

# TS 981 door control

Control panel with traffic management for GfA ELEKTROMATEN® drives with DES digital limit switch

## Approvals and certificates

TS 981 / TS 981 FT

Type test according to:

DIN EN 12453      DIN EN 12978  
DIN EN 60335-1    DIN EN 60335-2-103  
DIN EN ISO 13849-1    TÜV NORD CERT GmbH



## TS 981 – Control panel with traffic management for DES

### Technical data

- For GfA ELEKTROMATEN drives with digital limit switch DES
- Supply voltage:  
1N~230 V, PE / 3~230 V, PE / 3N~400 V, PE / 3~400 V, PE
- Operating frequency: 50 Hz / 60 Hz
- Control voltage: 24 V DC
- Mains supply ratings for external devices: 24 V DC (1 A) / 230 V AC (1,6 A)
- Permissible temperature range: -10 °C...+50 °C

### Housing

- Dimensions W x H x D [mm]: 190 x 300 x 115 mm
- IP65 rated when hard wired or IP54 with CEE plug
- Live electrical parts covered
- Incl. drilling template and fixing elements

### Description

- Integrated OPEN-STOP-CLOSE control device
- Connection points for two external three push buttons
- For hard wiring or with ready wired CEE plug and mains supply cable of length 0.7m
- Settings via selector switch with digital display
- Pluggable connection technology
- Connection cable running to ELEKTROMATEN available in various lengths
- Two independent, programmable relay contacts<sup>1)</sup>, e.g. for use as status contacts
- UBS<sup>2)</sup> module with 5 plug-in points for the simple connection of control devices, photo cells, radio receivers etc. (for details on UBS accessories, see 8.091)
- Slack-rope and pass-door plug-in connection points
- Terminals for two pull-switches or radio control 1- or 2-channel available, functions programmable

### Accessories

- Emergency STOP switch
- Key switch
- For description and details on further accessories, see 8.085

<sup>1)</sup> Additional five contacts available (via optional SMF module)

<sup>2)</sup> UBS universal command sensor system (see S. 8.091)

TS 981



### Functions

- Adjustment of limit positions and all functions from the operator level
- Selectable operating mode:
  - CLOSE/OPEN in hold-to-run mode
  - CLOSE in hold-to-run mode/OPEN in self-hold mode
  - CLOSE/OPEN in self-hold mode
- Automatic safety edge detection and evaluation:
  - Optical safety edge system (e.g. Vitector system)
  - NO-contact principle, 8k2
  - NC-contact principle, 1k2, with testing
- Automatic closing with adjustable time setting (1-240 seconds) (function can also be activated/deactivated):
  - Once the top limit position or intermediate open position has been reached, the door closes automatically after the set duration
  - Interruption to timer possible via photo cell activation
- Adjustable intermediate open position with individual programming options
- Entrapment evaluation, selectable:
  - Optical systems
  - NC/NO contact with resistor
  - Safety photo cells
- Automatic ground adjustment to compensate for rope stretch or subsequent change in ground height (not for pressure-wave switches)
- Overrun correction to compensate for changes to overrun, e.g. due to influence of temperature
- Status and information display (including display of the two recent faults)
- Cycle counter (non-resettable)

### Further functions

- Maintenance-cycle counter:
  - Setting range: 1,000 - 99,000 cycles
  - Display indication or switch to hold-to-run operation once the maintenance-cycle limit is reached
- Detects door/drive blockage; in this event the control deactivates the drive unit
- Adjustable force monitoring in OPEN direction:
  - For counterbalanced doors, sudden changes to the counter-balancing are detected
  - Self-learning feature and consequently no activation of force monitoring function due to, e.g., a change in spring tension
- Automatic detection of ELEKTROMATEN unit with direct inverter (DI) or frequency inverter (FI):
  - Setting of output speed
  - Soft start and soft stop through automatic adjustment of acceleration and braking ramps
  - Possible to modify acceleration and braking ramps
- RWA function (smoke and heat extraction) actuates a compulsory door opening, to be used with external smoke alarm systems

- One-way and two-way traffic control with adjustable functions such as: fore-warning time, extension of greenlight period, clearance time as well as priority to entry or exit
- Slot for memory cards<sup>2)</sup>, for installing or upgrading software with SD or MMC cards

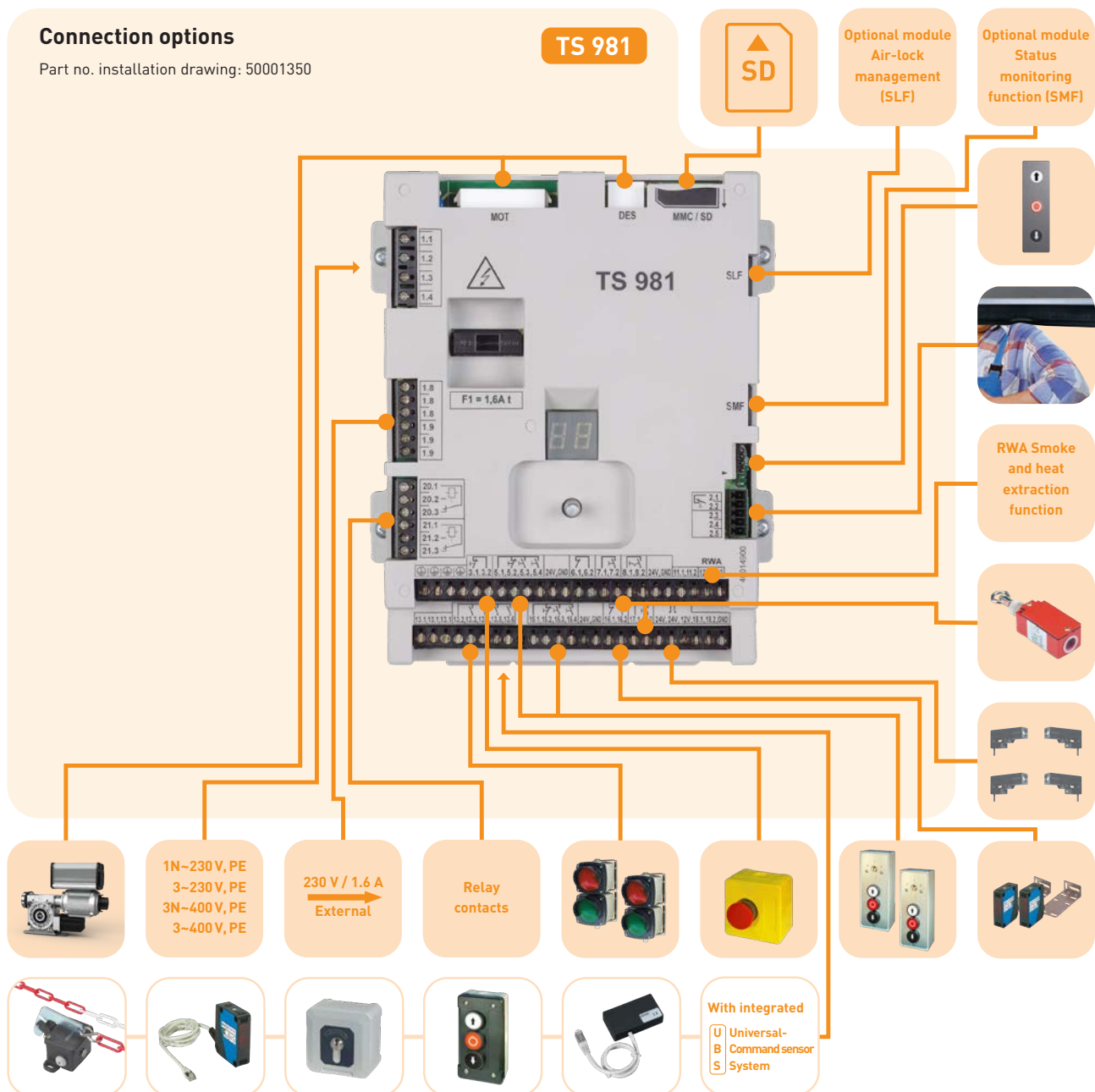
### Special functions via optional modules

- Status monitoring module (SMF): Additional five contacts available for positioning and fault information
- Air-lock module (SLF): For operating two TS 981 as an air-lock
- Panic module (extension to the SLF module): Interrupting the air-lock function if an additional control device is actuated

1) Only for memory cards up to 1 GB

### Connection options

Part no. installation drawing: 50001350



## Door control

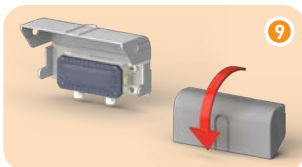
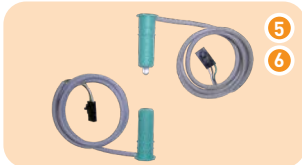
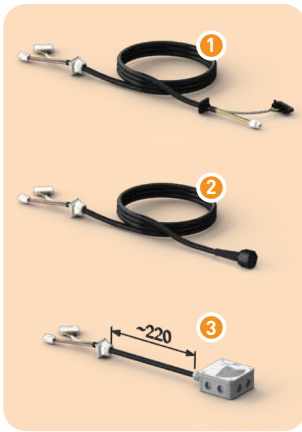


Designation	Description	Part no.
TS 981 for hardwiring	1 Without mains supply cable	20098100.00001
TS 981 with CEE 3N-400 V (5-pole)	2 With mains supply cable of length 0.7 m	20098100.00002
TS 981-FT with CEE 3N-400 V (5-pole)	3 For Folding-door-ELEKTROMATEN FT; with mains supply cable of length 0.7 m	20098151.00002
TS 981 with CEE 1N-230 V (3-pole)	4 With mains supply cable of length 0.7 m	20098100.00006
TS 981 with CEE 1N-230 V asym. (3-pole)	4 For SI 25.15 WS / SI 45.7 WS / ST 16.24 WS; with mains supply cable of length 0.7 m	20098100.00014

Designation	Description	Part no.
TS 981-XL in plastic housing	W x H x D [mm]: 300x400x132 (165); Protection class: IP65 - Slide gland for pluggable connection cable running to ELEKTROMATEN drives - 3 DIN mounting rails - 6 x M20 cable glands	
Part no. installation drawing: 50001908	5 Version with mains switch 3N-400 V 6 Version when hardwired 230 V-400 V 7 Lock for padlock (2 pc)	20098100.20021 20098100.20001 40019408

Designation	Description	Part no.
TS 981 in stainless steel control enclosure (For areas with high demands on hygiene or corrosion protection)	8 W x H x D [mm]: 400x400x200; Protection class: IP66 - 4-pole mains switch - 3 DIN mounting rails - 8 cable glands Version AISI 304L (V2A) Version AISI 316L (V4A)	20098199.00001 20098199.00002

## Accessories



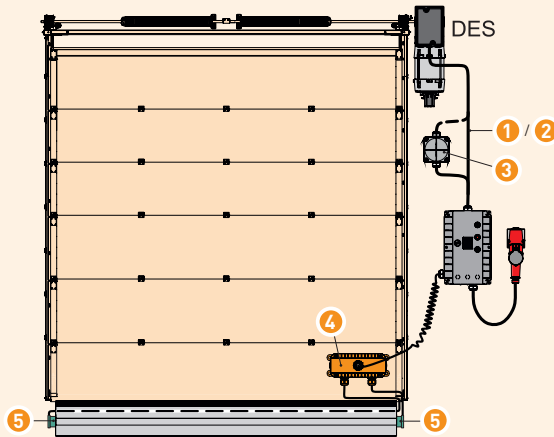
Designation	Description	Part no.
DES connection cable	<p><b>1</b> Connection to ELEKTROMATEN drives with digital limit switch, pluggable on both sides; length of cable<sup>1)</sup>:</p> <p>3 m 5 m 7 m 9 m 11 m 13 m 15 m</p>	<p>20002420.00300 20002420.00500 20002420.00700 20002420.00900 20002420.01100 20002420.01300 20002420.01500</p>
XES connection cable	<p><b>2</b> Connection to ELEKTROMATEN SE 8.60 FI, pluggable on both sides; length of cable<sup>1)</sup>:</p> <p>3 m 5 m 7 m 9 m 11 m 13 m 15 m</p>	<p>20003673.00300 20003673.00500 20003673.00700 20003673.00900 20003673.01100 20003673.01300 20003673.01500</p>
Connection set TS / clamp	<p><b>3</b> Connection of the ELEKTROMATEN using the terminals in the box; use, for example, for routing the connection cable through the wall; Length of cable: 0.22 m</p>	30005728
Spiral cable with junction box (IP65)	<p><b>4</b> Straight cable ends (2 m / 0.35 m); length of coiled cable: 0.9 m; max. stretched length: 4 m - For OSE (optical safety edge system, e.g. Vitector system) - Can be combined with OSE system 1 or 2</p>	20002620.00001
Universal OSE set, for system 1	<p><b>5</b> System 1 = one junction box; transmitter + receiver, pluggable design with receiver (0.5 m long cable) and transmitter with</p> <p>6.5 m cable 10.5 m cable Are also required for system 1: <b>5</b></p>	<p>30005185.00650 30005185.01050</p>
Universal OSE set, for system 2	<p><b>6</b> System 2 = junction box + junction end box; transmitter + receiver, pluggable designs with 0.5 m long cables for each</p> <p>Are also required for system 2: <b>5 + 8 + 9</b></p>	30005185.00060
Junction end box (IP65) for system 2	<p><b>7</b> With plug-in connection points for transmitter / receiver, as well as for pass-door and slack-rope switches</p>	30004834
Connection cable for system 2	<p><b>8</b> Pluggable on both sides, 5-wire, cable length:</p> <p>4.5 m 6.5 m 8.5 m 10.5 m</p>	<p>20002630.00450 20002630.00650 20002630.00850 20002630.01050</p>
Splash guard	<p><b>9</b> Mechanical protection against water; For spiral cable with junction box <b>5</b> and junction end box <b>8</b></p>	40017478.00001

■ Visual overview on page 8.085

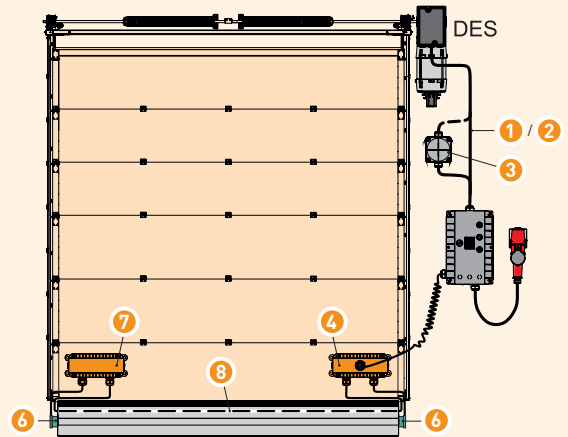
■ Further accessories are described in Section 9, e.g. radio from page 9.023

■ **1)** Further lengths available, upon request

### Example with system 1



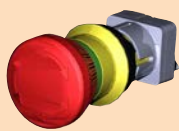
### Example with system 2



## Accessories



1



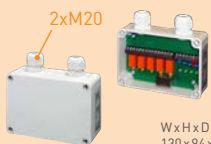
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3

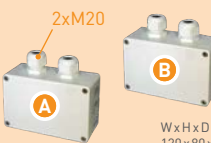


4



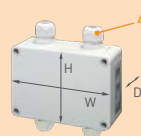
5

W x H x D [mm]:  
130 x 94 x 55



6

W x H x D [mm]:  
120 x 80 x 50



7

W x H x D [mm]:  
160 x 120 x 55

#### Designation

#### Description

#### Part no.

Key switch	1	Assembly kit for installation in top section of the housing, supplied with 2 keys	30004616
Emergency STOP switch	2	Assembly kit for installation in top section of the housing	30004615
Toggle switch for intermediate open position	3	Assembly kit for installation in top section of the housing	30004679
Water protection shield stainless steel made	4	Recommended to guard the door control	40015005
Status monitoring module SMF	5	Additional five potential-free relay contacts Activation at: 1. Safety edge activated 2. STOP 3. Photo cell activated 4. Final limit position CLOSE 5. Final limit position OPEN incl. connection cable to the door control	30004743
Air-lock module SLF	6	For operating two TS 981 as an air-lock; consisting of module A + B; incl. connection cable to the door control the connection between the modules should be established on site	30004742
Panic module	7	Extension to the SLF module 6; for fast Activating / Deactivating of the air-lock-function or opening of both doors in an emergency situation (an additional control device is needed)	30004824

## Arrangement



## Spare parts TS 981



Designation	Description	Part no.
TS 981 board	1 Within cover	30004613
Housing TS-A1 cpl.	2+3+4+5 Top section with screws, keyboard, hinges, bottom section	20002984.00001
Top section of housing TS-A1 cpl.	2+3+4 Top section with screws, keyboard, hinges	20002985.00001
Keyboard for TS-A1	3 With mounting material	30004638
Hinge TS-A	4 2 pc	30004632
Bottom section of housing TS-A	5	40014770

## Spare parts TS 981-XL



Designation	Description	Part no.
Mounting kit for housing XL	1 4 pc	40017128
Membrane push button for TS-A	2 With viewing window	40016547
Hinge	3 2 pc	30005828
Top section of housing XL for TS-A	2+3+4 Consists of: Membrane push button for TS-A, hinges, cover	30005827.00004
Housing XL for TS-A	3+4+5 Consists of: Hinges, cover, bottom section with mounting plate and 3 DIN mounting rails	30005246
TS 981 board	6 Within cover	30004613
Mains switch for housing XL	7 4-pole	40015183
Housing XL for TS-A with mains switch, complete	1+2+3+4+5+7 Consists of: Mounting kit for housing XL, Membrane push button for TS-A, Housing XL for TS-A, mains switch for housing XL	20002984.20006
Lock for padlock	8 2 pc (without padlock)	40019408