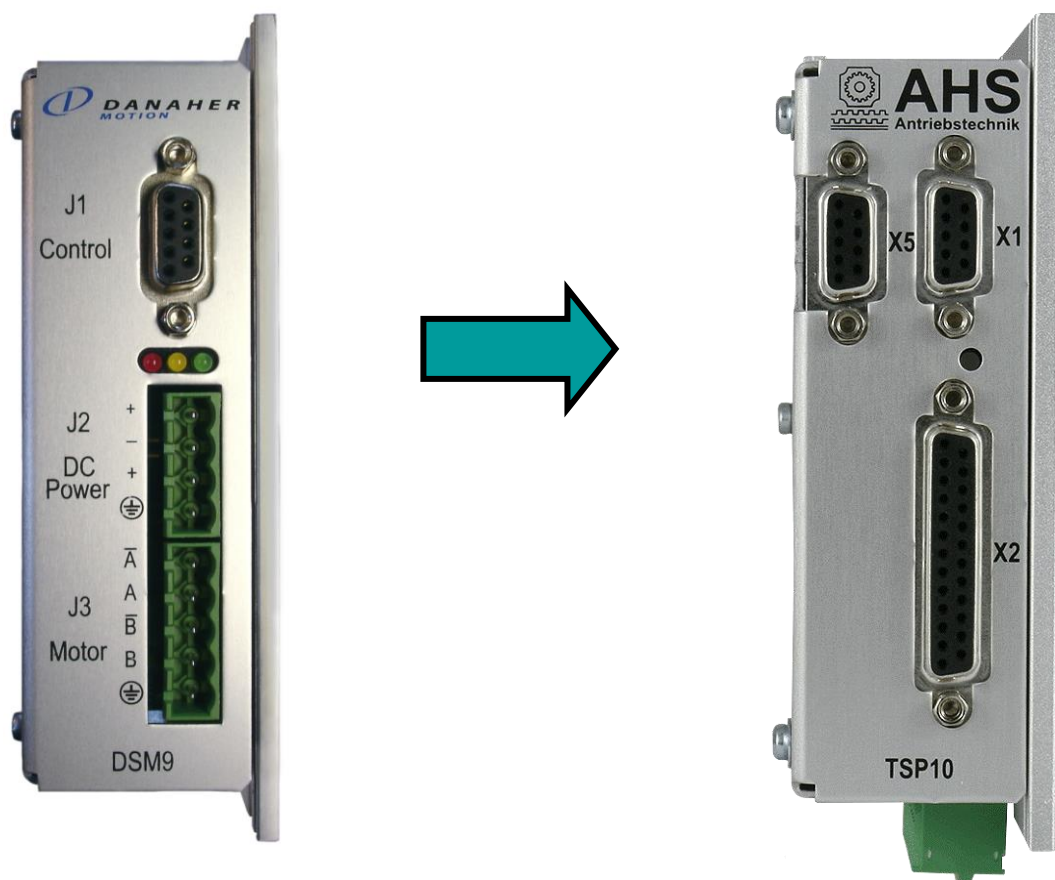


Application Note

Change from DSM9-PB to TSP10-PB



- Technical data
- Connection/ Configuration
- Adjustment values

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**AHS**
Antriebstechnik
Advanced Hybrid Stepper Systems

Types of device

DSM9-PB-01 is replaced by the TSP10-PB0-00-09

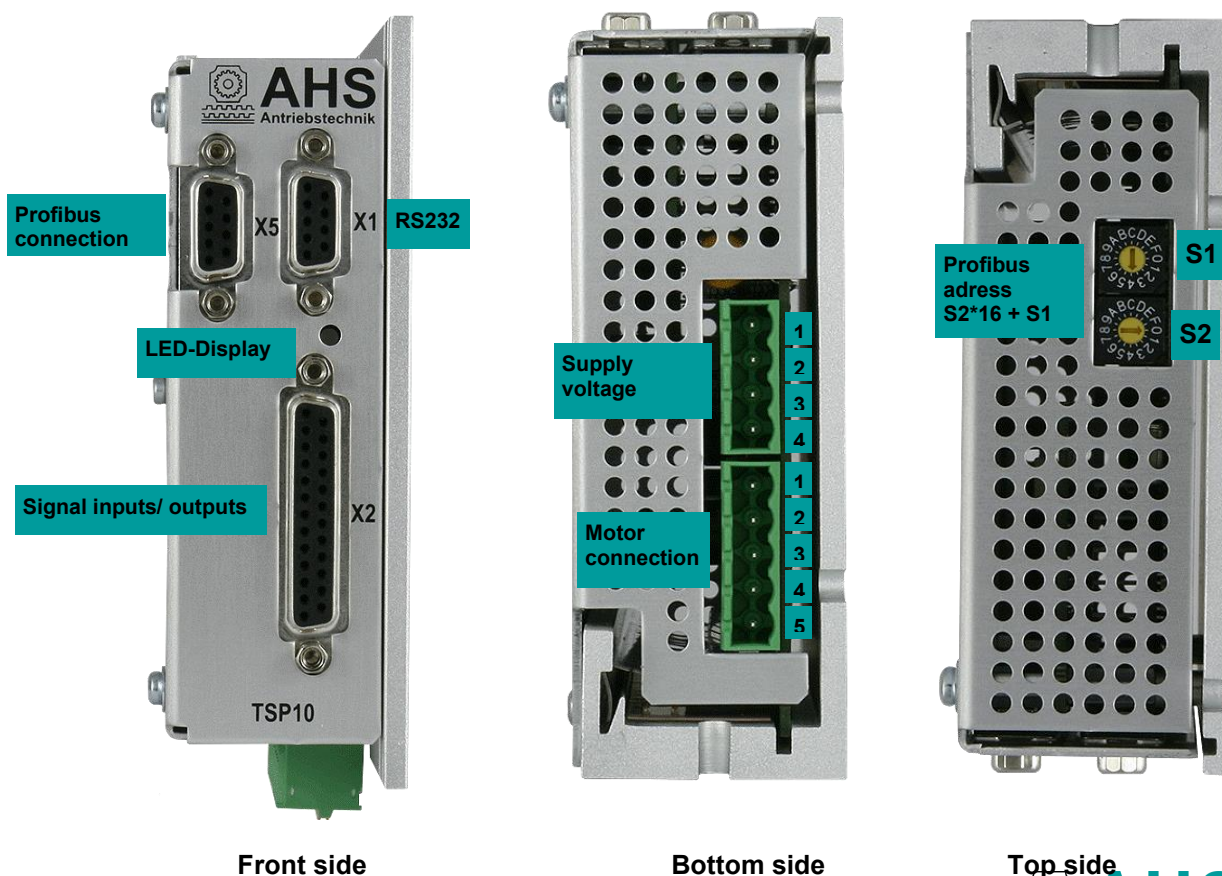
Technical data

	DSM9-PB	TSP10-PB
Supply voltage range	24 - 80 V _{DC}	24 - 74 V _{DC}
Permissible ambient temperature Operation Storage	0 °C bis +50 °C -55 °C bis +70 °C	0 °C bis +50 °C -55 °C bis +70 °C
Motor current @ ambient temperature without heat sink with heat sink	3,1 A @ 25 °C 1,5 A @ 45 °C	3,2 A @ 25 °C 1,6 A @ 45 °C
	6,4 A @ 25 °C 3,1 A @ 45 °C	7,0 A @ 25 °C 3,5 A @ 45 °C
Permissible heat sink temperature (forced cooling may be necessary)	Max. 60 °C	Max. 60 °C
Humidity	10-90 %, non-condensing	10-90 %, non-condensing
Fault protection	Short circuit (phase to phase, phase to zero conductor) and over temperature	Short circuit (phase to phase, phase to zero conductor) and over temperature
Input interface	Profibus	Profibus RS232
Operation lights	three LEDs red, yellow, green	Two-Colour-LED

Connection and adjustment

The design and signal assignment of the connectors for power supply and motor current are identical to DSM9-PB.

	DSM9-PB	TSP10-PB
Supply voltage	Front side, FKCT 2.5/4-ST	Bottom side, FKCT 2.5/4-ST
Motor connection	Front side, FKCT 2.5/5-ST	Bottom side, FKCT 2.5/5-ST
Signal inputs/ outputs	Top side Phoenix connector 5 pole	Front side, Sub-D-Buchse 25 pole
Profibus adress (Step resolution/ motor current)	Upper side, DIP-switch 8p	Upper side, 2x Hex-rotary switch
Jumper	Inside the device	-
RS-232 Interface	-	Front side, Sub-D-Socket 9p
Profibus connection	Front side, Sub-D-Socket 9p	Front side, Sub-D-Socket 9p
When using heat sink	Mounting with 4 screws	Mounting with 3 screws



Operation lights

DSM9-PB: three LEDs (red, yellow, green).

TSP10-PB: a single two-colour-LED.

By the two-colour-LED displays you find the following information:

LED-Display	Description/ Notes
Green, blinking	After turning on the TSP10-BA, the firmware version is indicated as a blinking code. e.g., 1x blinking, stop period, 2x blinking = version 1.2
Orange, briefly on, repeated after 3 s. repeated after 0.3 s.	TSP10-PB powered on but not enabled. Blink code: Ready to switch on Blink code: Supply voltage too low
Green, permanently on	Motor current on, motor stopped.
Orange, blinking	Motor current on, motor is running.
Red, blinking	TSP10-PB turned off because of an error. The blinking codes indicates the type of error. 4 x blinking = over temperature 7 x blinking = over current

Advanced connectivity

Serial interface

Serial interface for the set-up program "TopSuite".

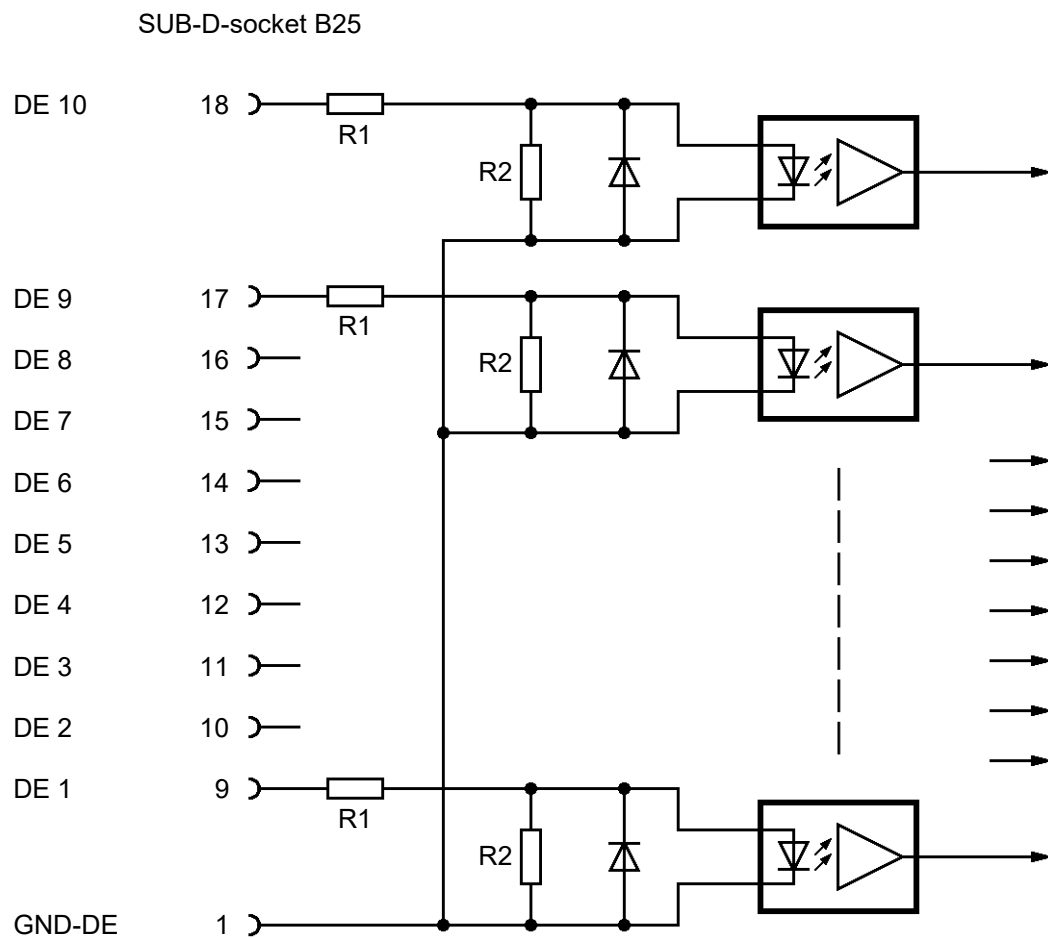
For connecting one 1:1 cable with connector and socket is needed (AHS part number KAB-TSP-232).

Serial Interface (no galvanic isolation)		
Terminal No.	Signal	Description/ Notes
1	DCD	Indicates the connection with the device
2	TXD	Send Data
3	RXD	Received Data
4	DTR	not used
5	GND	Common for all signals

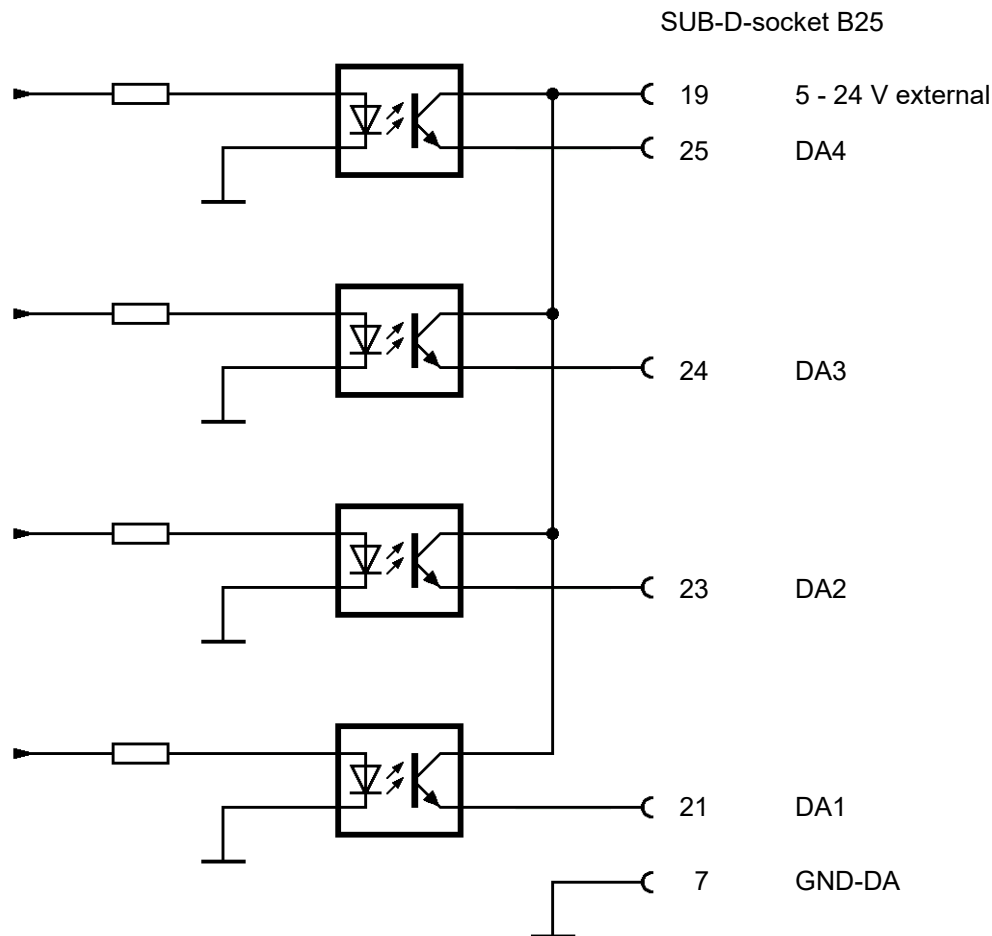
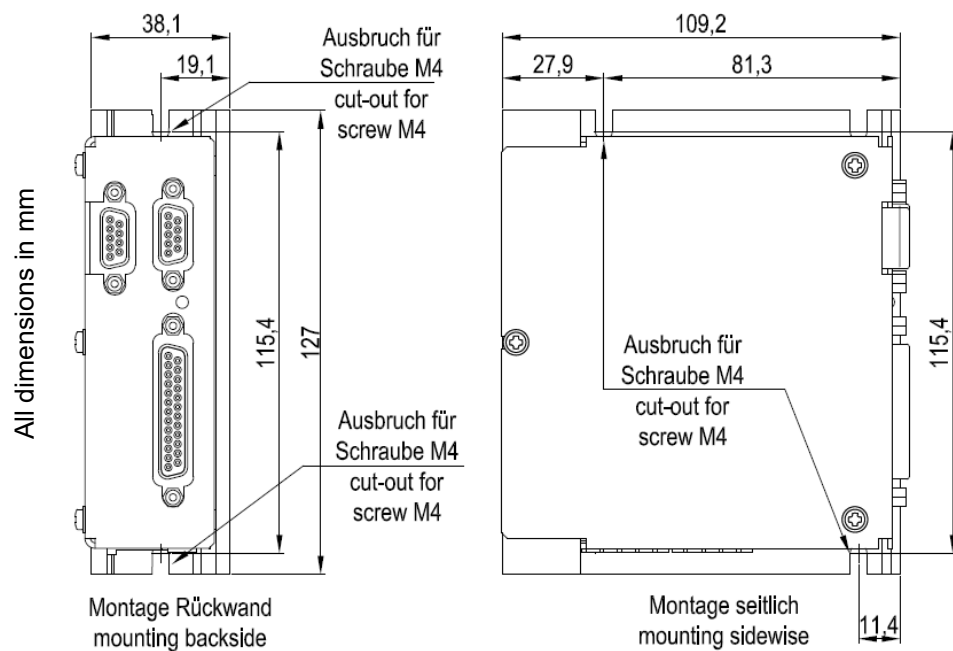
Signal input/ output

The set-up program "TopSuite" is used to configure of the signal outputs.

Signal input/ output (without B9/S25-Serial-Adapter)		
Terminal No.	Signal	Description/ Notes
1	GND-DE	Reference potential for the inputs DE1 - DE10
2	Enable +	Not used
3	Direction +	Not used
4	Direction -	Not used
5	Enable -	Not used
6	Clock -	Not used
7	GND-DA	Reference potential of the outputs DA1 - DA4
8	Clock +	Not used
9	DE1	Not used
10	DE2	Lower limit switch
11	DE3	Upper limit switch
12	DE4	Reference switch
13	DE5	Stopp switch
14	DE6	Not used
15	DE7	Not used
16	DE8	Not used
17	DE9	Not used
18	DE10	Not used
19	5 - 24 V external	Collectors of the output transistors for DA1 - DA4
20	Activated (collector)	Transistor turned on at activated motor current
21	DA1	Digital Output (emitter), default function: Ready
22	Activated (emitter)	Transistor turned on at activated motor current
23	DA2	Digital Output (emitter), default function: Activated
24	DA3	Digital Output (emitter), default function: Target reached
25	DA4	Digital Output (emitter), default function: Error
Case	Shielding	Use shielded cable

Signal input / 25-pin SUB-D-socket

	5 Volt-Input	24 Volt-Input
R1	330 Ohm	2.53 KOhm
R2	1 KOhm	1 KOhm

Signal output / 25-pin SUB-D-socket**Dimensions**

Ordering code

TSP10-PB0-00-09 = Replacement for DSM9-PB-01

TSP10 Type code

T	S	P	1	0	-	B	A	0	-	0	0	-	A	A												
Drive Series			Max. Output Power = 10 A _{peak}																							
Basic Device (Step & Direction, RS232)															BA											
Profibus															PB											
Profinet															PN											
Analog (+/- 10 Volt)															AN											
ModBus															MB											
CAN-Bus															CB											
Standard (no feedback)															0											
Encoder RS422/TTL															E											
Encoder HTL															H											
Encoder Biss-C															C											
Digital Inputs = 24V; Step & Direction = 5V....															00											
Digital Inputs = 5V; Step & Direction = 5V....															05											
Digital Inputs = 24V; Step & Direction = 24V..															24											
															Standard	AA										
															Customization	XX										
															Follow up identifier DSM9...	09										

Note: Not all combinations of the type code are possible.