

Housing

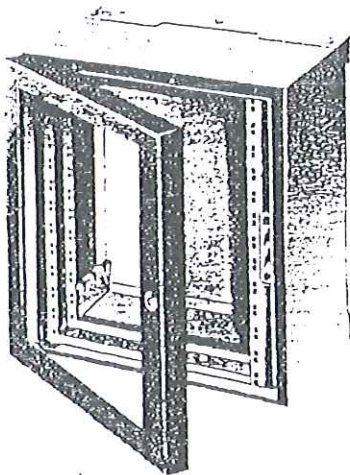


Fig. 12.1
Surface, wall mounting housing for 8TK
switchgear interlocking unit

Surface, wall mounting housing

If the switchgear interlocking unit is to be used in switchyard kiosks or similar outdoor buildings, the rack (IP 20) must be installed in an additional protective housing.

This surface, wall mounting housing (IP 54) is equipped with a hinged mounting frame which allows the rack to be swung forward to gain access to the prepared connecting cables which are normally brought into the housing from above, through screened conduit glands.

The front door of the housing has a transparent polycarbonate window, so that all the settings and displays can be seen without opening the door.

Type of housing	Degree of protection	Dims. in mm height x width x depth	Order No.	Weight approx. kg
Feeder unit housing	IP 54	483 x 600 x 387	8TK3841-0AA00	24
Central unit housing	IP 54	883 x 600 x 387	8TK3842-0AA00	54

Cables

Connecting cables, prepared with connectors for the interface and control module

Connections from the interlocking unit to the motor control circuits, feedback signal circuits and remote controls are implemented using prepared cables with connectors.

The standard length for connection up to the marshalling point, e.g. the terminal strip, is 2.5 m.

The cable includes:

- 1 flexible ÖPVC-JZ-CY 25 x 0.75 mm² cable for motor control circuit and switchgear position checkback signal
- 1 flexible JE-LiYCY 4 x 0.5 mm² for telecontrol signals
- 1 flexible JE-LiYCY 4 x 0.5 mm² for telecontrol signals

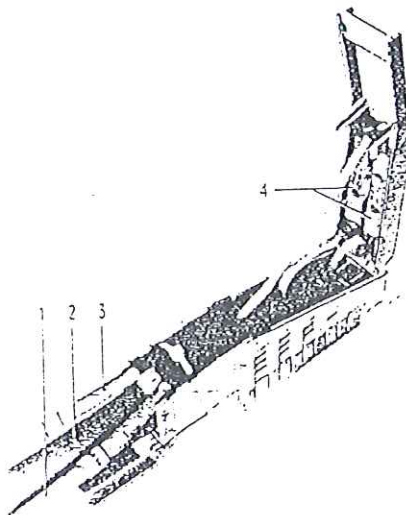
Since cable lengths greater than 2.5 m may be required, alternatives are listed in the table below.

All connectors are coded from No. 1 for connector X801 to No.7 for X807.

When a complete set of connectors is ordered together with an interlocking unit, the assemblies are already coded in the correct sequence in the factory.

In individual or subsequent part orders, the required connector coding must be stated (see ordering table).

Connecting cables for the ABB module must also be suitable for the rated auxiliary voltage (see ordering table), since the connectors are equipped with series resistors to match the motor control circuit voltages to the station battery voltage.



1. Cable for switchgear control REMOTE
2. Cable for motor control circuit and switchgear checkback signals
3. Cable for switchgear checkback signal REMOTE
4. Series resistors, voltage-dependent

Fig. 12.2
Connecting cable, complete with connector
for the interface and control module (ABB)

Description	Order No.	Weight approx. kg
Connecting cables, complete with connectors for the interface and control module	8TK3810-□□A□□	1.9 for cable length 2.5 m
Cable lengths from 1 m to 89 m		
Tens position:		
00m-0 10m-1 20m-2 30m-3 40m-4		
50m-5 60m-6 70m-7 80m-8		
Units position:		
0m-A 1m-B 2m-C 3m-D 4m-E		
5m-F 6m-G 7m-H 8m-J 9m-K		
2.5 m (standard length) 0L		
Connector coding according to marshalling terminal row		
-X801-1 -X802-2 -X803-3 -X804-4		
-X805-5 -X806-6 -X807-7		
Rated auxiliary voltage of motor control circuits / station battery		
DC 60 V-3 DC 110 V-4 DC 125 V-5 DC 220 V-6		

Cables

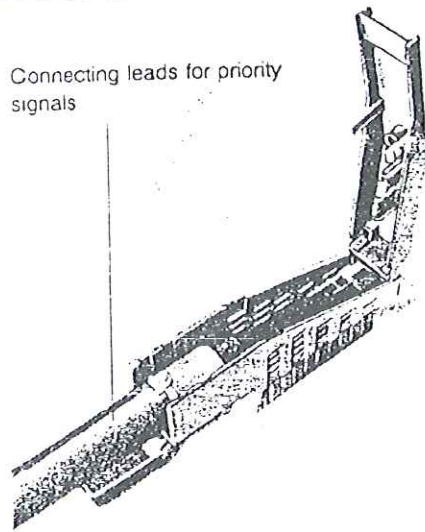


Fig. 12.3
Connecting cable with connectors for the enable module

Connecting cables, prepared with connectors for the manual control module (FGB)

One cable connector assembly of type ÖPVC-JZ-CY 30 x 0.5 mm² is required for each switchgear interlocking unit, for the manual control module.

The connecting cable has the standard length 2.5 m with Code No. X and connector -X808. Longer cable lengths are available on request.

Description	Order No.	Weight approx. kg
Connecting cables, complete with connectors, for the manual control module	8TK3820-□□ A00	1.7 for cable length 2.5 m
Cable lengths from 1 m to 89 m		
Tens position:		
00m-0 10m-1 20m-2 30m-3 40m-4		
50m-5 60m-6 70m-7 80m-8		
Unit position:		
0m-A 1m-B 2m-C 3m-D 4m-E		
5m-F 6m-G 7m-H 8m-J 9m-K		
2.5 m (standard length) 0L		

Serial data transmission cable, prepared with connectors

The serial data transmission cable is provided for information exchange between the feeder and central units.

This triple cable, a special flexible of type LiYCY-CY 2 x 2 x 0.25 mm², with a braided copper screen can be manufactured in lengths up to 100 m long complete with connectors.

For cable lengths greater than 100 m the connectors are supplied loose with lead, for fitting to required length on site.

Description	Order No.	Weight approx. kg
Serial data transmission cable, prepared with connectors, up to 100 m length	8TK383□-□□ A00	0.13 per meter
Cable lengths in 1 m steps up to max. 889 m		
Hundreds position:		
000m-0 100m-1 200m-2 300m-3 400m-4		
500m-5 600m-6 700m-7 800m-8		
Tens position:		
00m-0 10m-1 20m-2 30m-3 40m-4		
50m-5 60m-6 70m-7 80m-8		
Unit position:		
0m-A 1m-B 2m-C 3m-D 4m-E		
5m-F 6m-G 7m-H 8m-J 9m-K		
Serial data transmission cable special lengths ≥900 to max. 1000 m	8TK3839-0AA00 Please state required length in words.	0.13 per meter

Ordering example:

Deriving the Order No. for 257 m of serial data transmission cable:

Serial data cable	Derived Order No.	8TK3832-5HA00
Cable length	Hundreds position:	200 m
	+ Tens position:	50 m
	+ Unit position:	7 m
		257 m

Modules

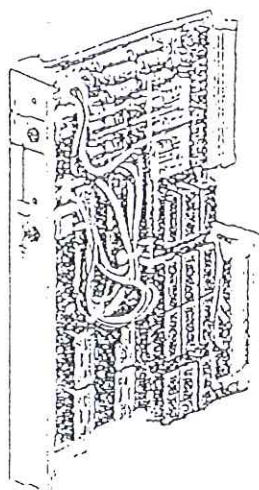


Fig. 12.5
Interface and control
module (ABB)

Interface and control module (ABB) 8TK3001 – *****

For technical details, see the Manual, page 5/12

When supplied as a replacement, the ABB module is delivered without the labeled front plate, the front plate of the defective module must be screwed onto the replacement module.

The nature of the replacement ABB module depends on its location in the feeder control diagram.

From this feeder control diagram and the ABB module to be replaced, it is possible to see which characteristics are necessary for ordering the replacement:

- single or double (first and / or second switching device) and arrangement of the module, i.e. "left-most" module (with terminating jumper) or "right-most" module with shielding plate.
- arrangement of the operating and display elements.
- normal position of the semaphore indicator
- rated auxiliary voltage (must be equal to the station battery voltage).

These characteristics can be read from the labeling strip affixed to the side of the front plate to be seen when the module is withdrawn.

An ABB module for two switching devices (double) can also be used as a replacement module for one switching device (single).

See the table below for the order number (MLFB).

A replacement module "without jumpers" can be converted to a module "with jumpers" at any time (and vice versa). If necessary, the components of a defective module can be reused or removed (see Fig. 12.8).

When adjusting the replacement modules according to the version of the defective module, correct assignment is ensured by reuse of the front plate.

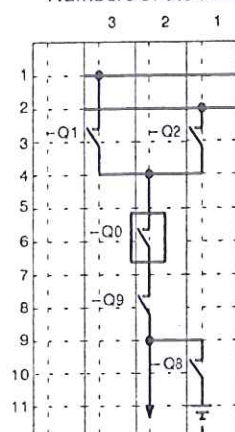
Interface and control modules can be used in the 8TK1... feeder unit and in the 8TK2... central unit.

Modules

Description		Order No.	Weight approx. kg		
Interface and control module (ABB)		8TK3001 —	0.48 ¹⁾ or 0.74 ²⁾		
Fitted with	without shielding plate	1. switching device, without terminating jumpers	1		
		1. and 2. switching device, without terminating jumpers	2		
		1. switching device, with terminating jumpers	3		
		1. and 2. switching device, with terminating jumpers	4		
	with shielding plate	1. switching device, without terminating jumpers	5		
		1. and 2. switching device, without terminating jumpers	6		
		1. switching device, with terminating jumpers	7		
		1. and 2. switching device, with terminating jumpers	8		
Operating and display elements	Fitted with	Pushbutton	LED	Semaphore	
		with	with	with	B
	1. switching device or 1. u. 2. switching device	without	with	with	C
		without	without	with	D
		without	without	without	E
		without	without	without	
	1. switching device 2. switching device	with	with	with	F
		without	with	with	
	1. switching device 2. switching device	with	with	with	G
		without	without	with	
	1. switching device 2. switching device	with	with	with	H
		without	without	without	
	1. switching device 2. switching device	without	with	with	J
		with	with	with	
	1. switching device 2. switching device	without	without	with	K
		with	with	with	
	1. switching device 2. switching device	without	without	without	L
		with	with	with	
	1. switching device 2. switching device	without	with	with	M
		without	without	with	
	1. switching device 2. switching device	without	with	with	N
		without	without	without	
	1. switching device 2. switching device	without	without	with	P
		without	with	with	
	1. switching device 2. switching device	without	without	without	Q
		without	with	with	
	1. switching device 2. switching device	without	without	with	R
		without	without	without	
1. switching device 2. switching device	without	without	without	S	
	without	without	with		
normal position of the semaphore	without semaphore			A	
	semaphore horizontal			B	
	semaphore vertical			C	
	1. switching device: semaphore horizontal 2. switching device: semaphore vertical			D	
	1. switching device: semaphore vertical 2. switching device: semaphore horizontal			E	
remote control voltage (UFW)	24 V DC			1	
	48 V DC			2	
	60 V DC			3	
	110 V DC			4	
	125 V DC			5	
	220 V DC			6	
	250 V DC			7	
rated auxiliary voltage (URM)	48 V DC			2	
	60 V DC			3	
	110 V DC			4	
	125 V DC			5	
	220 V DC			6	
	250 V DC			7	

Modules

Numbers of the ABB modules



8TK*262-0A, 8TK*262-3A

Fig. 12.6

Example of a feeder control diagram

Ordering example

In one it is necessary to replace ABB modules No. 1 and 3 as shown on the feeder control diagram. The order numbers are ascertained as follows.

ABB module No. 1 resulting order number 8TK3001-6BB66

The module is double and has a shielding plate (for 1. and 2. switching devices) _____
 Operating and display elements (with pushbutton, with LED, with breaker position semaphore) _____
 Normal position of the semaphore: horizontal _____
 Remote control voltage 220 V DC _____
 Rated auxiliary voltage 220 V DC _____

ABB module No. 2 resulting order number 8TK3001-2BB66

The module is double (for 1. and 2. switching devices) _____
 Operating and display elements (with pushbutton, with LED, with breaker position semaphore) _____
 Normal position of the semaphore: horizontal _____
 Remote control voltage 220 V DC _____
 Rated auxiliary voltage 220 V DC _____

ABB module No. 3 resulting order number 8TK3001-3BB66

The module is single and its position is "left-most" _____
 Operating and display elements (with pushbutton, with LED, with breaker position semaphore) _____
 Normal position of the semaphore: horizontal _____
 Remote control voltage 220 V DC _____
 Rated auxiliary voltage 220 V DC _____

The order numbers of all ABB modules can be ascertained as shown in this example. Modules with identical order numbers, such as ABB modules number 1 and 2 in this case, can be interchanged. Only the operating and display elements must be correctly positioned in accordance with the coordinates of the feeder control diagram and the shielding plate must be transferred.

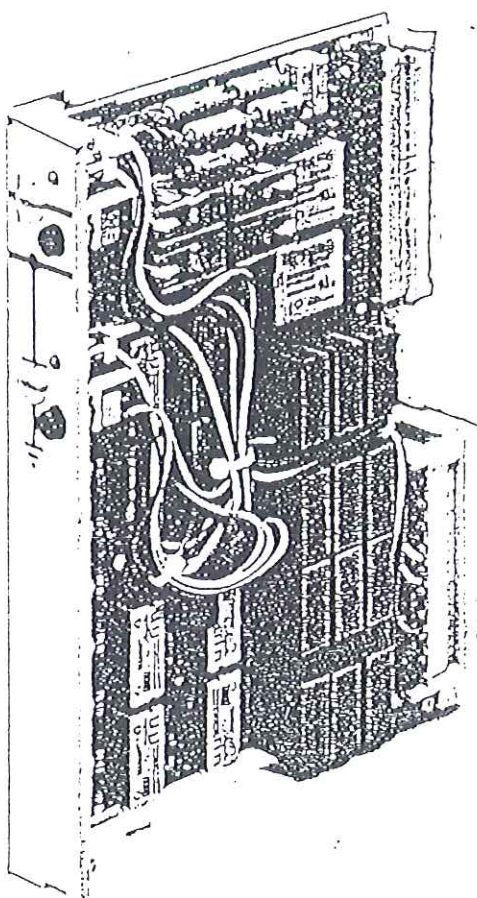
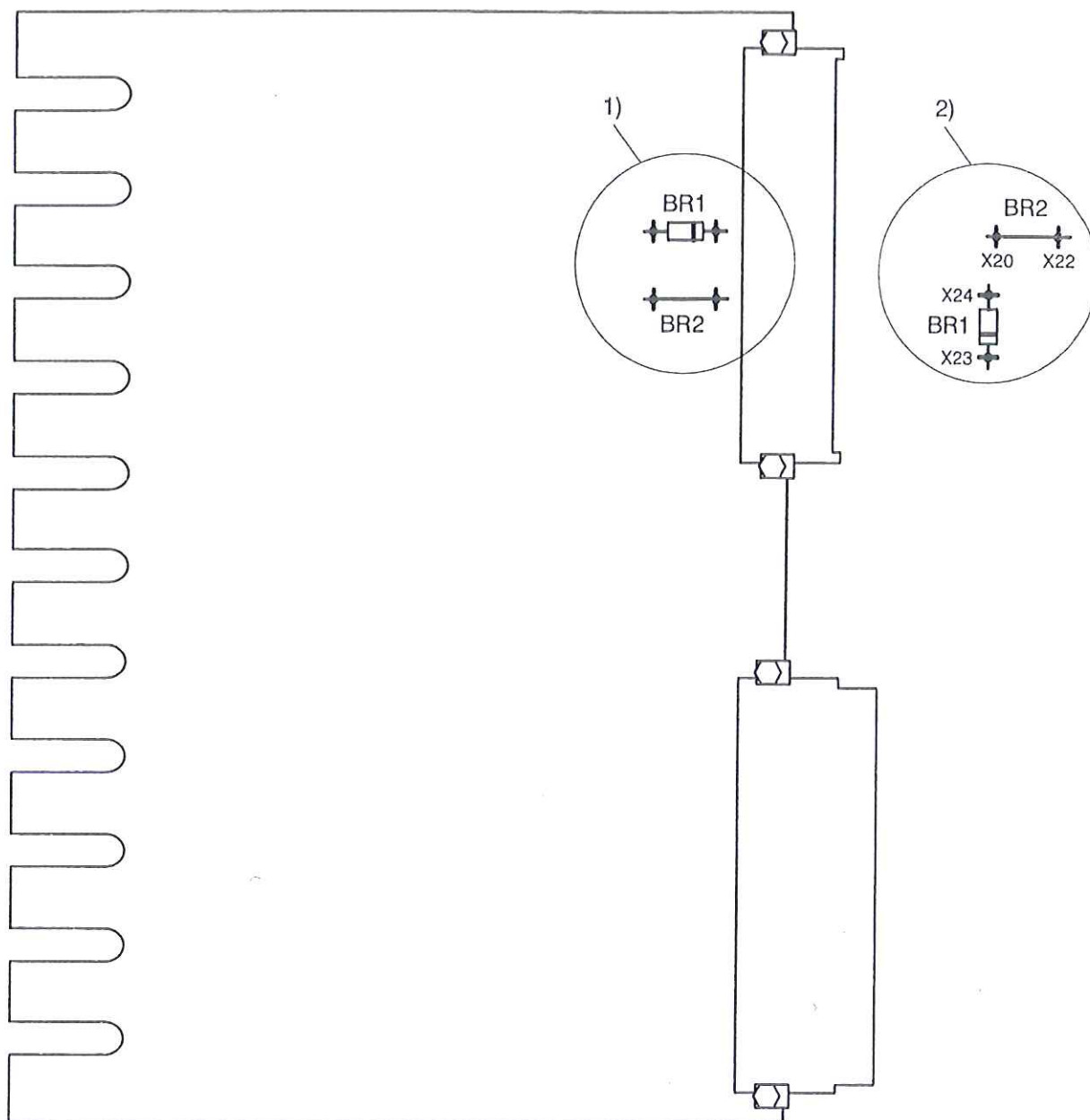


Fig. 12.7 Interface and control module 8TK3001 for two switching devices, without shielding plate

Modules



A diode of type 1N 4005 must be used for jumper 1 (BR1).
Jumper 2 (BR2) is a wire jumper.

- 1) Installed up to development version CC (9.90)
When installing, ensure that the diode is mounted with its cathode (ring)
pointing towards the edge connector.
- 2) Installed as of development version DD

Fig. 12.8 Interface and control module (ABB)

Modules

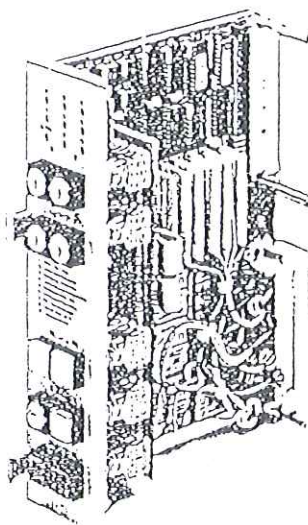


Fig. 12.9
Manual control module (FGB)

Manual control module (FGB) 8TK3002-***00

For technical details see the Manual, page 5/16

The manual control modules differ from each other in their appearance because of the different keyswitches which are fitted. On the PCB parallel to the front panel a triple soldered jumper is mounted with the supporting points A, B, and C for setting the control mode (as of development version EE, switch is on the basic PCB).

The order number (MLFB) of the module, which is necessary for replacement ordering, is printed on the front panel labeling strip.

When exchanging a defective FGB module, the jumper settings must be taken over onto the replacement module. If necessary, the MLFB must be adapted on the labeling strip to match the control type.

An FGB module equipped with four keyswitches can always be used instead of an FGB module with two keyswitches.

See the table below for the order number for an FGB module for replacement purposes and the assignment of the equipment / MLFB.

The FGB module is used both in the 8TK1 feeder unit and in the 8TK2 central unit.

Description	Order No.	Weight approx. kg
Manual control module (FGB)	8TK3002-□□□00	0.92
Remote control/Local control		
Remote control ON / Local control OFF, Ju. B-C - 1 keyswitch S1, S2, S3, S4		
Remote control ON / Local control ON, Ju. A-C - 2 keyswitch S1, S2, S3, S4		
Remote control ON / Local control OFF, Ju. B-C - 3 keyswitch S1, S2		
Remote control ON / Local control ON, Ju. A-C - 4 keyswitch S1, S2		
Remote control ON / Local control OFF, Ju. B-C - 5 keyswitch S1, S4		
Remote control ON / Local control ON, Ju. A-C - 6 keyswitch S1, S4		
Remote control ON / Local control OFF, Ju. B-C - 7 keyswitch S1		
Remote control ON / Local control ON, Ju. A-C - 8 keyswitch S1		
Keyswitch control		
Remote control S3, common alarm contact potential - A		
Remote control S2, S3, S4, separate alarm contact potential - B		
Front panel		
German labeling - A		
English labeling - B		
Spanish labeling - C		

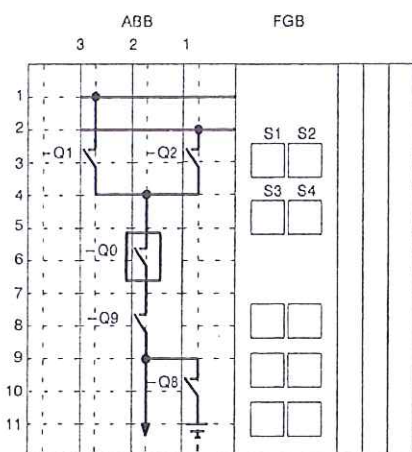


Fig. 12.10
Example of a feeder control
diagram with FGB module

If (according to selection table) three keyswitches are required for an interlocking unit (e.g. S1, S3, S4), the manual control module will be equipped with all four keyswitches S1, S2, S3, S4.

Ordering examples

An FGB module, as illustrated on the left, must be replaced by an interlocking unit. The order number must be determined.

FGB module for interlocking unit 8TK*262-0A Resulting order no. 8TK3002-3AA00

An interlocking unit with the order no. 8TK*262-0A has the control mode "Remote control ON/Local control OFF (jumper B-C) and the keyswitches S1, S2

FGB module for interlocking unit 8TK*262-3A Resulting order no. 8TK3002-4AA00

If it is an interlocking unit with the order no. 8TK*262-3A, it has the control mode "Remote control ON/Local control ON (jumper A-C) and the keyswitches S1, S2

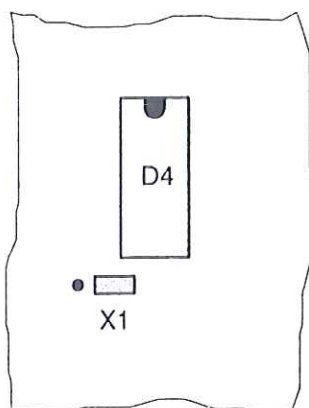
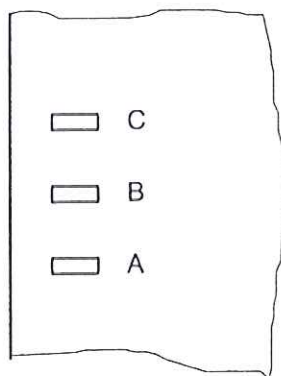
The following applies to both ordering examples:

Keyswitch control: Remote control S3, common alarm contact potential

Front panel: German labeling

Modules

Up to development version DD:
soldering lugs on the vertical PCB



As of development version EE:
microswitches on the basic PCB

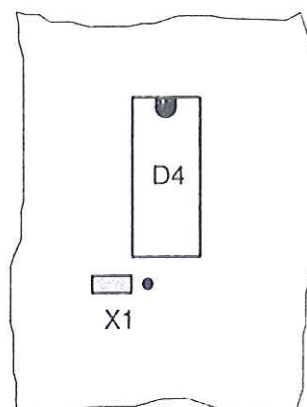
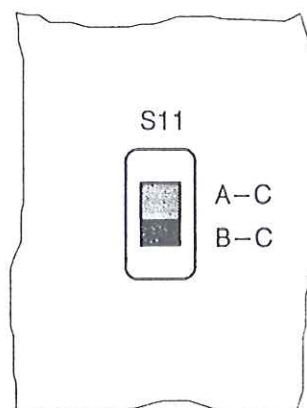
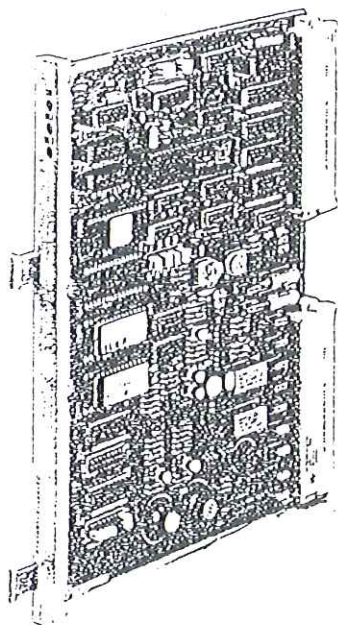


Fig. 12.11 Jumper settings

Modules



Microcomputer module, interlocking device (BSF) 8TK3004-*AA00

For technical details see the Manual, page 5/23

Two modules are available:

- BSF module for one feeder unit
- BSF module for one central unit

Description		Order No.	Weight approx. kg
Microcomputer module (BSF)	for feeder unit	8TK3004-1AA00	0.35
without interlocking EPROM, without coding	for central unit	8TK3004-2AA00	0.35

Note!

Each BSF module within a feeder combination system (feeder/central unit) contains additional "feeder-related information".

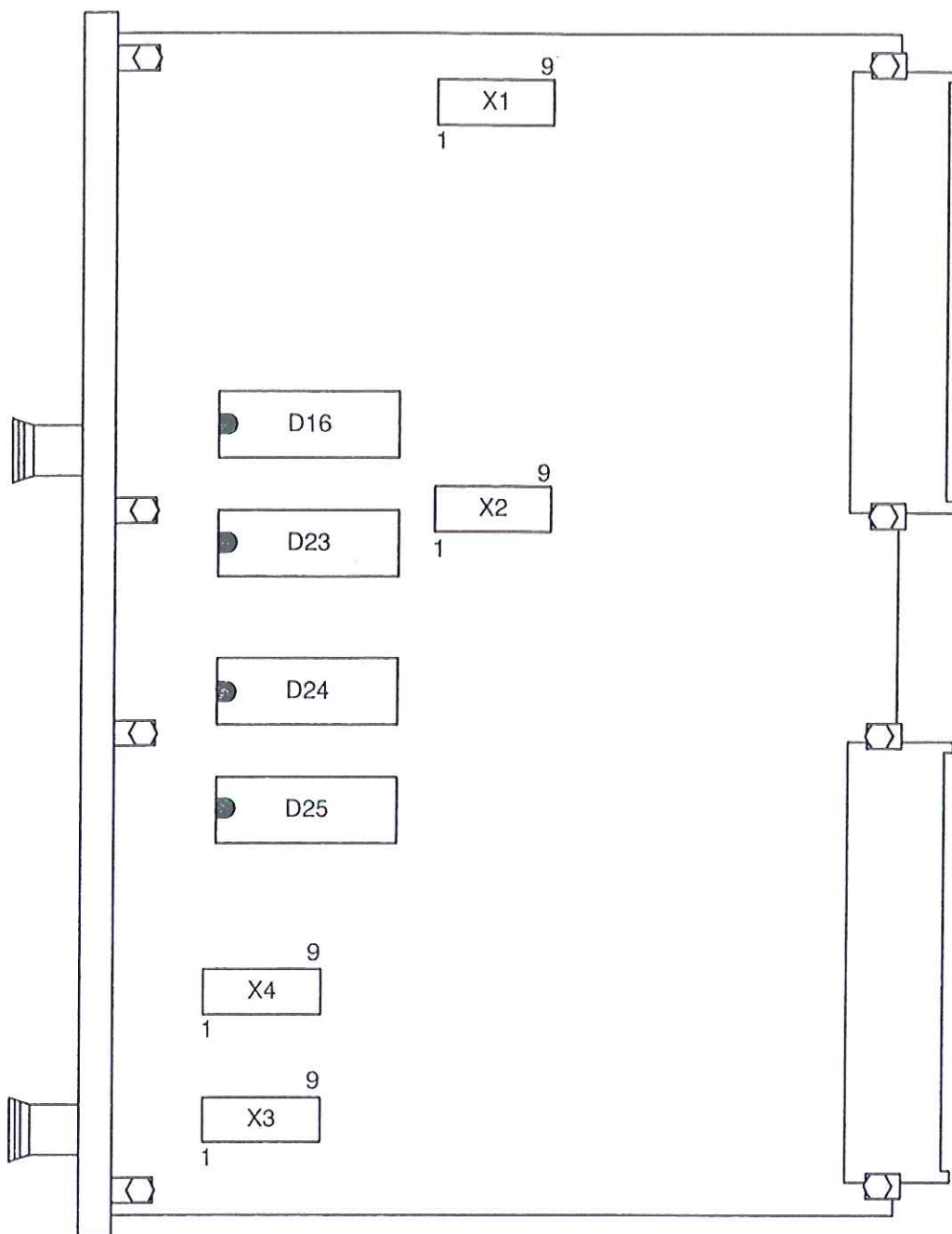
These relate to:

- the EPROM with interlock conditions
- the coding of the jumper bases X1, X2, X3, X4

If a defective BSF module is replaced, it must be ensured that the replacement module 8TK3004-*AA00 is programmed with the feeder-related information (EPROMs) and that the correct coding is set.

Fig.12.12 Microcomputer module,
interlocking device (BSF)

Modules



X1 – X4: jumper bases
D16, D23 – D25: EPROMs

Fig. 12.13 Microcomputer module interlocking device (BSF), feeder and central unit 8TK3004 – *AA00

Modules

The jumper bases X1 and X4 have the same function settings in the feeder and the central unit.
Jumper base X1 is always set with processor-specific functions for the MC 8031 type.
Transverse jumpers (e.g. 1-2, 2-3, 3-4,...) are always spare jumpers (lower row of pins).

	jumper base X1/function	
	8 - 9 7 - 10 6 - 11 5 - 12 4 - 13 3 - 14 2 - 15 1 - 16	transmitting signal at V24 level ¹⁾ transmitting signal at TTL level invert receiver signal invert transmitter signal I/O for external program memory ¹⁾ ALE (Address Latch Enable) ¹⁾ watchdog OFF no jumper

¹⁾ standard setting for MC 8031

Jumper base X4 marks the configuration module deposited in data memory D24, defining the number of busbars, up to and including software version ... V2.5 as well as delay time (Vz) adjustment of the error message F4 (on software ...V2.4 and higher) and retention time (Nz) of command output (BA) (on software ... V2.6 and higher)

	jumper base X4/function	
	8 - 9 7 - 10 6 - 11 5 - 12 4 - 13 3 - 14 2 - 15 1 - 16	up to software V2.5 configuration module for single busbar configuration module for double busbar configuration module for triple busbar configuration module for quadruple busbar configuration module for auxiliary busbar no jumper delay time for F4: 30 sec. } without jumper 2.5 sec. ¹⁾ delay time for F4: 10 sec. }

	jumper base X4/function	
	8 - 9 7 - 10 6 - 11 5 - 12 4 - 13 3 - 14 2 - 15 1 - 16	on software V2.6 and higher Special treatment 20-ON (None: No spec. treatm. outp. as long as inp. applied). F3 suppression 150 ms, no direct jumper retention time of } free } both jumpers } no jumper command output } 200 ms } 170 ms } 400 ms ¹⁾ retention time of command output: 5 sec. } both jumpers } without jumper retention time of command output: 2.5 sec. } 10 sec. } output directly ¹⁾ delay time for F4: 30 sec. } without jumper delay time for F4: 10 sec. } 2.5 sec. ¹⁾ *) only available with 8TK3001 -/DD

¹⁾ All interlocking units are delivered ex works without jumper n ($V_z = 2.5$ sec., $N_z =$ direct command output).
If, for example, switching devices with manual operation are taken into consideration for interlocking, the delay time has to be adjusted > the switching time. If necessary, the standard operating program has to be exchanged.

Modules

BSF feeder unit 8TK3004–1AA00

Jumper base X2 defines type and dimension of the memory modules (EPROMs) which can be plugged into corresponding sockets D16, D23, D24, D25.

Socket	EPROM labeling	Function
D16	SFS ABZ V <input type="checkbox"/> <input type="checkbox"/> <u>Example:</u> SFS ABZ V 3.2	Standard operating program "Schaltfehlerschutz <u>Ab</u> zweiggerät <u>V</u> ersion ..." (interlocking device, feeder unit version)
D23	—	no jumper
D24	AB <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <u>Example:</u> AB 0 0 0 2 (8TK1362–0AA2*–#DA3 10.10.89 D24)	EPROM with feeder-specific internal interlocking conditions of the feeder (from date of delivery 10.89, labeled with: unit MLFB, output date, socket)
D25	—	no jumper

	jumper base X2/function	
	8 – 9 data memory D25 = 2732A (4K) 7 – 10 data memory D25 = 27128 (16K) 6 – 11 data memory D24 = 2732A (4K) 5 – 12 data memory D24 = 27128 (16K) 4 – 13 data memory D23 = 2732A (4K) 3 – 14 data memory D23 = 27128 (16K) 2 – 15 program memory D16 = 2732A (4K) 1 – 16 program memory D16 = 2712A (16K)	EPROM type 2764 (8K): without jumper
According to type and dimension of the EPROM, the corresponding jumper (4K or 16K) has to be inserted.		

Modules

Jumper base X3 sets the feeder number of the SFS unit for correct data exchange (message inter-change) with the interlocking central unit .

Jumper base X3		Feeder no.	Switching unit / voltage level		
<div>no jumper</div> <div>16 15 14 13 12 11 10 9</div> <div>X3</div> <div><div><div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div></div><div>1 2 3 4 5 6 7 8</div></div>		binary	UW—..... KV 		
Jumper setting		Feeder no. decimal	Bay name	Order no. (MLFB) feeder units	Corresponding plug Central unit
		N01	—	8TK1 — —	X811 / A1
		N02	—	8TK1 — —	X812 / B1
		N03	—	8TK1 — —	X813 / C1
		N04	—	8TK1 — —	X814 / D1
		N05	—	8TK1 — —	X821 / A2
		N06	—	8TK1 — —	X822 / B2
		N07	—	8TK1 — —	X823 / C2
		N08	—	8TK1 — —	X824 / D2
		N09	—	8TK1 — —	X831 / A3
		N10	—	8TK1 — —	X832 / B3
		N11	—	8TK1 — —	X833 / C3
		N12	—	8TK1 — —	X834 / D3
		N13	—	8TK1 — —	X841 / A4
		N14	—	8TK1 — —	X842 / B4
		N15	—	8TK1 — —	X843 / C4
		N16	—	8TK1 — —	X844 / D4
		N17	—	8TK1 — —	X851 / A5
		N18	—	8TK1 — —	X852 / B5
		N19	—	8TK1 — —	X853 / C5
		N20	—	8TK1 — —	X854 / D5
		N21	—	8TK1 — —	X861 / A6
		N22	—	8TK1 — —	X862 / B6
		N23	—	8TK1 — —	X863 / C6
		N24	—	8TK1 — —	X864 / D6
		N25	—	8TK1 — —	X871 / A7
		N26	—	8TK1 — —	X872 / B7
		N27	—	8TK1 — —	X873 / C7
		N28	—	8TK1 — —	X874 / D7
		N29	—	8TK1 — —	X881 / A8
		N30	—	8TK1 — —	X882 / B8
		N31	—	8TK1 — —	X883 / C8
		N32	—	8TK1 — —	X884 / D8

Modules

BSF central unit 8TK3004-2AA00

Jumper base X2 sets the type and dimension of the memory modules (EPROMs), which can be plugged into the sockets D16, D23, D24, D25.

Socket	EPROM labeling	Function
D16	SFS ZG V <input type="checkbox"/> <input type="checkbox"/> <u>Example:</u> SFS ZG V 3.1	Standard operating program "Schaltfehlerschutz Zentralgerät Version ..." (interlocking device central unit version)
D23	—	no jumper (on SW V2.0 or higher)
D24	AB <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <u>Example:</u> AB 0 0 0 2 (8TK2282-0HB2* - #DA3 10.10.89 D24)	EPROM with feeder-specific, internal interlocking conditions of the feeder combination of the central unit. (from delivery date 10.89, labeled with: unit MLFB, output date, socket)
D25	ZG <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <u>Example:</u> ZG 6 0 0 1 (8TK2282-0HB2* - #DA3 10.10.89 D25)	EPROM with unit-specific, external interlocking conditions of all switching devices of the unit. (from delivery date 10.89, labeled with: unit MLFB, output date, socket)

<div><div>D16D23D24D25</div><div>X2</div><div>1</div><div>6K4K16K4K16K4K16K4K</div></div>		jumper base X2/function
8 - 9	data memory D25 = 2732A (4K)	} EPROM type 2764 (8K): without jumper
7 - 10	data memory D25 = 27128 (16K)	
6 - 11	data memory D24 = 2732A (4K)	
5 - 12	data memory D24 = 27128 (16K)	
4 - 13	data memory D23 = 2732A (4K)	
3 - 14	data memory D23 = 27128 (16K)	
2 - 15	program memory D16 = 2732A (4K)	
1 - 16	program memory D16 = 27128 (16K)	
According to type and dimension of the EPROM, the corresponding jumper (4K or 16K) has to be inserted.		

Jumper base X3 on the processor module of the central unit contains information about the number of the serial transmitter / receiver controlling modules (SAB) and about the coupling to a second central unit, if available.

		jumper base X3/function
8 - 9	SAB 1 available (8TK3005-1AA00 / + AC135)	
7 - 10	SAB 2 available (8TK3005-2AA00 / + AC141)	
6 - 11	no jumper	
5 - 12	no jumper	
4 - 13	no jumper	
3 - 14	no jumper	
2 - 15	coupling central unit (on SW V2.4 and higher)	
1 - 16	no jumper	

Modules

Front panels / labeling strip

The processor modules for the feeder and central unit differ externally by the marking of the LEDs and the labeling strips 1 and 2 on the front panel.

BSF feeder unit

Green LED ELL: receiver-run lamp

Green LED SLL: transmitter-run lamp

Labeling strip 1: 8TK3004-1AA00-Z /CC

MLFB / Version

Labeling strip 2: EPROM name, number of busbars

feeder number (has been dropped from delivery date 10.89)

Example -Z:

A00 + A02 + M06 + N01

feeder number of the interlocking unit
jumper base X3

number of busbars
M01....M04 \triangleq 1-fold-BB....4-fold-BB
M05....M08 \triangleq 1-fold-BB....4-fold-BB with AB
jumper base X4

name of the EPROM of the feeder interlocking device
(\triangleq SW-MLFB), socket D24
A00 + A02 \triangleq AB 0002 \triangleq 8TK4202-0AA00-0NA3

BSF central unit

Green LED DLL 1: data-run lamp 1 (operation with SAB 1)

Green LED DLL 2: data-run lamp 2 (operation with SAB 2)

Labeling strip 1: 8TK3004-2AA00-Z /CC

MLFB / Version

Labeling strip 2: EPROM name, number of busbars

number of SAB (has been dropped from delivery date 10.89)

Example -Z:

A00 + A02 + M06 + S01 + C60 + C01

as feeder unit

name of the EPROM for the interlocking unit
(\triangleq MLFB of the central unit), socket D25
C60 + C01 \triangleq ZG6001 \triangleq 8TK2202-0GC24-0NA3

S01 = SAB 1 available
S02 = SAB 1 + SAB 2 available

Modules

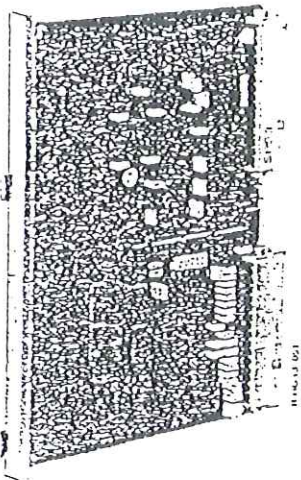


Fig. 12.14
Input / output module

Input / output module (EAB) 8TK3003- *AA00

For technical details see the Manual, page 5/20

To provide the input / output interface to the ABB modules, the EAB module is available in two types.

One EAB module is suitable for connection to five switching devices.

As with the ABB modules, the left-most EAB module must be fitted with a terminating jumper, the other EAB modules have no terminating jumpers.

If only one EAB module is used, it must be fitted with a terminating jumper.

Reference to the feeder control diagram of an interlocking device, together with the quantity and arrangement of the switching devices, will allow determination of the order number of the appropriate EAB module.

The module is labeled at the front side with a labeling strip on which the order number (MLFB) can be seen. A replacement module with terminating jumper can at any time be converted into a module without terminating jumper. If necessary, the front panel must be exchanged or the order number must be overwritten with a waterproof marker (this also applies vice versa).

Description	Order No.	Weight approx. kg
Input / output module	8TK3003- <input type="checkbox"/> AA00	0.3
terminating jumpers		
without terminating jumper -1		
with terminating jumper -2		

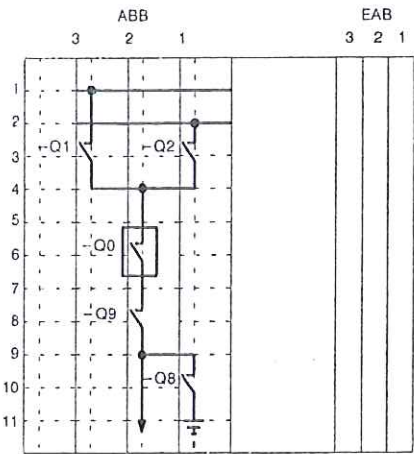
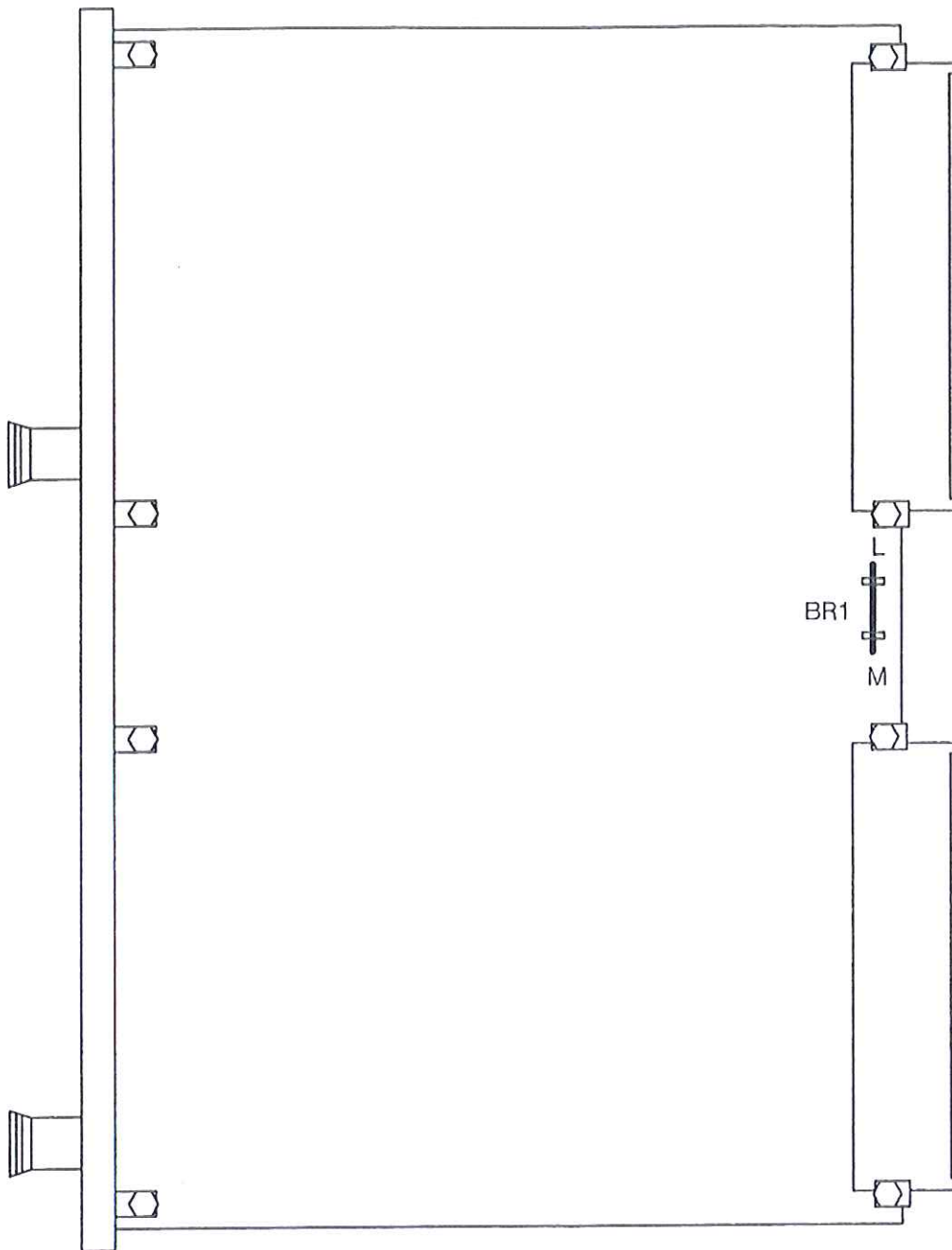


Fig. 12.15
Example of feeder control diagram with EAB module No. 1

EAB module No. 1	Order No.	8TK3003-2AA00
EAB module No. 1 is fitted <u>with</u> a terminating jumper because it is the only EAB module in the assembly.		

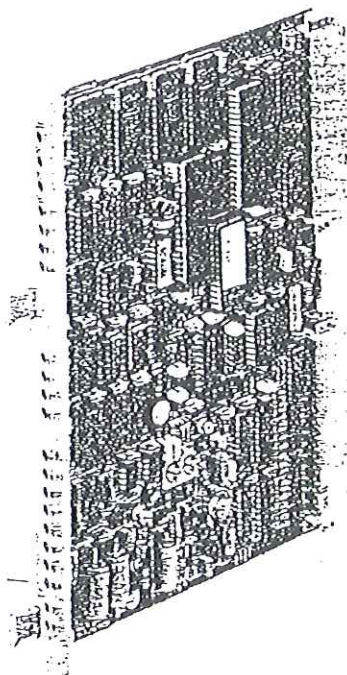
Modules



Terminating jumper BR1 is a wire jumper

Fig. 12.16 Input / output module (EAB)

Modules

**Transmitter / receiver controlling module (SAB) 8TK3005–*AA00**

For technical details see the Manual, page 5/28

The SAB module is used only in the central unit.

Two versions are available:

- SAB module for the feeders 1 to 16
- SAB module for the feeders 17 to 32

Note!

As with the BSF module, this module contains device-related information which is coded on various jumper components. This coding must be set on the new module when a defective one is replaced.

A defective module can only be replaced by a new module, i.e. the non-volatile memory of this module must not have any content. Exchanging these modules is not permitted once the central unit has been put into operation.

The setting / function of the jumper bases can be seen in the following table.

Description		Order No.	Weight approx. kg
Transmitter / receiver controlling module (SAB)	for feeders 1 – 16	8TK3005–1AA00	0.27
	for feeders 17 – 32	8TK3005–2AA00	0.27

Fig. 12.17
Transmitter/receiver controlling
module (SAB)

Modules

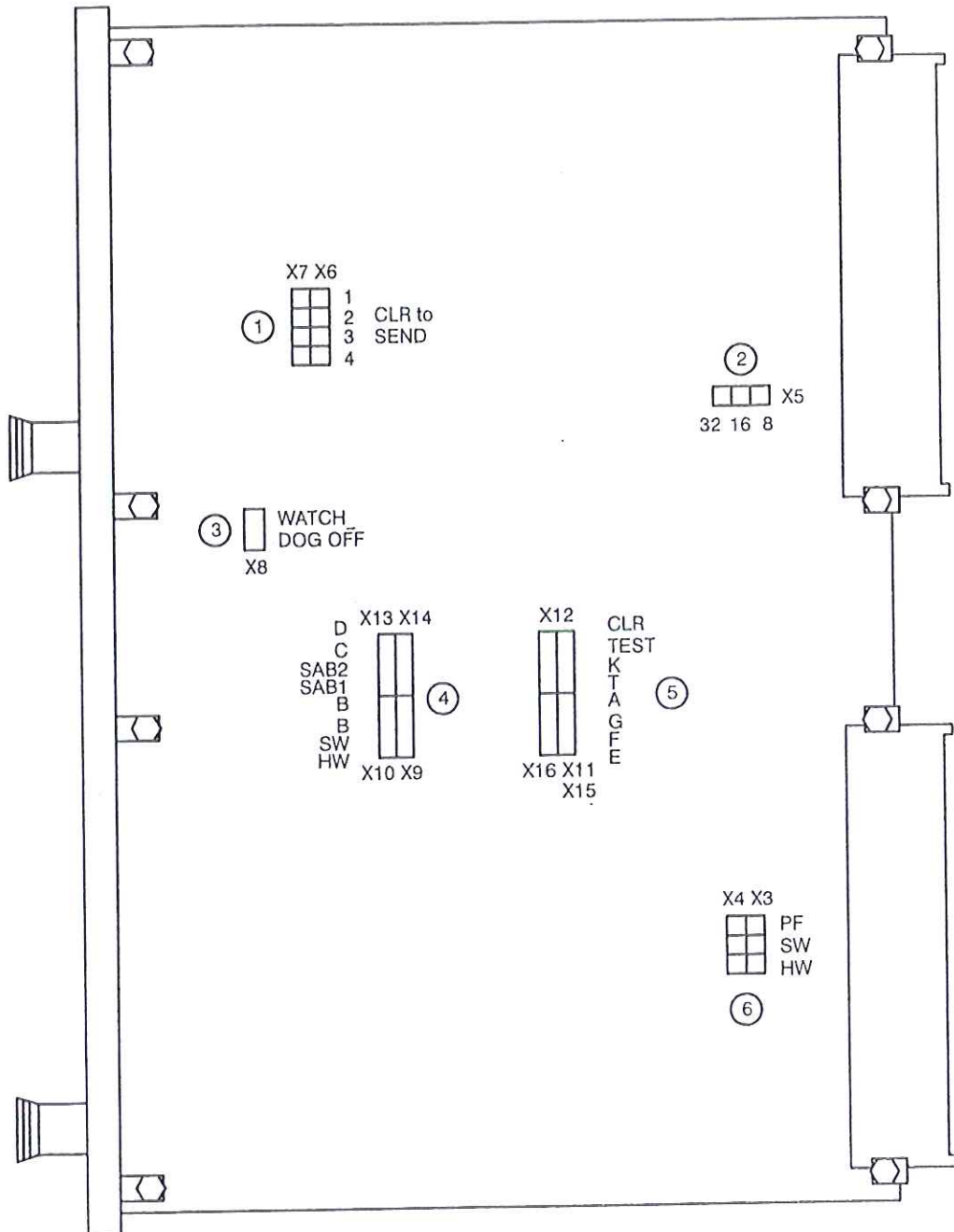


Fig. 12.18 Transmitter / receiver controlling module (SAB)

Modules

Group	Jumper base	Pins	Jumper inserted	Function
①	X6, X7	1 2 3 4		no jumper no jumper no jumper no jumper
②	X5	8–16 16–32	X	EPROM D27, Type 2764 (8 K) (standard) EPROM D27, Type 27128 or 27256 (16 K)
③	X8	–		WATCHDOG OFF, if jumper inserted
④	X9, X10 X13, X14	HW SW A B SAB1 SAB2 C D	X	NVRAM restores by: RESET no jumper no jumper no jumper 8TK3005–1AA00 module 8TK3005–2AA00 address no jumper no jumper
⑤	X11, X12 X15, X16	E F G H I K TEST CLR	X	replacement jumper no jumper no jumper no jumper no jumper no jumper no jumper no jumper
⑥	X3, X4	HW SW PF	X	restoring signal from RESET restoring signal from MC restoring signal from X11

Modules

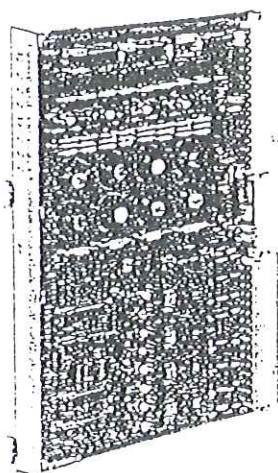


Fig. 12.19

Four-channel serial interface module (VES)

Four-channel serial interface module (VES)

For technical details see the Manual, page 5/32

The VES module is only required in the central unit and performs the function of signal amplification during data exchange.

These VES modules are identical with each other. For four feeders, one VES module is required.

Description	Order No.	Weight approx. kg
Four-channel serial interface module (VES)	8TK3008-0AA00	0.27

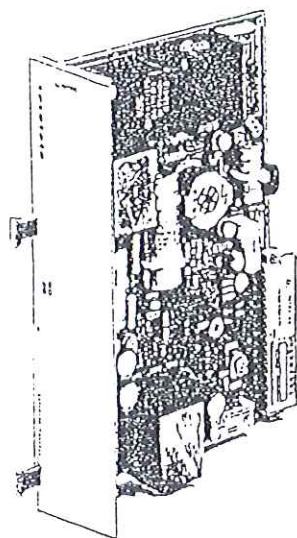


Fig. 12.20

Power supply module (SV)

Power supply module (SV)

For technical details see the Manual, page 5/33

The power supply module for a feeder unit has a rated output of 30 W, that for a central unit, 75 W.

These modules are independent of the rated auxiliary voltage (motor control circuit / station battery voltage).

The power supply module SV75 for 75 W can be used for a central unit or for a feeder unit and is thus suitable as a spare module for replacement purposes.

Description	Order No.	Weight approx. kg	
Power supply module (SV)	SV30 for feeder unit SV75 for central unit	8TK3006-0AA0 <input type="checkbox"/>	1
		8TK3007-0AA0 <input checked="" type="checkbox"/>	1.3

Rated auxiliary voltage / station battery

- 48 V DC - 2
- 60 V DC - 3
- 110 V DC - 4
- 125 V DC - 5
- 220 V DC - 6
- 250 V DC - 7

Modules

Screening module

The screening module prevents electromagnetic disturbance between the central plug board and the four-channel receiver / transmitter modules in the central unit and between the power supply and the microcomputer module in the feeder unit.

Description	Order No.	Weight approx. kg
Screening module	8TK3000-1BA00	0.14

Dummy modules

The cover plates are fitted with rack plug-in brackets and are used to fill in blank spaces in the front panel of the complete interlocking unit.


Three types are available:

Description	Order No.	Weight approx. kg
Dummy module with flat front panel, 1 SPS ¹⁾	6XF2006-6KB00	0.022
with flat front panel, 2 SPS ¹⁾	6XF2012-6KB00	0.036
with front panel coordinate matrix (for empty ABB position)	6XF3000-2LA00	0.038

Front panels, single

Description	Order No.	Weight approx. kg
Front panel flat, 1 SPS ¹⁾	6XF1006-6KM00	0.016
undrilled for ABB module, 2 SPS ¹⁾	C73451-A352-C1	0.03

Connectors

Description	Order No.	Weight approx. kg
Connector for serial data transmission cable	W73071-U1601-L4	0.06
Cable connector with contacts for FGB module	8TK3911-0AA00	0.11
Cable connector with contacts and series resistors, loose component set	8TK3911-0AA 	0.13
Coding according to connection level		
-X801-1 -X802-2 -X803-3 -X804-4		
-X805-5 -X806-6 -X807-7		
Rated auxiliary voltage motor control circuit / station battery		
60 V DC-3 110 V DC-4 125 V DC-5 220 V DC-6		

Pulling tool

For the interface and control module, a special pulling tool is necessary.

Description	Order No.	Weight approx. kg
Pulling tool	C73451-A352-C12	0.002

Keys

Description	Order No.	Weight approx. kg
Keys S1 to S5 for keyswitch S1 (master interlock override)	8TK3921-0AA00	0.008
for keyswitch S2 (line earthing switch)	8TK3922-0AA00	0.008
for keyswitch S3 (auxiliary / bypass bus disconnect)	8TK3923-0AA00	0.008
for keyswitch S4 (maintenance and busbar earthing switch)	8TK3924-0AA00	0.008
for keyswitch S5 (remote / local / off changeover switch)	8TK3925-0AA00	0.008

¹⁾ 1 SPS = 15.24 mm

1

2

3

Subject to change without prior notice.

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Printed in the Federal Republic of Germany

AG 1195 0.1 FO 134 En