Latching element left pedal
- 1NC/1NO contact left pedal
- 2 pedals
- S Protective shield
- Series



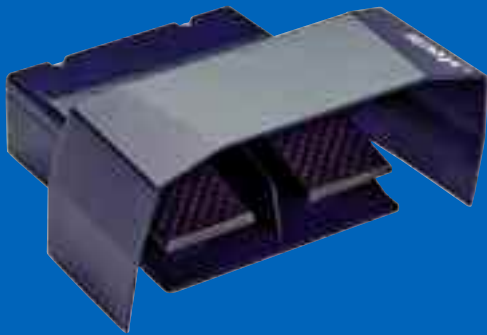
Foot switches

// Series GFS 2, variants

Features/Options

- With potentiometer: Analogue output
- Double-pedal type
- Metal enclosure
- With various potentiometers available: 1 kΩ, 2 kΩ, 5 kΩ or 10 kΩ
- Start value can be set in factory
- With protective shield
- Different pedal functions possible
- Low pedal height
- Wiring compartment
- Available with special finish in RAL colour tones

// GFS 2 POTI



Technical data

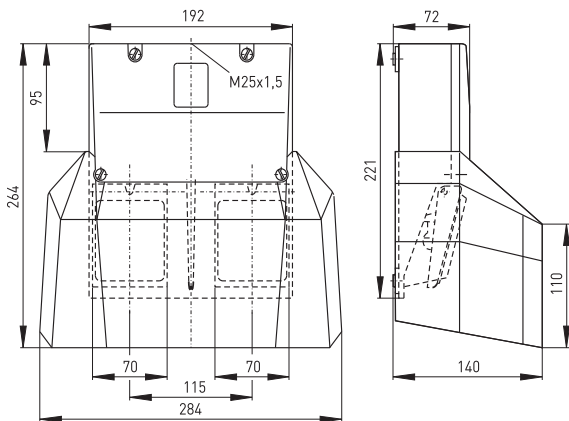
Standards	EN 60947-5-1
Enclosure	aluminium die-cast, enamel finish, RAL 5011
Pedal	glass-fibre reinforced thermoplastic
Protective shield	aluminium die-cast, enamel finish, RAL 5011
Connection	soldering terminals
Cable entry	1 x M25 x 1.5
Contact material	silver, gold-plated
Degree of protection	IP 65 to IEC/EN 60529
Switching system	potentiometer
Resistance R	20 Ω ... 1 kΩ ±3 %; 20 Ω ... 2 kΩ ±3 %; 50 Ω ... 5 kΩ ±3 %; 100 Ω ... 10 kΩ ±3 %
Linearity	±0.5 %
I _e /U _e	micro switch: 0.1 A/250 VAC; 0.1 A/24 VDC
Switching power	potentiometer: max. 1.5 W at 40 °C
Ambient temperature	- 15 °C ... + 80 °C
Mechanical life	> 1 million operations

Approvals



Note

The built-in micro switch provides for potential-free switching of the potentiometer.



Contact variants: Travel/contacts

	Potentiometer
1 change-over	GFS 2 POTI 1K 1PW/1K 1PW
2 change-over	GFS 2 POTI 1K 2PW/1K 2PW

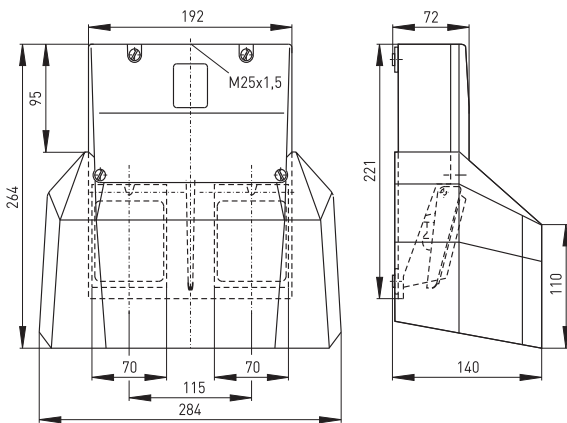
Ordering details

GFS 2 POTI 1K 1PW/1K 1PW

- Contacts right pedal
- Micro switch 1 change-over (2PW) left pedal
- POTI value 1 kΩ (2, 5 or 10 kΩ) l.p.
- Potentiometer
- 2 pedals
- Series, S Protective shield



// Potentiometer



Potentiometer
GFS 2 Poti 1K 1PW/1K 1PW
GFS 2 Poti 2K 1PW/1K 1PW
GFS 2 Poti 5K 1PW/5K 1PW
GFS 2 Poti 10K 1PW/10K 1PW

GFS 2 Poti 1K 2PW/1K 2PW

Material Number
1171137
1165008
1048912
1048910

on request

Foot switches // Series GF 3

// GF 3

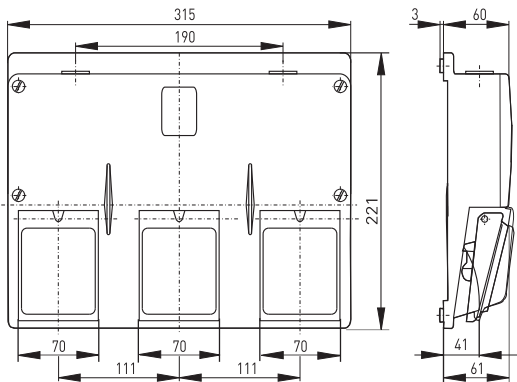


Features/Options

- Triple-pedal type
- Without protective shield
- Max. 4 contacts per pedal
- Metal enclosure
- Different pedal functions possible
- Low pedal height
- Wiring compartment
- Ex version available
- Available with mechanical interlock (only for slow action S)
- Available with special finish in RAL colour tones

Technical data

Standards	EN ISO 13849-1; EN 60947-5-1
Enclosure	aluminium cast, enamel finish, RAL 5011
Cover	aluminium cast, enamel finish, RAL 5011
Pedal	glass-fibre reinforced thermoplastic
Connection	screw terminals
Cable cross-section	max. 2.5 mm ² (incl. conductor ferrules)
Cable entry	2 x M25 x 1.5
Contact material	silver
Degree of protection	IP 65 to IEC/EN 60529
Switching system	slow or snap action with double break, positive break NC contact ⊖
Switch insert	slow action: 2 contacts: ES 60 GF 4 contacts: ES 40 GF snap action: 2 and 4 contacts: ZS 232
B_{10d} (10 % load)	2 million
T_M	max. 20 years
Utilisation category	AC-15
I_e/U_e	slow action: 4 contacts: 6 A/400 VAC 2 contacts: 16 A/400 VAC snap action: 2 contacts: 4 A/230 VAC; 2.5 A/400 VAC; 1 A/500 VAC
Max. fuse rating	slow action: 4 contacts: 6 A gG/gN fuse 2 contacts: 16 A gG/gN fuse snap action: 4 A gG/gN fuse
Ambient temperature	- 25 °C ... + 80 °C
Mechanical life	> 1 million operations
Approvals	



Contact variants: Travel/contacts

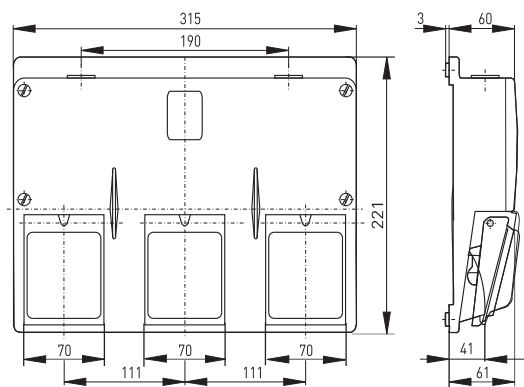
	Snap action	Slow action
1 NC/1 NO contact	GFM 3 1ÖS/1ÖS/1ÖS 	GF 3 1ÖS/1ÖS/1ÖS
2 NC/2 NO contacts	GFM 3 2ÖS/2ÖS/2ÖS 	GF 3 2ÖS/2ÖS/2ÖS

Ordering details

GFM 3 1ÖS/1ÖS/1ÖS

- Contacts right pedal
 - Contacts center pedal
 - 1NC/1NO contact (2Ö/2S) left pedal, other configurations possible
 - 3 pedals
 - M Snap action (without M slow action)
- Series

// Without protective shield GF



Snap action
GFM 3 1ÖS/1ÖS/1ÖS
GFM 3 2ÖS/2ÖS/2ÖS

Material Number
1048949
1048952

Slow action
GF 3 1ÖS/1ÖS/1ÖS
GF 3 2ÖS/2ÖS/2ÖS

Material Number
1048945
1048951

Foot switches

// Series GFS 3

// GFS 3



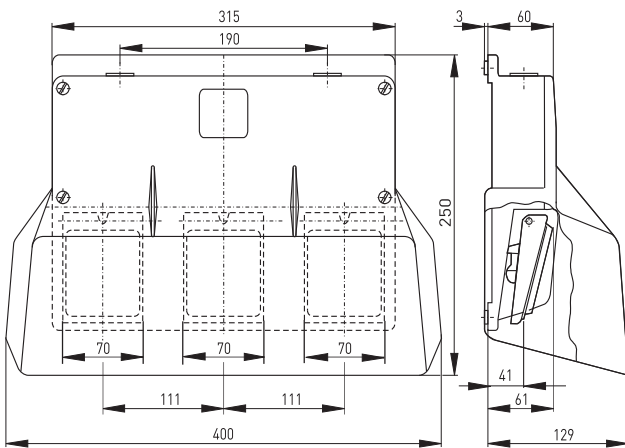
Features/Options

- Triple-pedal type
- With protective shield
- Max. 4 contacts per pedal
- Metal enclosure
- Different pedal functions possible
- Low pedal height
- Wiring compartment
- Ex version available
- Available with mechanical interlock (only for slow action S)
- Available with special finish in RAL colour tones

Technical data

Standards	EN ISO 13849-1; EN 60947-5-1
Enclosure	aluminium cast, enamel finish, RAL 5011
Pedal	glass-fibre reinforced thermoplastic
Protective shield	aluminium cast, enamel finish, RAL 5011
Connection	screw terminals
Cable cross-section	max. 2.5 mm ² (incl. conductor ferrules)
Cable entry	2 x M25 x 1.5
Contact material	silver
Degree of protection	IP 65 to IEC/EN 60529
Switching system	slow or snap action with double break, positive break NC contact ⊖
Switch insert	slow action: 2 contacts: ES 60 GF 4 contacts: ES 40 GF snap action: 2 and 4 contacts: ZS 232
B_{10d} (10 % load)	2 million
T_M	max. 20 years
Utilisation category	AC-15
I_e/U_e	slow action: 4 contacts: 6 A/400 VAC 2 contacts: 16 A/400 VAC snap action: 2 contacts: 4 A/230 VAC; 2.5 A/400 VAC; 1 A/500 VAC
Max. fuse rating	slow action: 4 contacts: 6 A gG/gN fuse 2 contacts: 16 A gG/gN fuse snap action: 4 A gG/gN fuse
Ambient temperature	- 25 °C ... + 80 °C
Mechanical life	> 1 million operations
Approvals	

GFS 3 1ÖS/1ÖS/1ÖS, GFS 3 2ÖS/2ÖS/2ÖS:



Contact variants: Travel/contacts

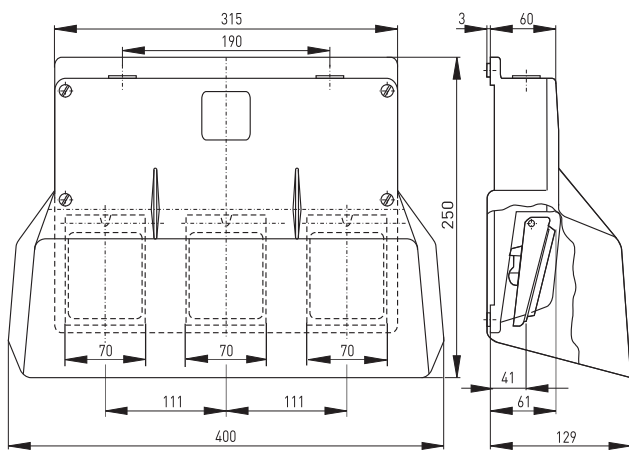
	Snap action	Slow action
1 NC/1 NO contact	GFSM 3 1ÖS/1ÖS/1ÖS 	GFS 3 1ÖS/1ÖS/1ÖS
2 NC/2 NO contacts	GFSM 3 2ÖS/2ÖS/2ÖS 	GFS 3 2ÖS/2ÖS/2ÖS

Ordering details

GFSM 3 1ÖS/1ÖS/1ÖS

- Contacts right pedal
 - Contacts center pedal
 - 1NC/1NO contact (2Ö/2S) left pedal, other configurations possible
 - 3 pedals
 - M Snap action (without M slow action)
 - S Protective shield
- Series

// With protective shield GFS 3

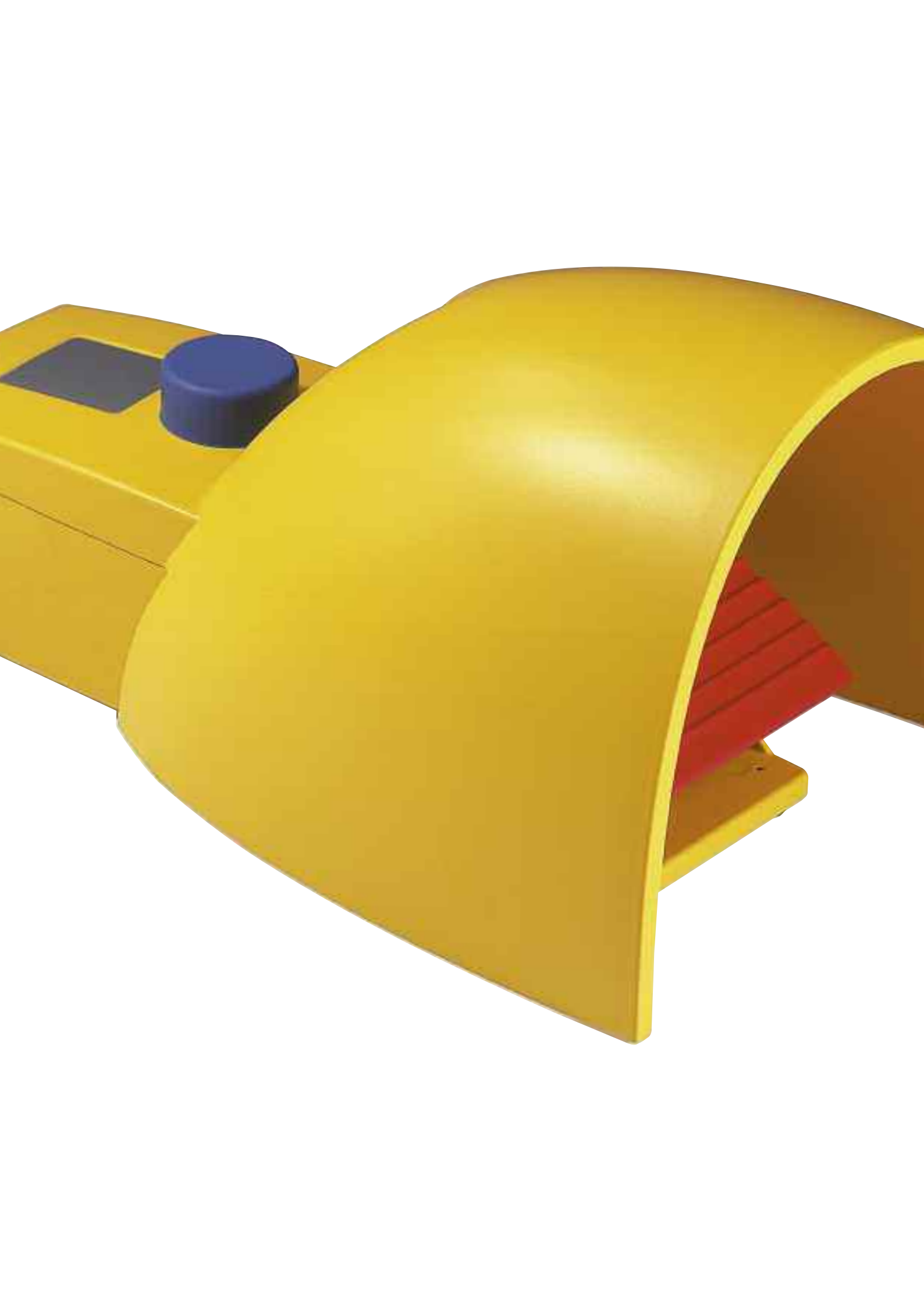


Snap action
GFSM 3 1ÖS/1ÖS/1ÖS
GFSM 3 2ÖS/2ÖS/2ÖS

Material Number
1048959
1048962

Slow action
GFS 3 1ÖS/1ÖS/1ÖS
GFS 3 2ÖS/2ÖS/2ÖS

Material Number
1048956
1048961





Safety foot switches Metal enclosure

Single-pedal types

// [Series GFS VD](#)

from page 58

// [Series GFSI VD](#)

from page 60

Double-pedal types

// [Series GFS 2 VD](#)

from page 62



Safety foot switches

Metal enclosure

Application

Safety foot switches are mounted on machines and plants as enabling switches in cases where operation using the hands is not possible and an emergency-stop function in case of a hazardous situation is required.

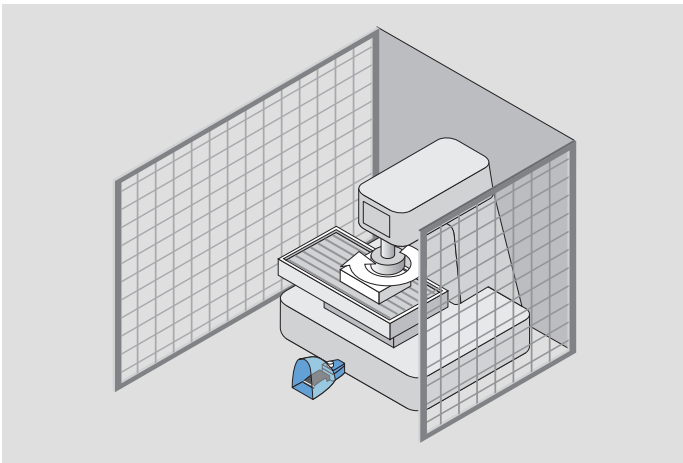
Design and mode of operation

All safety foot switches are mounted with a shield to protect against unintentional operation. When the foot pedal is actuated to as far as the pressure point, the NO contact is closed. If, in case of danger, the pedal is actuated beyond the pressure point, then the positive break NC contact is opened and mechanically latched. Reset operation is carried out by means of a push button. The function principle of all safety foot switches is also shown in the drawing below. The safety foot switches conform to IP 65.

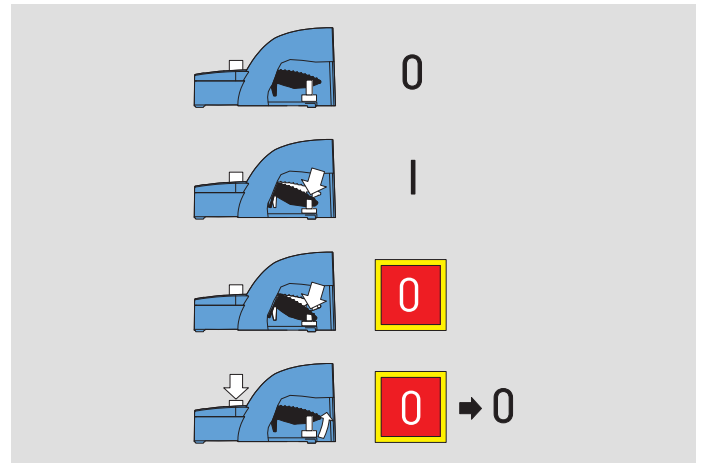
All safety foot switches bear the CE mark according to the Machinery Directive.

Application

Safety foot switch at a machining center



Function principle



Safety foot switches

// Series GFS VD

Features/Options

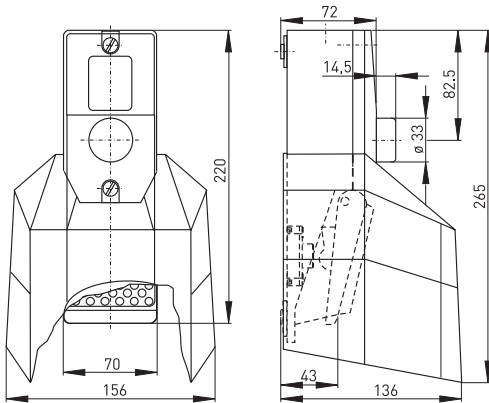
- GFS VD: NC contact 15-16 ⊖ in series with NO contact 23-24 (internal wiring)
- With impulse wiping contacts GFS IK VD: without switching impulse when unlocking foot switch; NO contact 13-14 is converted into positive break NC contact ⊖ by internal baffle after pressure point, Safety contact: 13-14 ⊖, Signalling contact: 21-22
- Max. 4 contacts
- Metal enclosure
- Wiring compartment
- Available with special finish in RAL colour tones

// GFS VD



Technical data

Standards	EN ISO 13849-1; EN 60947-5-1, BG-GS-ET-15
Enclosure	aluminium die-cast, enamel finish, RAL 5011
Pedal	glass-fibre reinforced thermoplastic
Protective shield	aluminium die-cast, enamel finish, RAL 5011
Connection	screw terminals
Cable cross-section	max. 2.5 mm ² (incl. conductor ferrules)
Cable entry	1 x M20 x 1.5
Contact material	silver
Degree of protection	IP 65 to EN 60529
Switching system	slow action with double break, positive break NC contact ⊖ per EN 60947-5-1
Switch insert	ES 60 GF VD, ES 60 GF IK VD
Contacts	1 NO/1 NC or 2 NO/2 NC contacts
Actuating force	aprox. 240 N
B_{10d} (10 % load)	200,000
T_M	max. 20 years
Utilisation category	AC-15
U_{imp}	6 kV
U_i	500 V
I_{the}	GFS VD: 16 A, GFS IK VD: 6 A
I_e/U_e	GFS VD: 16 A/400 VAC, GFS IK VD: 6 A/400 VAC
Contact load capacity	max. 400 VAC, GFS VD: max. 16 A (cos φ = 1), GFS IK VD: max. 6 A (cos φ = 1)
Max. fuse rating	GFS VD: 16 A gG/gN fuse, GFS IK VD: 6 A gG/gN fuse
Ambient temperature	- 25 °C ... + 80 °C
Mechanical life	> 100,000 operations
Approvals	 GFS IK VD:



Contact variants: Travel/contacts

	Slow action	Impulse wiping contact
1 NC/1 NO contact	GFS 1S D 10 VD 	GFS IK 10IS D 10 VD
2 NC/2 NO contacts	GFS 2S D 20 VD 	GFS IK 202S D 20 VD

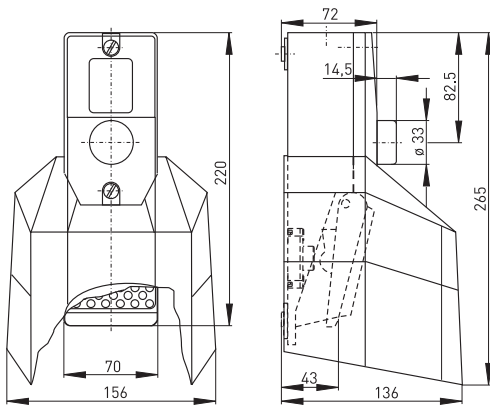
Ordering details

GFS 1S D 10 VD

1 NO contact (2S D 20 VD, IK 10S D 10 VD, IK 20S D 20 VD)
 S Protective shield
 Series

Foot switches
// Series GFS VD, variants

// With protective shield GFS



Slow action
GFS 1S D 1Ö VD
GFS 2S D 2Ö VD

Material Number
1048696
1048719

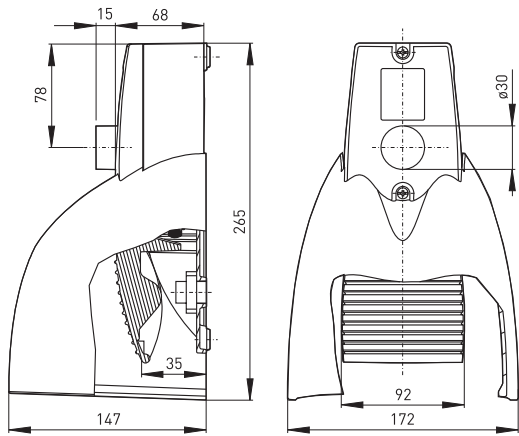
Impulse wiping contact
GFS IK 1Ö1S D 1Ö VD
GFS IK 2Ö2S D 2Ö VD

Material Number
1181480
1179113

Safety foot switches

// Series GFSI VD

// GFSI VD



Features/Options

- GFSI VD: NC contact 15-16 ⊖ in series with NO contact 23-24 (internal wiring)
- With impulse wiping contacts GFSI IK VD: without switching impulse when unlocking foot switch; NO contact 13-14 is converted into positive break NC contact ⊖ by internal baffle after pressure point, Safety contact: 13-14 ⊖, Signalling contact: 21-22
- Max. 4 contacts
- Ergonomic pedal shape and wide opening in protective shield
- Wiring compartment
- Available with special finish in RAL colour tones

Technical data

Standards	EN ISO 13849-1; EN 60947-5-1, BG-GS-ET-15
Enclosure	aluminium die-cast, enamel finish, RAL 5011
Pedal	aluminium die-cast, enamel finish, RAL 5011
Protective shield	aluminium die-cast, enamel finish, RAL 2004
Connection	screw terminals
Cable cross-section	max. 2.5 mm ² (incl. conductor ferrules)
Cable entry	1 x M20 x 1.5
Contact material	silver
Degree of protection	IP 65 to EN 60529
Switching system	slow action with double break, positive break NC contact ⊖ per EN 60947-5-1
Switch insert	ES 60 GF VD, ES 60 GF IK VD
Contacts	1 NO/1 NC or 2 NO/2 NC contacts
Actuating force	aprox. 240 N
B_{10d} (10 % load)	200,000
T_M	max. 20 years
Utilisation category	AC-15
U_{imp}	6 kV
U_i	500 V
I_{the}	GFS VD: 16 A, GFS IK VD: 6 A
I_e/U_e	GFS VD: 16 A/400 VAC, GFS IK VD: 6 A/400 VAC
Contact load capacity	max. 400 VAC, GFS VD: max. 16 A (cos φ = 1), GFSI IK VD: max. 6 A (cos φ = 1)
Max. fuse rating	GFS VD: 16 A gG/gN fuse, GFSI IK VD: 6 A gG/gN fuse
Ambient temperature	- 25 °C ... + 80 °C
Mechanical life	> 100,000 operations
Approvals	

GFSI IK 2ÖS D 2Ö VD:

Contact variants: Travel/contacts

	Slow action	Impulse wiping contact
1 NC/1 NO contact	GFSI 1S D 1Ö VD 	GFSI IK 1Ö1S D 1ÖVD
2 NC/2 NO contacts	GFSI 2S D 2Ö VD 	GFSI IK 2Ö2S D 2ÖVD

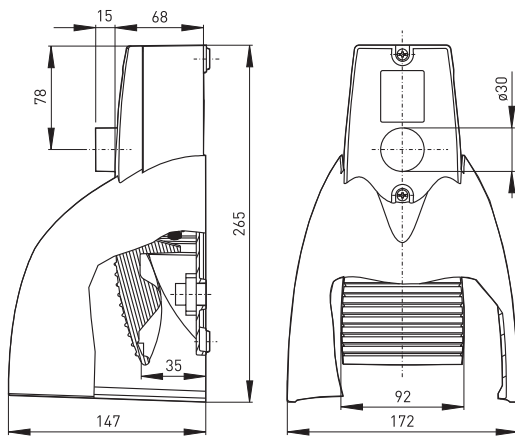
Ordering details

GFSI 1S D 1Ö VD

1 NO contact (2S D 2Ö VD,
IK 1ÖS D 1Ö VD, IK 2ÖS D 2Ö VD)
Series, S Protective shield

Foot switches
// Series GFSI VD, variants

// With protective shield GFS



Slow action
GFSI 1S D 1Ö VD
GFSI 2S D 2Ö VD

Material Number
1159564
1177932

Impulse wiping contact
GFS IK 1Ö1S D 1Ö VD
GFS IK 2Ö2S D 2Ö 1ÖSVD
GFSI IK 2Ö2S D 2Ö 1ÖS
GFSI IK 2Ö2S D 2Ö 2Ö

Material Number
1184002
1181942
1181885
1183173

Safety foot switches

// Series GFS 2 VD

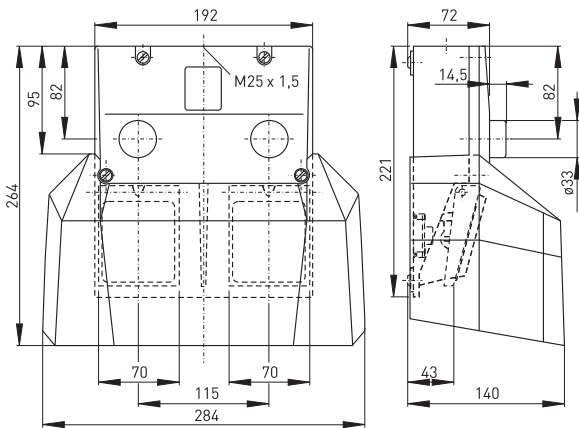
Features/Options

- Double-pedal type
- GFS 2 VD: NC contact 15-16 ⊖ in series with NO contact 23-24 (internal wiring)
- With impulse wiping contacts GFS 2 IK VD: without switching impulse when unlocking foot switch; NO contact 13-14 is converted into positive break NC contact ⊖ by internal baffle after pressure point, Safety contact: 13-14 ⊖, Signalling contact: 21-22
- Max. 4 contacts per pedal, max. 3 pedals available
- Wiring compartment
- Available with special finish in RAL colour tones

// GFS 2 VD



62



Technical data

Standards	EN ISO 13849-1; EN 60947-5-1, BG-GS-ET-15
Enclosure	aluminium die-cast, enamel finish, RAL 5011
Pedal	glass-fibre reinforced thermoplastic
Protective shield	aluminium die-cast, enamel finish, RAL 5011
Connection	screw terminals
Cable cross-section	max. 2.5 mm ² (incl. conductor ferrules)
Cable entry	1 x M25 x 1.5
Contact material	silver
Degree of protection	IP 65 to EN 60529
Switching system	slow action with double break, positive break NC contact ⊖ per EN 60947-5-1
Switch insert	ES 60 GF VD, ES 60 GF IK VD
Contacts	1 NO/1 NC or 2 NO/2 NC contacts per pedal
Actuating force	aprox. 240 N
B_{10d} (10 % load)	200,000
T_M	max. 20 years
Utilisation category	AC-15
U_{imp}	6 kV
U_i	500 V
I_e^{the}	GFS 2 VD: 16 A, GFS 2 IK VD: 6 A
I_e/U_e	GFS 2 VD: 16 A/400 VAC, GFS 2 IK VD: 6 A/400 VAC
Contact load capacity	max. 400 VAC, GFS VD: max. 16 A (cos φ = 1), GFS 2 IK VD: max. 6 A (cos φ = 1)
Max. fuse rating	GFS 2 VD: 16 A gG/gN fuse, GFS 2 IK VD: 6 A gG/gN fuse
Ambient temperature	- 25 °C ... + 80 °C
Mechanical life	> 100,000 operations
Approvals	 GFS 2 IK VD:

Contact variants: Travel/contacts

	Slow action	Impulse wiping contact
1 NC/1 NO contact	GFS 2 1S D 1Ö VD/... 	GFS 2 IK 1ÖS D 1Ö ...
2 NC/2 NO contacts	GFS 2 2S D 2Ö VD/... 	GFS 2 IK 2ÖS D 2Ö ...

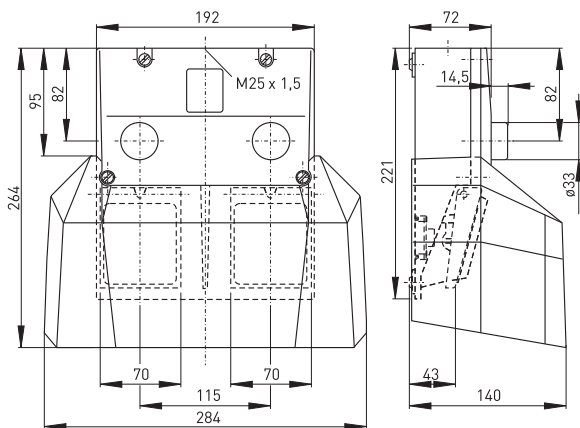
Ordering details

GFS 2 IK 1ÖS D 1Ö VD/IK 1ÖS D 1Ö VD	1 NC/1 NO contact right pedal
IK 1ÖS D 1Ö VD	IK Impulse wiping contact right pedal
2S D 2Ö VD	1 NC/1 NO contact (2S D 2Ö VD, 2ÖS D 2Ö VD: 2 NC/2 NO contacts) left pedal
IK 2ÖS D 2Ö VD	IK Impulse wiping contact left pedal
2 pedals (3 pedals)	
S Protective shield	
Series	

Foot switches

// Series GFS 2 VD, variants

// With protective shield GFS



Slow action

GFS 2 1S D 1Ö VD/1S D 1Ö VD
GFS 2 2S D 2Ö VD/2S D 2Ö VD

Material Number

1048899
1048930

Impulse wiping contact

GFS 2 IK 1Ö1S D 1Ö VD
GFS 2 IK 2Ö2S D 2Ö VD

Material Number

on request
on request





Foot switches
Thermoplastic enclosure

Single-pedal types
// Series KF
from page 68
// Series KFS
from page 72

Double-pedal types
// Series KF 2
from page 76

Triple-pedal types
// Series KF 3
from page 80

Four-pedal types
// Series KF 4
from page 82

Five-pedal types
// Series KF 5
from page 84



Foot switches

Thermoplastic enclosure

Application

Applications for the plastic KF range switches include use on packaging machines, in the storage and conveyor technology, as well as on textile machinery.

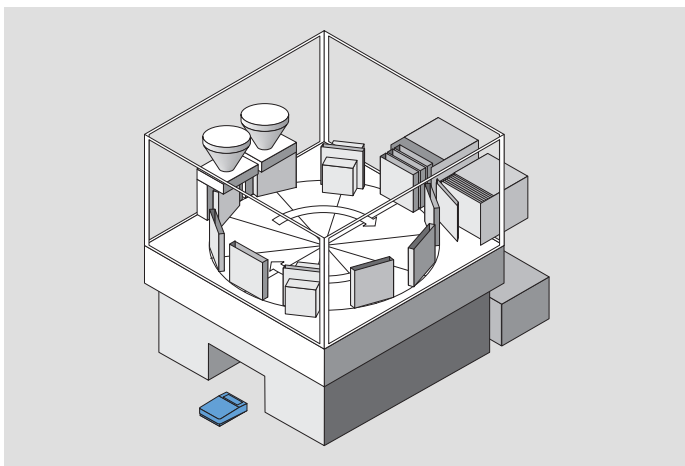
Design and mode of operation

KF range foot switches are available with a choice of reed contacts, micro switches or Hall sensors. They have protection class IP 65/67.

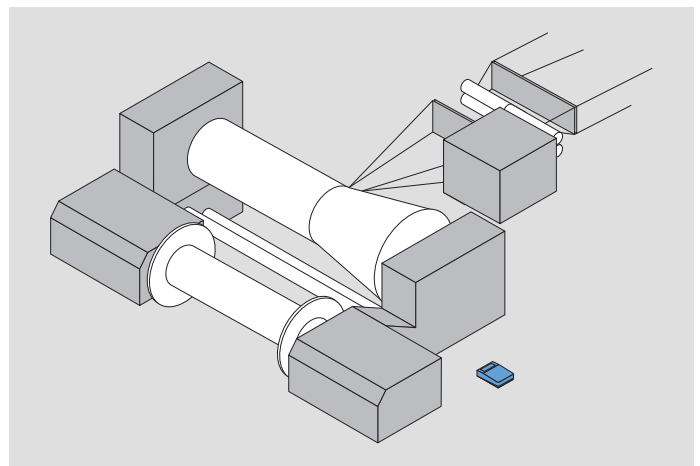
All foot switches bear the CE mark according to the Low Voltage Directive.

Application

Foot switch at a packaging machine



Foot switch at a textile machine



Foot switches

// Series KF

Features/Options

- Thermoplastic enclosure
- Small flat design
- Without protective shield
- Max. 2 contacts
- Reed contacts for low currents from 1 mA to 1 A
- Micro switches for current load up to 5 A
- With prewired cable, length 2 or 5 m
- Available with plug-in connector
- Other cable lengths and types possible

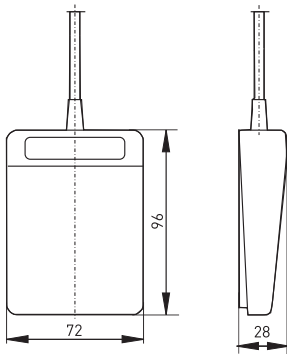
// KF



Technical data

Standards	EN 60947-5-1; VDE 0660 part 200
Enclosure	polyamide 66 glass-fibre reinforced, self-extinguishing
Pedal	glass-fibre reinforced thermoplastic (PA 66)
Connection	cable AWG, length 2 or 5 m
Cable cross-section	2-/3-core: AWG 20: 0.52 mm ² 4-core: AWG 24: 0.20 mm ²
Degree of protection	IP 65 to IEC/EN 60529
Switching system	reed contacts or snap action: microswitch
Switching voltage	12 ... 250 VAC/DC
Max. switch-on current	Reed contacts: 1 A, micro switch: 5 A
Max. power	Reed contacts: 30 VA, micro switch: 1250 VA
Max. fuse rating	micro switch: 5 A gG/gN fuse
Ambient temperature	- 10 °C ... + 60 °C
Mechanical life	> 1 million operations
Approvals	

68



Contact variants: Travel/contacts

	Snap action	Reed contacts
1 NO contact		KF 1S BN — BK
2 NO contacts		KF 2S BK — BN RD — 0G
1-pole change-over contact	KF 1PW 1 — 2 RD BN — 4 BK	KF 1W 1 — 2 RD BN — 3 BK

Ordering details

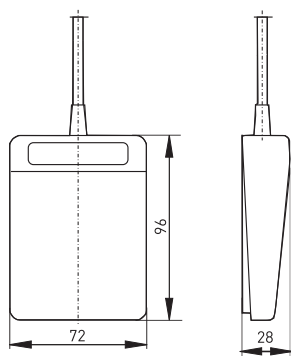
KF 1PW-2m

Cable length 2 m (5 m)
1PW 1-pole change-over contact micro switch, (reed contacts: 1S, 2S, 1W)
Series

Foot switches

// Series KF, variants

// Without protective shield KF



Snap action

KF 1PW-2m

KF 1PW-5m

Material Number

1049149

1049162

Reed contacts

KF 1S-2m

KF 1S-5m

Material Number

1049191

1049198

KF 2S-2m

KF 2S-5m

1049295

1189549

KF 1W-2m

KF 1W-5m

1049279

1049284


Foot switches

// Series KF, variants

Features/Options

- With pressure point: 2-step switching
- 2 contacts
- Thermoplastic enclosure
- Small flat design
- Reed contacts for low currents from 1 mA to 1 A
- With prewired cable, length 2 m
- Available with plug-in connector
- Other cable lengths and types possible

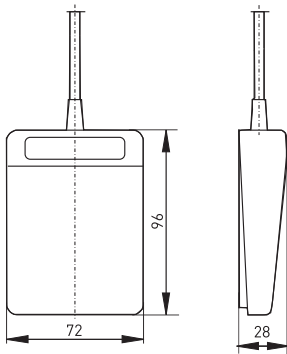
Technical data

Standards	EN 60947-5-1; VDE 0660 part 200
Enclosure	polyamide 66 glass-fibre reinforced, self-extinguishing
Pedal	glass-fibre reinforced thermoplastic (PA 66)
Connection	cable AWG, length 2 or 5 m
Cable cross-section	4-core: AWG 24: 0.20 mm ²
Degree of protection	IP 65 to IEC/EN 60529
Switching system	reed contacts
Actuating force	approx. 20 N
Switching voltage	12 ... 250 VAC/DC
Max. switch-on current	1 A
Max. power	30 VA
Ambient temperature	- 10 °C ... + 60 °C
Mechanical life	> 1 million operations
Approvals	

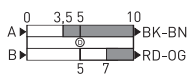
// KF D



70



Contact variants: Travel/contacts

	Reed contacts	Material number
2 NO contacts	KF 1S D 1S-2m 	1049324

Ordering details

KF 1S D 1S-2m
 Cable length 2 m
 1S 1 NO contact
 Pressure point
 1S 1 NO contact
 Series

Foot switches

// Series KF, variants

Features/Options

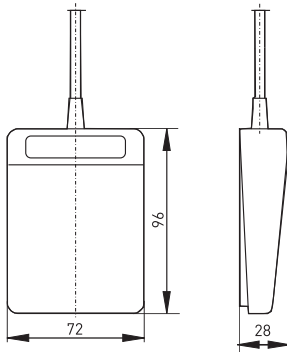
- With Hall sensor: Analogue output
- Thermoplastic enclosure
- Small flat design
- With prewired cable, length 2 m
- Various output values available: 0 ... 10 VDC, 0 ... 20 mA or 4 ... 20 mA
- Analogue output signal proportional to pedal travel
- Available with plug-in connector
- Other cable lengths and types possible

// KF HS



Technical data

Standards	EN 60947-5-1; VDE 0660 part 200
Enclosure	polyamide 66 glass-fibre reinforced, self-extinguishing
Pedal	glass-fibre reinforced thermoplastic (PA 66)
Connection	cable AWG, length 2 m
Cable cross-section	3-core: AWG 20: 0.52 mm ²
Degree of protection	IP 65 to IEC/EN 60529
Switching system	Hall sensor
Output values	
Output voltage U_a	0...10 VDC $\pm 1\%$
Output current I_a	0...20 mA $\pm 1\%$ or 4...20 mA $\pm 1\%$
I_e/U_e	for U_a : 25 mA/15 ... 30 VDC for I_a : 45 mA/15 ... 30 VDC
Ambient temperature	- 10 °C ... + 60 °C
Mechanical life	> 1 million operations
Approvals	



Contact variants: Travel/contacts

	Analogue output	Material Number
U_a	KF HS 0...10 VDC-2m 	1049345
I_a	KF HS 0...20 mA-2m	1049346
	KF HS 4...20 mA-2m	1049347

Ordering details

KF HS 0...10 VDC-2m

Cable length 2 m
 Output value U_a 0...10 VDC
 (I_a 0...20 mA or 4...20 mA)
 Hall sensor
 Series

Foot switches

// Series KFS

Features/Options

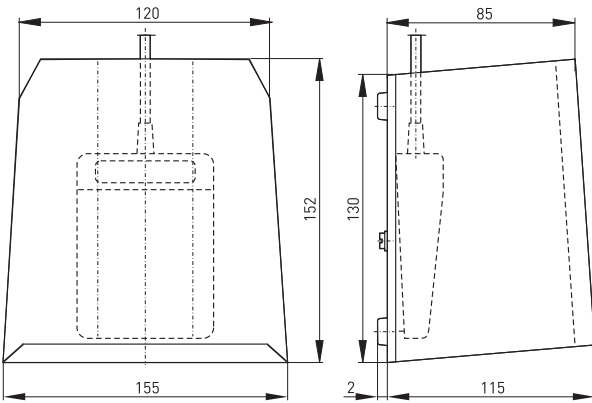
- Thermoplastic enclosure
- Small flat design
- With metal protective shield, special RAL colours available
- Max. 2 contacts
- Reed contacts for low currents from 1 mA to 1 A
- micro switches for current load up to 5 A
- With prewired cable, length 2 or 5 m
- Available with plug-in connector
- Other cable lengths and types possible

// KFS



Technical data

Standards	EN 60947-5-1; VDE 0660 part 200
Enclosure	polyamide 66 glass-fibre reinforced, self-extinguishing
Pedal	glass-fibre reinforced thermoplastic (PA 66)
Protective shield	steel, enamel finish
Connection	cable AWG, length 2 or 5 m
Cable cross-section	2-/3-core: AWG 20: 0.52 mm ² 4-core: AWG 24: 0.20 mm ²
Degree of protection	IP 65 to IEC/EN 60529
Switching system	reed contacts or snap action: microswitch
Switching voltage	12 ... 250 VAC/DC
Max. switch-on current	Reed contacts: 1 A, micro switch: 5 A
Max. power	Reed contacts: 30 VA, micro switch: 1250 VA
Max. fuse rating	micro switch: 5 A gG/gN fuse
Ambient temperature	- 10 °C ... + 60 °C
Mechanical life	> 1 million operations
Approvals	



Contact variants: Travel/contacts

	Snap action	Reed contacts
1 NO contact		KFS 1S BN — BK
2 NO contacts		KFS 2S BK — BN RD — 0G
1-pole change-over contact	KFS 1PW 1 — 2 RD BN — 4 BK	KFS 1W 1 — 2 RD BN — 3 BK

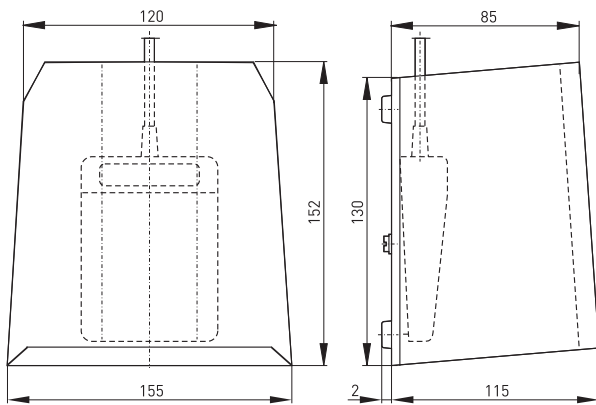
Ordering details

KFS 1PW-2m

Cable length 2 m (5 m)
1PW 1-pole change-over contact micro switch, (reed contacts: 1S, 2S, 1W)
S Protective shield
Series

Foot switches
// Series KFS, variants

// With protective shield KFS



Snap action

KFS 1PW-2m
KFS 1PW-5m

Material Number

1049352
1049355

Reed contacts

KFS 1S-2m
KFS 1S-5m

Material Number

1049370
1049377

KFS 2S-2m
KFS 2S-5m

1049392
1051980

KFS 1W-2m
KFS 1W-5m

1049385
1189550

Foot switches

// Series KFS, variants

Features/Options

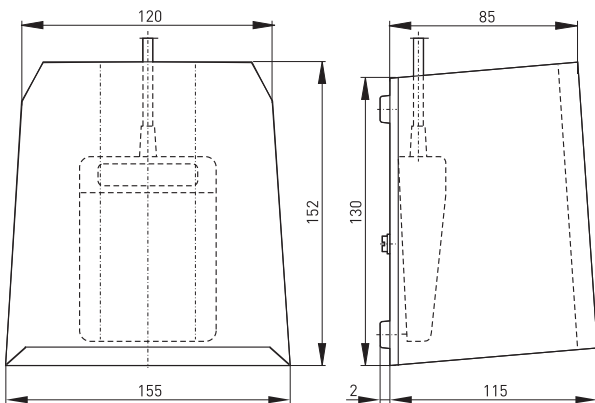
- With pressure point: 2-step switching
- 2 contacts
- Thermoplastic enclosure
- With metal protective shield, special RAL colours available
- Small flat design
- Reed contacts for low currents from 1 mA to 1 A
- With prewired cable, length 2 m
- Available with plug-in connector
- Other cable lengths and types possible

// KFS D



Technical data

Standards	EN 60947-5-1; VDE 0660 part 200
Enclosure	polyamide 66 glass-fibre reinforced, self-extinguishing
Pedal	glass-fibre reinforced thermoplastic (PA 66)
Protective shield	steel, enamel finish
Connection	cable AWG, length 2 m
Cable cross-section	4-core: AWG 24: 0.20 mm ²
Degree of protection	IP 65 to IEC/EN 60529
Switching system	reed contacts
Actuating force	approx. 20 N
Switching voltage	12 ... 250 VAC/DC
Max. switch-on current	1 A
Max. power	30 VA
Ambient temperature	- 10 °C ... + 60 °C
Mechanical life	> 1 million operations
Approvals	



Contact variants: Travel/contacts

	Reed contacts	Material Number
2 NO contacts	KFS 1S D 1S-2m 	1049408

Ordering details


KFS 1S D 1S-2m

- ▬ Cable length 2 m
- ▬ 1S 1 NO contact
- ▬ Pressure point
- ▬ 1S 1 NO contact
- ▬ S Protective shield
- ▬ Series

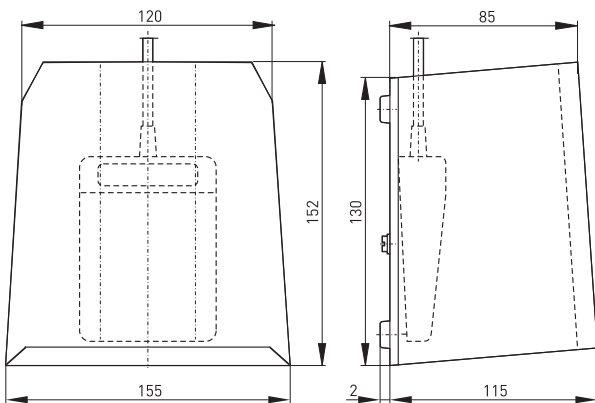
Features/Options

- With Hall sensor: Analogue output
- Thermoplastic enclosure
- Small flat design
- With metal protective shield, special RAL colours available
- With prewired cable, length 2 m
- Various output values available: 0 ... 10 VDC, 0 ... 20 mA or 4 ... 20 mA
- Analogue output signal proportional to pedal travel
- Available with plug-in connector
- Other cable lengths and types possible

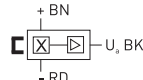
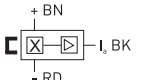
Technical data

Standards	EN 60947-5-1; VDE 0660 part 200
Enclosure	polyamide 66 glass-fibre reinforced, self-extinguishing
Pedal	glass-fibre reinforced thermoplastic (PA 66)
Protective shield	steel, enamel finish
Connection	cable AWG, length 2 m
Cable cross-section	3-core: AWG 20: 0.52 mm ²
Degree of protection	IP 65 to IEC/EN 60529
Switching system	Hall sensor
Output values	
Output voltage U_a	0...10 VDC $\pm 1\%$
Output current I_a	0...20 mA $\pm 1\%$ or 4...20 mA $\pm 1\%$
I_e/U_e	for U_a : 25 mA/15 ... 30 VDC for I_a : 45 mA/15 ... 30 VDC
Ambient temperature	- 10 °C ... + 60 °C
Mechanical life	> 1 million operations
Approvals	

// KFS HS



Contact variants: Travel/contacts

	Analogue output	Material Number
U_a	KFS HS 0...10 VDC-2m 	1049414
I_a	KFS HS 0...20 mA-2m	1049415
	KFS HS 4...20 mA-2m	1049416
		

Ordering details

KFS HS 0...10 VDC-2m

- Series
- S Protective shield
- Hall sensor
- Output value U_a 0...10 VDC (I_a 0...20 mA or 4...20 mA)
- Cable length 2 m

Foot switches // Series KF 2

Features/Options

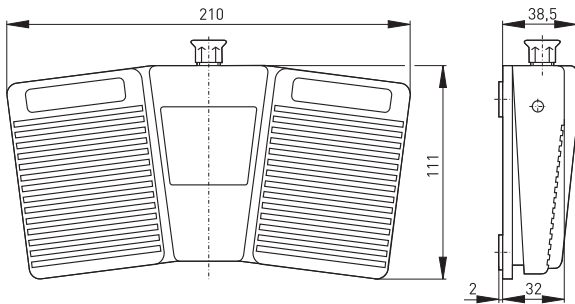
- Double-pedal type
- Thermoplastic enclosure
- Small flat design
- Max. 2 contacts per pedal
- With wiring compartment
- Without protective shield
- Reed contacts for low currents from 1 mA to 1 A
- Micro switches for current load up to 5 A

// KF 2



Technical data

Standards	EN 60947-5-1; VDE 0660 part 200
Enclosure	polyamide 66 glass-fibre reinforced, self-extinguishing
Pedal	glass-fibre reinforced thermoplastic (PA 66)
Connection	wiring compartment, cable gland M12 x 1.5 with spiral top or cable, length 2 m
Cable cross-section	max. AWG 22: 0.33 mm ² , cable: ø max. 6.5 mm
Degree of protection	IP 65 to IEC/EN 60529
Switching system	reed contacts or snap action: micro switch
Switching voltage	12 ... 250 VAC/DC
Max. switch-on current	Reed contacts: 1 A, micro switch: 5 A
Max. power	Reed contacts: 30 VA, micro switch: 1250 VA
Max. fuse rating	micro switch: 5 A gG/gN fuse
Ambient temperature	- 10 °C ... + 60 °C
Mechanical life	> 1 million operations
Approvals	



Contact variants: Travel/contacts

	Snap action	Reed contacts
1 NO contact		KF 2 1S/1S 6 0G ^L 5 RD 4 BN ^R 3 BK
2 NO contacts		KF 2 2S/2S
1-pole change-over contact	KF 2 1PW/1PW 7 0G ^L 8 YE 2 BK ^R 3 BN 5 0G 4 RD	KF 2 1W/1W 5 0G ^L 6 YE 4 RD ^R 3 BN 7 0G 2 BK

Ordering details

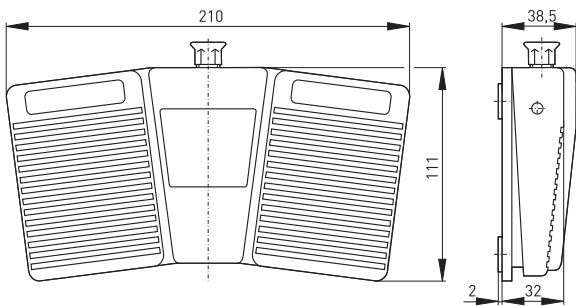
KF 2 1PW/1PW

Contacts right pedal
1PW 1-pole change-over contact micro switch, (reed contacts: 1S, 2S, 1W)
left pedal
2 pedals
Series

Foot switches

// Series KF 2, variants

// Without protective shield KF 2



Snap action
KF 2 1PW/1PW

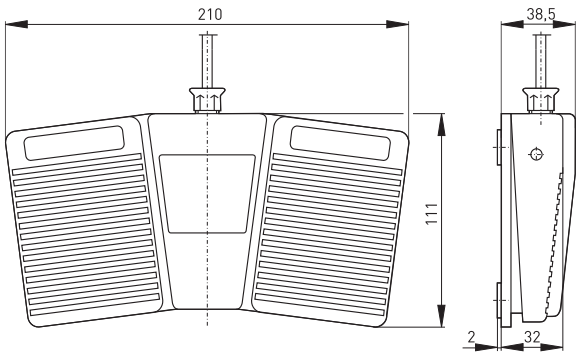
Material Number
1049096

Reed contacts
KF 2 1S/1S
KF 2 2S/2S
KF 2 1W/1W

Material Number
1049006
1049129
1049072

77

// Cable



Features/Options
- With prewired cable, length 2 m
- M12 x 1.5 bellmouth cable gland
- Other cable lengths and types possible

Snap action
KF 2 1PW/1PW-2m

Material Number
1049095

Reed contacts
KF 2 1S/1S-2m
KF 2 2S/2S-2m
KF 2 1W/1W-2m

Material Number
1049007
1049128
1049071

Foot switches

// Series KF 2, variants

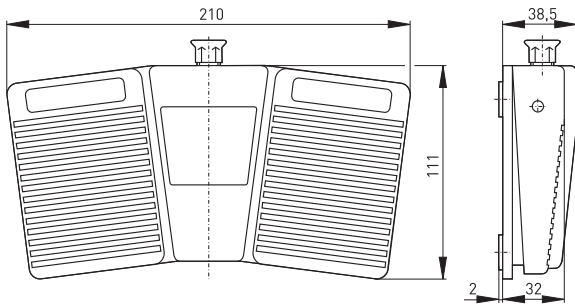
- Features/Options**
- With pressure point: 2-step switch
 - Double-pedal type
 - Thermoplastic enclosure
 - Small flat design
 - Max. 2 contacts per pedal
 - With wiring compartment
 - Without protective shield
 - Reed contacts for low currents from 1 mA to 1 A
 - Available with cable or plug-in connector

// KF 2 D



Technical data

Standards	EN 60947-5-1; VDE 0660 part 200
Enclosure	polyamide 66 glass-fibre reinforced, self-extinguishing
Pedal	glass-fibre reinforced thermoplastic (PA 66)
Connection	wiring compartment, cable gland M12 x 1.5 with spiral top or cable, length 2 m
Cable cross-section	max. AWG 22: 0.33 mm ² cable: ø max. 6.5 mm
Degree of protection	IP 65 to IEC/EN 60529
Switching system	reed contacts
Actuating force	approx. 20 N
Switching voltage	12 ... 250 VAC/DC
Max. switch-on current	1 A
Max. power	30 VA
Ambient temperature	- 10 °C ... + 60 °C
Mechanical life	> 1 million operations
Approvals	



Contact variants: Travel/contacts

	Reed contacts	
2 NO contacts	KF 2 1SD1S/1SD1S	1049126
	KF 2 1SD1S/1SD1S-2m	1049127

Ordering details

KF 2 1S D 1S/1S D 1S	

PRODUCTION PROCESS ASSEMBLY
THERMOPLASTIC PEDALS BEFORE FIXING THE MAGNETS



Foot switches

// Series KF 3

Features/Options

- Triple-pedal type
- Thermoplastic enclosure with metal base plate
- Small flat design
- Max. 2 contacts per pedal
- With wiring compartment
- Reed contacts for low currents from 1 mA to 1 A
- Micro switches for current load up to 5 A
- Available with Hall sensor: Analogue output signal proportional to pedal travel
- Available with cable or plug-in connector, other contact combinations on request

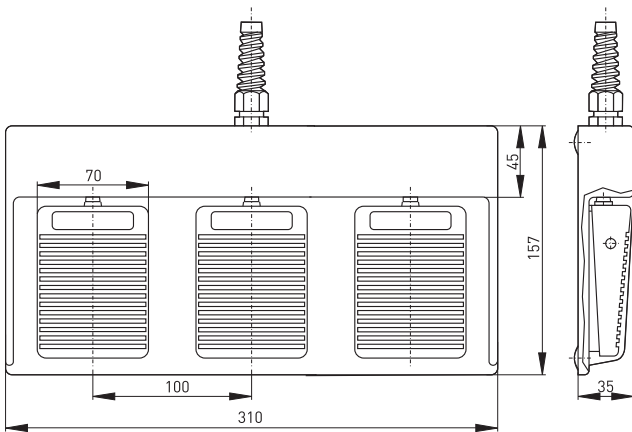
// KF 3



Technical data

Standards	EN 60947-5-1; VDE 0660 part 200
Enclosure	polyamide 66 glass-fibre reinforced, self-extinguishing
Base plate	aluminium, enamel finish
Pedal	glass-fibre reinforced thermoplastic (PA 66)
Connection	wiring compartment, cable gland M12 x 1.5 with spiral top
Cable cross-section	max. AWG 20: 0.52 mm ² , cable: ø max. 6.5 mm
Degree of protection	IP 65 to IEC/EN 60529
Switching system	reed contacts or snap action: micro switch
Switching voltage	12 ... 250 VAC/DC
Max. switch-on current	Reed contacts: 1 A, micro switch: 5 A
Max. power	Reed contacts: 30 VA, micro switch: 1250 VA
Max. fuse rating	micro switch: 5 A gG/gN fuse
Ambient temperature	- 10 °C ... + 60 °C
Mechanical life	> 1 million operations
Approvals	

80



Contact variants: Travel/contacts

	Snap action	Reed contacts
1 NO contact		KF 3 1S/1S/1S
1-pole change-over contact	KF 3 1PW/1PW/1PW 	KF 3 1W/1W/1W

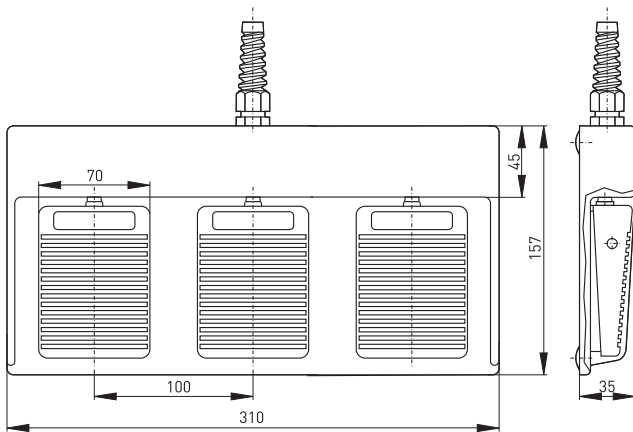
Ordering details

KF 3 1S/1S/1S

Contacts right pedal
 Contact center pedal
 1 NO reed contact, (reed contacts: 1S,
 2S, 1W, micro switch: 1PW) left pedal
 3 pedals
 Series

Foot switches
// Series KF 3, variants

// Without protective shield KF 3



Snap action
KF 3 1PW/1PW/1PW

Material Number
1049004

Reed contacts
KF 3 1S/1S/1S
KF 3 1W/1W/1W

Material Number
1048997
1049003

Foot switches

// Series KF 4

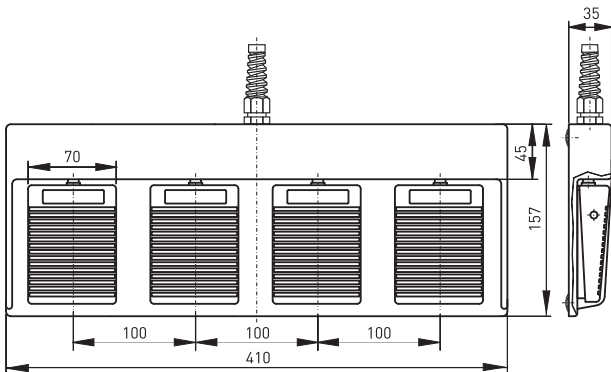
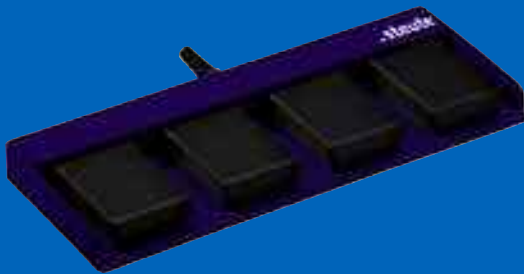
Features/Options

- Four-pedal type
- Thermoplastic enclosure with metal base plate
- Small flat design
- Max. 2 contacts per pedal
- With wiring compartment
- Reed contacts for low currents from 1 mA to 1 A
- Micro switches for current load up to 5 A
- Available with Hall sensor: Analogue output signal proportional to pedal travel
- Available with cable or plug-in connector, other contact combinations on request

Technical data

Standards	EN 60947-5-1; VDE 0660 part 200
Enclosure	polyamide 66 glass-fibre reinforced, self-extinguishing
Base plate	aluminium, enamel finish
Pedal	glass-fibre reinforced thermoplastic (PA 66)
Connection	wiring compartment, cable gland M12 x 1.5 with spiral top
Cable cross-section	max. AWG 20: 0.52 mm ² , cable: ø max. 6.5 mm
Degree of protection	IP 65 to IEC/EN 60529
Switching system	reed contacts or snap action: micro switch
Switching voltage	12 ... 250 VAC/DC
Max. switch-on current	Reed contacts: 1 A, micro switch: 5 A
Max. power	Reed contacts: 30 VA, micro switch: 1250 VA
Max. fuse rating	micro switch: 5 A gG/gN fuse
Ambient temperature	- 10 °C ... + 60 °C
Mechanical life	> 1 million operations
Approvals	

// KF 4

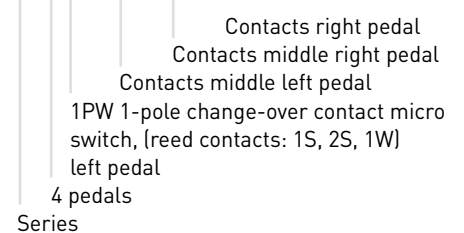


Contact variants: Travel/contacts

	Snap action	Reed contacts
1 NO contact		KF 4 1S/1S/1S/1S
1-pole change-over contact	KF 4 1PW/1PW/... 	KF 4 1W/1W/1W/...

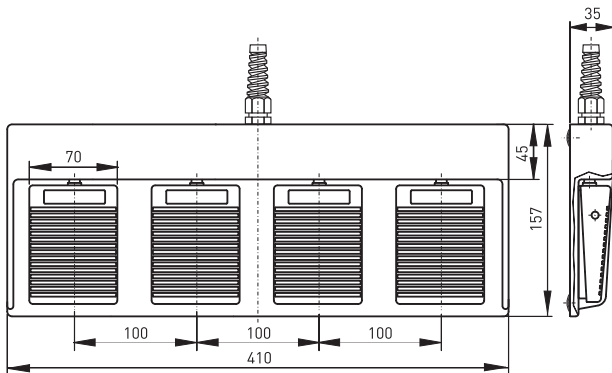
Ordering details

KF 4 1PW/1PW/1PW/1PW



Foot switches
// Series KF 4, variants

// Without protective shield KF 4



Snap action
KF 4 1PW/1PW/1PW/1PW

Material Number
1048993

Reed contacts
KF 4 1S/1S/1S/1S
KF 4 1W/1W/1W/1W

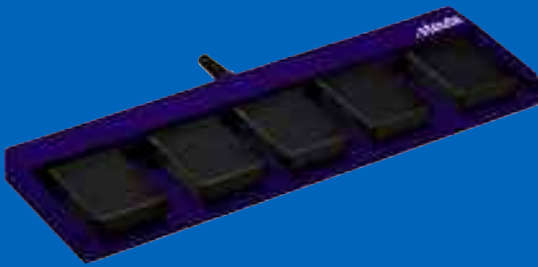
Material Number
1048991
1048992

Foot switches // Series KF 5

Features/Options

- Five-pedal type
- Thermoplastic enclosure with metal base plate
- Small flat design
- Max. 2 contacts per pedal
- With wiring compartment
- Reed contacts for low currents from 1 mA to 1 A
- Micro switches for current load up to 5 A
- Available with Hall sensor: Analogue output signal proportional to pedal travel
- Available with cable or plug-in connector, other contact combinations on request

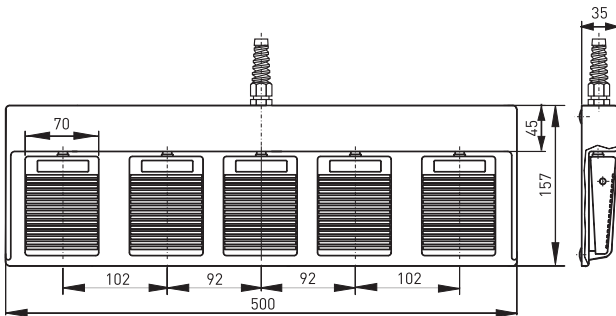
// KF 5



Technical data

Standards	EN 60947-5-1; VDE 0660 part 200
Enclosure	polyamide 66 glass-fibre reinforced, self-extinguishing
Base plate	aluminium, enamel finish
Pedal	glass-fibre reinforced thermoplastic (PA 66)
Connection	wiring compartment, cable gland M12 x 1.5 with spiral top
Cable cross-section	max. AWG 20: 0.52 mm ² , cable: ø max. 6.5 mm
Degree of protection	IP 65 to IEC/EN 60529
Switching system	reed contacts or snap action: micro switch
Switching voltage	12 ... 250 VAC/DC
Max. switch-on current	Reed contacts: 1 A, micro switch: 5 A
Max. power	Reed contacts: 30 VA, micro switch: 1250 VA
Max. fuse rating	micro switch: 5 A gG/gN fuse
Ambient temperature	- 10 °C ... + 60 °C
Mechanical life	> 1 million operations
Approvals	

84

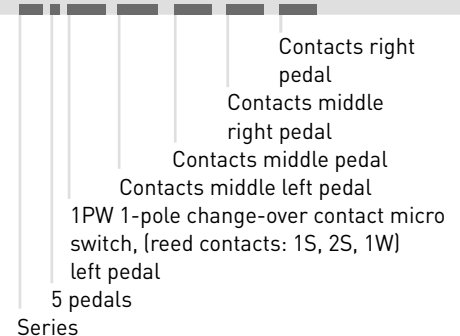


Contact variants: Travel/contacts

	Snap action	Reed contacts
1 NO contact		KF 5 1S/1S/1S/1S/...
1-pole change-over contact	KF 5 1PW/1PW/... 	KF 5 1W/1W/1W/...

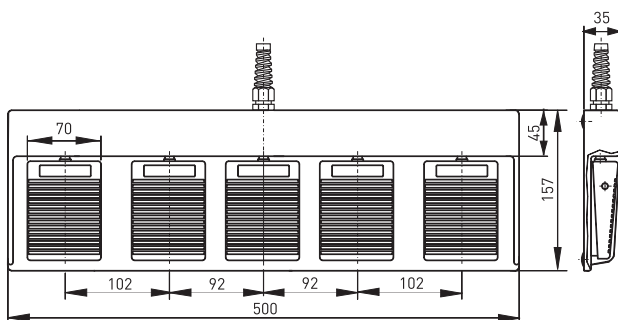
Ordering details

KF 5 1PW/1PW/1PW/1PW/1PW



Foot switches
// Series KF 5, variants

// Without protective shield KF 5



Snap action
KF 5 1PW/1PW/1PW/1PW/1PW









Material Number
1048986

Reed contacts
KF 5 1S/1S/1S/1S/1S
KF 5 1W/1W/1W/1W/1W

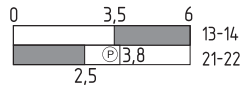
Material Number
1048984
1048985





EXPLANATION OF SYMBOLS

	positive break NC contact
	pressure point
	positive break travel/angle
	latching point
	CSA/UL approval, Canada
	TÜV prototype-tested
	BG prototype-tested
	conformity to standards, see declaration of conformity
I_e	rated operating current
I_{the}	thermal test current
U_e	rated operating voltage
U_i	rated insulation voltage
U_{imp}	rated impulse withstand voltage

Explanation of switching travel diagrams



 Contact open
 Contact closed

X1-X2 NC contact
 X3-X4 NO contact
 X5-X6 contact overlapping

Colour symbols per DIN IEC 757

BK black
 BN brown
 BU blue
 GN green
 GY grey
 OG orange
 PK pink
 RD red
 TQ turquoise
 VI violet
 WH white
 YE yellow

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