

Switchgear for driver's desks Toggle switches F, L, P Series Timetable holder BFH



Toggle switch assemblies for driver's desks

Schaltbau toggle switch assemblies F, L, and P Series are suitable for the rough operating environment. Sturdy construction and a long design life make them especially useful for railway applications in mainline and commuter rail service as well as for certain industrial applications. **BFH Series timetable holders** are mounted in many driver's desks of locomotives and multiple units for fixing timetables and other printed media.

Features

- Compact and rugged design
- Great variety of variants and combinations
- In compliance with railway standard IEC 60077

Applications

- Driver's desks of rolling stock on mainline and commuter rail service
- Switchgear cabinets

Specifications

Series F	Series L	Series P
2 x 30° 4 x 15°	2 x 35° 4 x 17.5°	2 x 35° 4 x 17.5°
 3-position contact assembly 5-position contact assembly 		•
1 2	1 4	1 4
5 20 Hz: 0.0193 g/Hz 20 150 Hz: 7.9 m/sec²	5 20 Hz: 0.0193 g/Hz 20 150 Hz: 7.9 m/sec ²	5 20 Hz: 0.0193 g/Hz 20 150 Hz: 7.9 m/sec ²
5 g / 22 msec, half sinus	5 g / 22 msec, half sinus	5 g / 22 msec, half sinus
> 300,000 operations	> 100,000 operations	> 300,000 operations
-20°C +70°C	-20°C +70°C	-20°C +70°C
170 g max. 190 g max. 	230 g max. 350 g max. 400 g max. 600 g max.	200 g max. 250 g max. 300 g max. 360 g max.
	2 x 30° 4 x 15° • 3-position contact assembly • 5-position contact assembly 1 2 5 20 Hz: 0.0193 g/Hz 20 150 Hz: 7.9 m/sec ² 5 g / 22 msec, half sinus > 300,000 operations -20°C +70°C 170 g max. 190 g max. 	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$

Schaltbau toggle switch assemblies are available in many variants and combinations. The following table shows the

electrical specifications of the switching elements with which the toggle switch assemblies can be equipped.

	1	1	I I	1	1	
Switching elements	S800	S826	S870	S005	S007	S008
Rated insulation voltage U _i	400 V	400 V	250 V	400 V	400 V	400 V
Pollution degree	3	3	3	3	3	3
Rated impulse withstand voltage Uimp	4 kV	4 kV	4 kV			
Overvoltage category	III	III				
Conv. thermal current I_{th} at $T_a = 85^{\circ}C$	10 A	10 A	10 A	15 A	25 A / 60 A	25 A / 60 A
Kind of switch		Snap-action switch		Cam-ope	rated switchin	g element
Features	 Positive opening operation Large contact bridge 	 Positive opening operation Wiping contacts Form Z SPDT-DB, galvanically isolated Permanent-magnetic blowout 	 Positive opening operation Wiping contacts High resistance to shock and vibration 	60 A max. • Large cont long life	nt-carrying ca acts, rugged t-magnetic blo	design,
Circuit diagram	3 <u> </u>	4	14		1 <u> </u>	
Catalogue	D20.en	D26.en	D70.en		D30.en	
					9	CHALTBAU

Ordering code F, L, P Series

Series Toggle switch assembly, F Series P Toggle switch assembly, P Series Blocked position 3-position contact assemblies (F, L, P Series) None Blocked position, see tables: contact positions on pages 4 and 6 5-position contact assemblies (L, P Series) None None No blocked position 1 Blocked downwards (-17.5° /-35°) 2 No intermediate ±17.5°, only ±35° 3 Blocked downwards (-17.5° /-35°) 2 No intermediate ±17.5°, only ±35° 3 Blocked downwards (-17.5° /-35°) 2 No intermediate ±17.5°, only ±35° 3 Blocked downwards (-17.5° /-35°) 2 No intermediate ±17.5°, only ±35° 3 Blocked downwards (-17.5° /-35°) 2 No intermediate ±17.5°, only ±35° Subtch function See page 4 L, P Series Solov / SOU / SO		Example: P-2S 6/6 S800A SH
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E20S826 e24, flat quick-connect terminalsWS870 W1A1r, screw-type terminalsW20S870 W1D1r, flat quick-connect terminalsL SeriesS5S005 aS6S007 cS7S007 aP5S008 P5P6S008 P6P SeriesS800 aScrew-type terminalsS800 a24Flat quick-connect terminalsS800 a30Screw with spring washerS826 aScrew-type terminalsS826 a24Flat quick-connect terminalsS826 a/LScrew-type terminals, blowoutS826 a10Screw-type terminals, gold contacts		S800 e24, flat quick-connect terminals
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W20S870 W1D1r, flat quick-connect terminalsL SeriesS5S005 aS6S007 cS7S007 aP5S008 P5P6S008 P6P SeriesS800 aScrew-type terminalsS800 a24Flat quick-connect terminalsS800 a30Screw with spring washerS826 aScrew-type terminalsS826 a24Flat quick-connect terminalsS826 a/LScrew-type terminals, blowoutS826 a10Screw-type terminals, gold contacts		
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S6S007 cS7S007 aP5S008 P5P6S008 P6P SeriesS800 aScrew-type terminalsS800 a24Flat quick-connect terminalsS800 a30Screw with spring washerS826 aScrew-type terminalsS826 a24Flat quick-connect terminalsS826 a24Flat quick-connect terminalsS826 a/LScrew-type terminals, blowoutS826 a10Screw-type terminals, gold contacts	L Series	
S7S007 aP5S008 P5P6S008 P6P SeriesS800 aScrew-type terminalsS800 a24Flat quick-connect terminalsS800 a30Screw with spring washerS826 aScrew-type terminalsS826 a24Flat quick-connect terminalsS826 a24Flat quick-connect terminalsS826 a/LScrew-type terminals, blowoutS826 a10Screw-type terminals, gold contacts		
P5 P6S008 P5 S008 P6P SeriesS800 aScrew-type terminals S800 a24S800 a24Flat quick-connect terminals S800 a30S800 a30Screw with spring washer S826 aS826 a24Flat quick-connect terminals S826 a24S826 a24Flat quick-connect terminals S826 a14S826 a10Screw-type terminals, blowout S826 a10		
P Series S800 a Screw-type terminals S800 a24 Flat quick-connect terminals S800 a30 Screw with spring washer S826 a Screw-type terminals S826 a24 Flat quick-connect terminals S826 a/L Screw-type terminals, blowout S826 a10 Screw-type terminals, gold contacts		
S800 aScrew-type terminalsS800 a24Flat quick-connect terminalsS800 a30Screw with spring washerS826 aScrew-type terminalsS826 a24Flat quick-connect terminalsS826 a/LScrew-type terminals, blowoutS826 a10Screw-type terminals, gold contacts	P6	S008 P6
S800 a24Flat quick-connect terminalsS800 a30Screw with spring washerS826 aScrew-type terminalsS826 a24Flat quick-connect terminalsS826 a/LScrew-type terminals, blowoutS826 a10Screw-type terminals, gold contacts		
S800 a30Screw with spring washerS826 aScrew-type terminalsS826 a24Flat quick-connect terminalsS826 a/LScrew-type terminals, blowoutS826 a10Screw-type terminals, gold contacts		
S826 aScrew-type terminalsS826 a24Flat quick-connect terminalsS826 a/LScrew-type terminals, blowoutS826 a10Screw-type terminals, gold contacts		
S826 a24Flat quick-connect terminalsS826 a/LScrew-type terminals, blowoutS826 a10Screw-type terminals, gold contacts		
S826 a10 Screw-type terminals, gold contacts		Flat quick-connect terminals
S826 a10/24 Flat quick-connect terminals, gold contacts		
		Flat quick-connect terminals, gold contacts

Special features	
F Series	
FL V VL	Mounting with studs, thruhole Ø 5.5 mm Lock Lock, extended
L, P Series	
SE SO	Angle for earthing Mounting with studs, thruhole Ø 6.3 mm
Handles (F, L, P	Series)
SH SHK SHG SHL SHM	Special handle, black Ball handle, black T-handle, black Cylinder handle, long, black Cylinder handle, short, black

Annotations:

Blocked position:

The upward and downward movement of the handle can be blocked mechanically.

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Switch function:

Special variants with maintained or momentary contact function are available, see »Special Variants« below.

Number of switching elements / contact positions:

The maximum number of switching elements is four. Each switching element is represented by the index number of its contact position within the working range of the toggle switch assembly. So contact position »0« means there is no switching element.

Whenever one or two switching elements are used, they are arranged in order of ascending index numbers of their contact positions, e.g. L-T 7/9 P5, P-S 0/3 S826A24.

In assemblies using 3 or 4 switching elements the sequence is determined by the respective technical requirements: i.e. you order L-S 7/9/23/24 S5, we deliver L-S 7/23/24/9 S5.

Switching elements:

The standard toggle switch assembly comes with switching elements of the same type. If different types of switching elements are required, they should be named individually (separated by »/«) together with the preceeding index number of their contact position. Example: L-TS 5S5/5P6/5P6

Special features:

Various handle design and mounting options are available - see also page 8.

Stock items

Only stock items are presented in this catalogue which can be supplied in short delivery time.

Special variant

If you need a special variant, do not hesitate to contact us. Maybe the type of toggle switch assembly you are looking for is among our many **special designs**. If not, we can also supply **customized designs**. In this case, however, minimum order quantities apply.

Note: Customized designs may have specifications that differ from those presented on page 2.



Switch function

The switch function is a significant part of the ordering code. The table on the right shows stock items of 3- and 5-position contact assemblies of the F Series.

• F Series



3-position c	3-position contact assembly												
Switch	Handle position												
function code	Down 30°	Centre 0°	Up 30°										
SOU	maintained	0	maintained										
SO	blocked	0	maintained										
SU	maintained	0	blocked										
TOU	momentary	0	momentary										
ТО	blocked	0	momentary										
TU	momentary	0	blocked										
TOSU	maintained	0	momentary										
TUSO	momentary	0	maintained										

5-position o	5-position contact assembly												
Switch		Н	andle positio	on									
function code	Down 30°	Down 15°	Centre 0°	Up 15°	Up 30°								
SSOU	maintained	maintained	0	maintained	maintained								
TSOU	maintained	momentary	0	momentary	maintained								

Function:

contacts maintaned Notched position momentary Spring return to next position and neutral position resp.

0 Notched centre position or spring return with momentary

Contact positions

Contact positions: All available contact positions of the respective switching element within the working range of the toggle switch assembly are delineated by an index number as shown below.

Configuration: Whenever two switching elements are used, they are arranged in order of ascending index numbers. This number sequence (seperated by "/") becomes an integral part of the ordering code. Example: F-SOU 17/22 E

Switch state: S800 / S826 and S870 Series snap-action switches have SPDT doublebreak and single-break contacts respectively.

The switch state symbols as shown in the tables below always refer to the state of the positively driven NC contact 1 - 2, see figure on the right.

Symbol	S800/S826	S870
Ô	³ 1 E 4 2 (SE) not o	² LI ⁴ E
°/	3 1 →E 4 2 (SE) opera	² ∟↓ ⁴ →E

Series F

The state of the switching element (SE) is represented by the two symbols.

3-position	contact	asse	mbly																					
Contact	position		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
	Up	30°	Ĵ	1	Ĵ	1	Ĵ	1	Ĵ	1				blo	cked				Ĵ	1	Ĵ	1	ĺ	1
	Οp	15°			Ĵ	1	1	Ĵ	/	Ĵ				DIO	ckeu									
Handle position	Centre	0°	/	Ĵ	/	Ĵ	1	1	Ĵ	Ĵ	/	Ĵ	1	ĺ	1	1	Ĵ	Ĵ	1	Ĵ	Ĵ	Ĵ	1	1
	Down	15°				bloc	kod						Ĵ	/	ľ	Ĵ	1	Ĵ						
	Down	30°				DIOC	ĸeu				Ĵ	1	ĺ	1	Ĵ	1	ĺ	1	Ĵ	1	2	Ĵ	1	ĺ
5-position	contact	asse	mbly																					
Contact	nonition		22 1	24 25	26	27 2	0 20	20	21	32 33	24	25 2	27	20	30 10	11	12 /	12 11	15	16 1	7 10	10	50 <u>5</u>	52

Contact	position		23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52
	Lin	30°	Ĵ	/	Ĵ	ľ	Ĵ	ļ	Ĵ	ľ	Ĵ	ļ	Ĵ	ļ	ľ	ľ	Ĵ	ļ	ļ	ļ	Ĵ	ļ	Ĵ	ļ	Ĵ	ľ	Ĵ	ļ	Ĵ	Ĵ	Ĵ	Ĵ
	Up	15°	Ĵ	/	Ĵ	ľ	Ĵ	ľ	ľ	Ĵ	ľ	Ĵ	1	ľ	Ĵ	ľ	ľ	/	Ĵ	Ĵ	/	Ĵ	Ĵ	Ĵ	 /	Ĵ	Ĵ	Ĵ	Ĵ	ſ	Ĵ	ļ
Handle position	Centre	0°	ľ	l	Ĵ	Ĵ	ľ	1	1	1	Ĵ	Ĵ	1	1	ľ	1	Ĵ	Ĵ	Ĵ	Ĵ	/	ľ	ľ	1	Ĵ	Ĵ	Ĵ	Ĵ	1	ľ	Ĵ	Ĵ
	Down	15°	Ĵ	/	/	Ĵ	ľ] /							
	DOWI	30°	Ĵ	Ĵ	Ŷ	Ĵ	Ĵ	Ĵ	Ĵ	1	Ĵ	ŗ	1	Ĵ	Ŷ	ľ	/	Ĵ	Ĵ	ŗ	Ŷ	Ĵ	Ĵ	Ĵ	Ŷ	Ĵ	ŗ	Ĵ	Ĵ	Ĵ	Ĵ	Ĵ

Series F

Series F

Series F

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Switching elements

Series F toggle switch assemblies are available with S800, S826 or S870 Series snap-action switches. The switches feature positive opening operation that guarantees the failsafe opening of the NC contact even if it has become welded in a short-circuit situation.

Note: Use and order S840 Series snap-action switches only as spare parts!

Switching e	Switching elements												
Snap-action switch	Code	Terminals	Contact positions	Catalogue									
S800 e	OE	Screw-type	3-position assembly	D20									
S800 e24	OE20	Quick-connect	5-position assembly	D20									
S826 e	E	Screw-type	2 position accombly	D26									
S826 e24	E20	Quick-connect	3-position assembly	D20									
S870 W1A1r	W	Screw-type	3-position assembly	D70									
S870 W1D1r	W20	Quick-connect	5-position assembly	DIO									

Snap-action switch	S870 / S840	S800 / S826
Circuit diagram	14	3 - 4 1 - 2

Switching e	lements (Us	e and order only	as spare part!)	
Snap-action switch	Code	Terminals	Contact positions	Catalogue
S840 r	R	Screw-type	E position cocombly	
S840 r20	R20	Quick-connect	5-position assembly	

Dimension diagrams

- F Series equipped with S870 snap-action switches featuring screw-type terminals with thread M4 (standard)
- F Series equipped with S800 / S826 snap-action switches featuring thruholes for mounting with studs (special design FL)









Special design FL for mounting with stud and thruhole Ø5.5 (see Ordering code, page 3).



Ground terminal Switching element with flat quick-connect terminals



Switch function

The switch function is a significant part of the ordering code. The table on the right shows stock items of 3- and 5-position contact assemblies of the L and P Series.



Switch		Н	landle position							
function code	Dow	n 35°	Centre 0°	Up	35°					
S	maint	ained	0	maint	ained					
2S	maint	ained	none	maintained						
TS	mome	entary	0	maint	ained					
ST	maint	ained	0	mome	entary					
Т	mome	entary	0	mome	entary					
5-position	contact ass	embly								
Switch		Н	andle positio	on						
function code	Down 35°	Down 17.5°	Centre 0°	Up 17.5°	Up 35°					
S	maintained	maintained	0	maintained	maintained					
V	maintained	momentary	0	momentary	maintained					
VD	maintained	momentary	0	momentary	momentary					
DV	momentary	momentary	0	momentary	maintained					
51										

nction: 0 Notched centre position or spring return with momentary contacts none Notched position up/down 35° with 3-position assemblies maintained Notched position

momentary Spring return to next position and neutral position resp.

Contact positions

Contact positions: All available contact positions of the respective switching element within the working range of the toggle switch assembly are delineated by an index number as shown below.

Configuration: Whenever two switching elements are used, they are arranged in order of ascending index numbers. This number sequence (seperated by "/") becomes an integral part of the ordering code. In assemblies with 3 and 4 switching elements the sequence is determined by the respective technical requirements, i.e. you order L-S 7/9/23/24, we deliver L-S 7/23/24/9.

Switch state: S800 / S826 Series snap-action switches and S005 / S007 / S008 Series switching elements have SPDT double-break contacts and a NC contact respectively.

The switch state symbols as shown in the tables below always refer to the state of the positively driven NC contact 1 - 2, see figure on the right.



Series L, P

The state of the switching element (SE) is represented by the two symbols.

-position o	contact	assei	mbl	У										5-position contac	t asse	mb	ly					1					I.	
Contact	position		0	1	2	3	4	5	6	7	8	9	10	Contact positio	n	0	5	8	11	12	13	14	5	8	11	12	13	14
	Up	35°	mounted	Î	°/	bloc	ked	Î	Î	Î	°/	°/	°/	Lin	35°	mounted	Ĵ	ľ	Ĵ	/	ľ	Ĵ			bloc	kod	4	
	- 1		_	8	8			8	8	8	8	8	8	Up	17.5°	ent mo	Ĵ	Ĵ	Ŷ	Ĵ	Ĵ	Ĵ				Reu	1	
Handle position	Centre	0°	element	/	Ĵ	/	Ĵ	?	Ĵ	/	Ĵ	?	Ĵ	Handle position Centre	e O°	element	ŗ	Ĵ	Ĵ	Ĵ	ŗ	ŗ	ļ	Ĵ	Ĵ	Ĵ	ľ	6
			switching			Ŷ	۰,	Ŷ	۰,	۰,	۰,	Ŷ	Ŷ	Down	17.5°	vitching				ked			Ĵ	Ŷ	ļ	Ĵ	Ĵ	6
	Down	35°	no sw	bloc	ked	ļ	8	ļ	8	8	Į	ļ	ļ	Down	35°	S.		I	2100	кец	1		Ĵ	ľ	Ĵ	°/	Ŷ	

5-position	contact	asse	mbl	y (co	ontin	ued)												,														
Contact	position		5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34
	Lin	35°	Ĵ	Ĵ	Ĵ	1	1	1	Ĵ	1	ľ	Ĵ	1	Ĵ	Ĵ	Ĵ	Ĵ	Ĵ	Ĵ	ľ	Ĵ	1	1	ľ	Ĵ	ľ	Ĵ	1	1	1	Ĵ	1
	Up	17.5°	Ĵ	Ĵ	Ĵ	ļ	ſ	ļ	ſ	Ĵ	Ĵ	ſ	Ĵ	Ĵ	Ĵ	ľ	Ĵ	ļ	ſ	Ĵ	, /	ſ	Ĵ	Ĵ	Ĵ	Ĵ	ľ	Ĵ	Ĵ	ļ	ľ	1
Handle position	Centre	0°	1	Ĵ	/	Ĵ	1	Ĵ	Ĵ	Ĵ	/	1	Ĵ	Ĵ	Ĵ	Ĵ	/	ļ	Ĵ	Ĵ	/	ľ	ľ	ſ	/	/	ľ	ľ	Ĵ	Ĵ	Ĵ	Ĵ
	Down	17.5°	Ĵ	1	/	1	Ĵ	Ĵ	1	Ĵ	Ĵ	1	Ĵ	Ĵ	1	Ĵ	/	Ĵ	Ĵ	1	/	1	ľ	Ĵ	Ĵ	Ĵ	Ĵ	ľ	1	Ĵ	/	1
	DOWI	35°	ĺ	1	/	1	ĺ	Ĵ	ļ	1	/	Ĵ	ļ	1	Ĵ	Î	Ĵ	Ĵ	1	Ĵ	/	ĺ	1	ŗ	/	Ĵ	1	Ĵ	1	1	/	Ĵ

Series L, P

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Switching elements

L Series toggle switch assemblies are equipped with S005 / S007 / S008 Series cam-operated switching elements which are especially suited for switching high loads up to 60 A.

In addition to that, S008 P5 and S008 P6 Series switching elements feature permanent-magnetic blowout for arc quenching.

P Series toggle switch assemblies are fitted with S800 or S826 Series snap-action switches which guarantee the fail-safe opening of the NC contact even if it has become welded in a short circuit situation.

S826 a/L Series switches feature additional permanentmagnetic blowout for arc quenching.

Switching element	S005 / S007 / S008 (L Series)	S800 / S826 (P Series)
Ciruit diagram	1 2	3 4

L Series	switching ele	ments		
Switching element	Code	Terminals	Contact position	Catalogue
S005 a	S5		0	
S007 c	S6	Screw-type	3-position assembly 5-position assembly	D30.en
S007 a	S7		5-position assembly	
S008 P5	P5	Sorow tupo	3-position assembly	D30.en
S008 P6	P6	Screw-type	5-position assembly	D30.en

P Series s	witching ele	ments		
Switching element	Code	Terminals	Contact position	Catalogue
S800 a	S800 a	Screw-type		
S800 a24	S800 a24	Quick-connect	3-position assembly	D20 en
S800 a30	S800 a30	Screw with spring washer	5-position assembly	D20.011
S826 a	S826 a	Screw-type		
S826 a24	S826 a24	Quick-connect	o ''' II	
S826 a/L	S826 a/L	Quick-connect	3-position assembly 5-position assembly	D26.en
S826 a10	S826 a10	Screw-type	5-position assembly	
S826 a10/24	S826 a10/24	Quick-connect		

Dimension diagrams

• L Series with S005 / S007 / S008 Series cam-operated









Series L, P

Series L, P



Special features and accessories

F Series

Special features *1

FL	Toggle switch assembly for mounting with stud, thruhole Ø 5.5 mm*
V	Lock*
VL	Lock, extended*
SHK	Ball handle
SHG	T-handle

- Accessories *2
 - Rubber ball Ø 30 for standard handle

L, P Series

- Special features *1
- SO Toggle switch assembly for mounting with stud, thruhole Ø 6.3 mm*
- SE Additional angle for earthing
- with hex screw M4
- SHK Ball handle
- SHG T-handle
- SHL Cylinder handle, long
- SHM Cylinder handle, short
- Accessories *2
 - Countersink screw M5 with threaded bore M3 in the head of the screw
 - Capstan head screw M3 for lead sealing
 - Rubber ball Ø 30 for standard handle
 - Switch identification plates without lettering
 - Switch guard S608 (protection against accidental actuation)

Handle styles

*1 See ordering code on page 3

*2 To be ordered separately

Accessories Series F, L, P

- The special handle SH can be transformed into a ball handle, T-handle or cylinder handle
- A rubber ball Ø 30 mm can be mounted on the standard handle
- All handles feature a Ø 2 mm thruhole and can be lead-sealed
- Actuating force and mechanical endurance are influenced by style of handle



Nameplates

Nameplates are affixed with M3 screws fitting the threaded bore in the head of the M5 switch mounting screws. M5 countersink screws can be ordered as accessories from Schaltbau. The M3 nameplate screws, however, can not. They are not delivered with the nameplate.

- Option A: Material: Resopal. White background with black lettering, thickness 2 mm
- Option B: Material: Resopal. Black background with white lettering, thickness 2 mm





Accessories Series L, P

Series F, L, P

Switch guard S608

As protection against accidental actuation of the toggle switch assembly the optional switch guard S608 is available.

Like the nameplate the switch guard S608 is affixed with M3 screws fitting the threaded bore in the head of the M5 switch mounting screws (Accessories). The switch guard can be mounted together with the nameplate. The M3 nameplate screws, however, are not delivered by Schaltbau.

Cutouts, Clearance, Mounting

• Cutouts

10.1

2

39.5

Ø3.2

The dimensions of the panel cutouts are only recommendations that allow for some tolerance. To make the cutouts look better we further recommend bevelling the edges.





Panel thickness	L x 15 panel cut-out
2.0 2.5 mm	32 x 15 mm
2.5 4.0 mm	34 x 15 mm

2

L, P Series

Ī		-0			
43					
I	,			4	2
27		15	; -	-	
		-0	-		

Panel thickness	L x 15 panel cut-out
2.0 2.5 mm	30 x 15 mm
2.5 3.5 mm	32 x 15 mm
3.5 6.0 mm	35 x 15 mm

Clearance towards live parts

With regard to L Series toggle switch assemblies observe the clearance towards live parts as shown below.



Dimension	Clearance	Switching element
A	2 mm	S005 S007 S008
В	10 mm	S005 S007
	30 mm	S008

Mounting and in-line mounting

F Series: The toggle switch assembly is mounted by means of M4 countersink screws which are not included in the delivery. The FL version is designed for mounting with studs.

L, **P Series:** The toggle switch assemblies are mounted with M5 countersink screws which are included in the delivery. The special design SO is to be mounted with studs.

F Series:

L, P Series:



 * x = 1/2 pole: 38 mm
 3/4 pole: 61 mm
 without earthing screw fastened to the side of the assembly Series F, L, P

Accessories Series L, P



Timetable holder BFH

This device is designed for installation in driver's desks of locomotives and multiple units for holding timetables and other documents.

Clamping yokes can be unscrewed for use of short or long end (yoke turned at 180° compared with figure on the right).



Ordering code BFH

BFH-25-M5-L Example: Series BFH Timetable holder **Clamping yoke** 25 25 mm length of short end 40 40 mm length of short end Mounting M5 with M5 rivet nut SO for mounting with studs, thruhole Ø 6.3 mm **Special feature** L Lever extended

• Stock items

Ordering code	A* in [mm]	X* in [mm]
BFH-25-SO	25	18.75
BFH-25-M5-L	25	31.75
BFH-40-M5	40	18.75
BFH-40-SO	40	18.75

* see dimension diagram BFH Series

Dimension diagrams, Mounting

• Dimension diagrams



Mounting: M5 rivet nut or special feature SO for mounting with studs and thruhole Ø6.3 mm

A in [mm]	Clamping yoke	
25	25 mm length of short end of yoke	
40	40 mm length of short end of yoke	
X in [mm]	Special feature	
18.75	Standard lever	
31.75	Extended lever	

Mounting

The required installation cutout is identical with the one for the L and P Series toggle switch assemblies, see also page 9 »Cutouts, Clearance, Mounting«.

10

Series BFH

Notes

-0

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Schaltbau GmbH has an environment management system that has been certified since 1994. Schaltbau GmbH has a quality management system that has been certified since 1994.

12

Electrical Components and Systems for Railway Engineering and Industrial Applications

•

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Connectors	Connectors manufactured to industry standards
	 Connectors to suit the special requirements of communications angine ring (MIL connectors)
	engineering (MIL connectors)
	 Charging connectors for battery-powered machines and systems Connectors for table or principle of the second systems
	 Connectors for railway engineering, including UIC connectors Special connectors to put experimentation
	Special connectors to suit customer requirements
Snap-action switches	Snap-action switches with positive opening operation
	Snap-action switches with self-cleaning contacts
	Enabling switches
	 Special switches to suit customer requirements
Contactors	Single and multi-pole DC contactors
	High-voltage AC/DC contactors
	Contactors for battery powered vehicles and power supplies
	Contactors for railway applications
	Terminal bolts and fuse holders
	DC emergency stop switches
	 Special contactors to suit customer requirements
Control devices	 Master controllers and reversers for railway applications
	Toggle switch devices
	Handles and foot switches for railway applications
	(dead-man equipment)
	Switching elements with high breaking capacity
	Emergency brake handles
	 Signal devices
Transportation system equipment	 Power supplies for passenger coaches (electric equipment)
	Battery chargers for locomotives and passenger coaches
	High-voltage equipment for single and multi-phase operation
	Heating devices and heating controls
	Design and engineering services for high-voltage equipment
	Special equipment to suit customer requirements

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