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Product Description

2 Product Description

Digital tachometers with different voltage levels can be connected to the "digital tachometer interface" (DTI). The inputs are electrically isolated (floating).

- ◆ HTL tachometers (high-voltage transistor logic, 11 V to 30 V)
- ◆ TTL- tachometers (transistor- transistor logic, 5 V)

NOTE

An additional 24 V DC power supply is required for the board.

- ◆ 0.3 A power supply module (option)

The current drain is a function of the encoder type.

DTI board inputs and outputs		
Terminal strip		Description
Input	-X401	TTL
	-X402	HTL
Output	-X403	to the CUVC / CUV ¹⁾ / CU2 control board or to the "tachometer and synchronization board" (TSY)
	-X405	TTL output
24 V ext	-X404	Infeed on the installation side

NOTE

Only one of the two input terminal strips -X401 or -X402, may be used.

Table 2-1 DTI inputs and outputs

¹⁾ only with 6SE7090-0XX84-3DB1

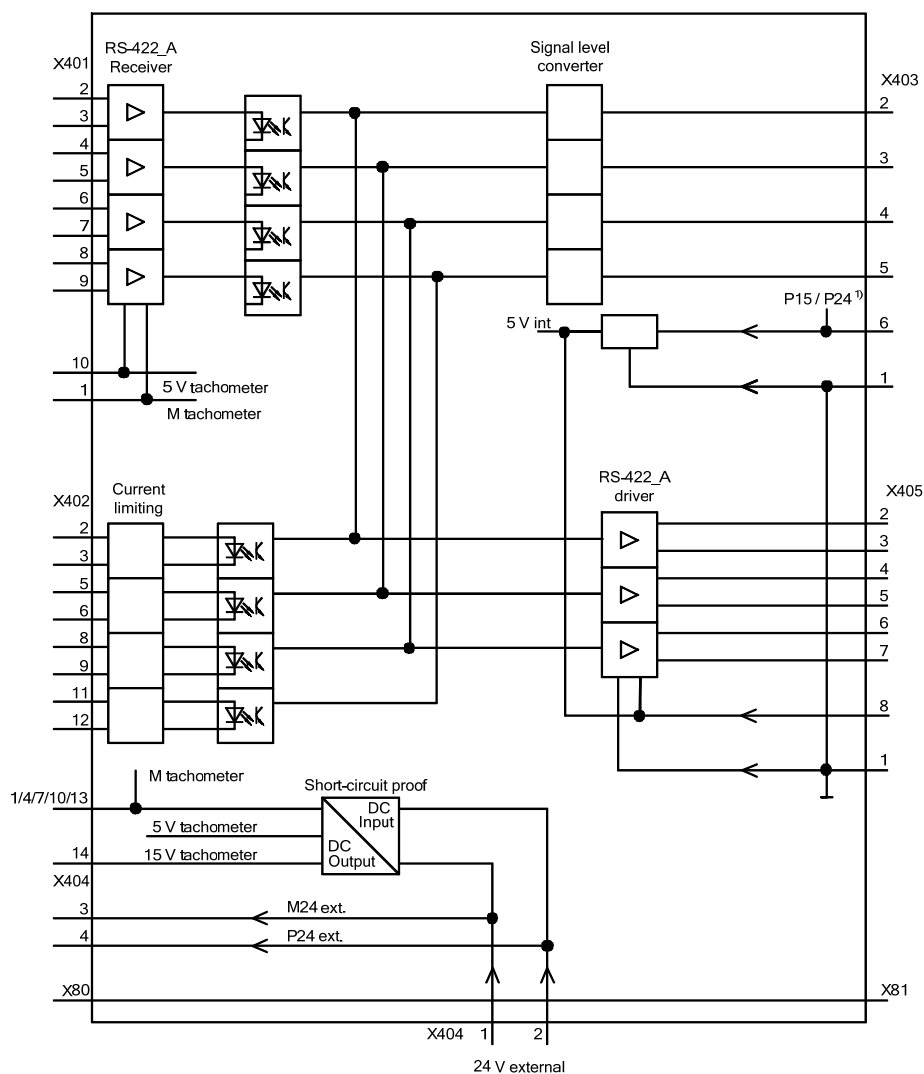


Fig. 2-1 DTI board 6SE7090-0XX84-3DB0 and 6SE7090-0XX84-3DB1

1) P24 only with 6SE7090-0XX84-3DB1

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Installation, Connecting-up

Terminal	Function, information	Cable cross-section	
		[mm ²]	AWG
X403:	CU2 / CUVC / CUVP ¹⁾ or TSY		
1	Reference potential	0,5 to 1,5	20 to 16
2	Pulse track A	0,5 to 1,5	20 to 16
3	Pulse track B	0,5 to 1,5	20 to 16
4	Position track (not evaluated)	0,5 to 1,5	20 to 16
5	Tachometer monitoring track	0,5 to 1,5	20 to 16
6	15 V supply / 24 V supply ¹⁾	0,5 to 1,5	20 to 16
X404:	External 24 V power supply		
1	Reference potential (M24 ext.)	0,5 to 2,5	20 to 14
2	Power supply voltage (P24 ext.)	0,5 to 2,5	20 to 14
3	Reference potential, tachometer (M24 SV T)	0,5 to 2,5	20 to 14
4	Tachometer supply (P24 SV T)	0,5 to 2,5	20 to 14
X405:	TTL output		
1	Reference potential	0,5 to 1,5	20 to 16
2	Pulse track A	0,5 to 1,5	20 to 16
3	Inverted pulse track A	0,5 to 1,5	20 to 16
4	Pulse track B	0,5 to 1,5	20 to 16
5	Inverted pulse track B	0,5 to 1,5	20 to 16
6	Position track	0,5 to 1,5	20 to 16
7	Inverted position track	0,5 to 1,5	20 to 16
8	5 V power supply	0,5 to 1,5	20 to 16
X80	Grounding point / screen ground	With cable lug for M4 bolt	
X81	Grounding point / screen ground	With cable lug for M4 bolt	

Table 3-2 Terminals

¹⁾ only with 6SE7090-0XX84-3DB1

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Start-up

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WARNING



Work must not be done on the module when the power supply is on or the motor is turning.

The safety instructions for MASTERDRIVES are to be complied with.

Prerequisites

- ◆ The standard converter start-up with "closed-loop speed control" has been completed.
- ◆ Check the existing board combination
 - TSY in conjunction with CU1 (SIMOVERT FC)
 - CU2 (SIMOVERT VC) / CUVC (Vector Control) / CUVP 1) (Vector Control Compact PLUS)
- ◆ Determine the tachometer type
- ◆ Select and check the input terminals
 - HTL ↔ -X402 DTI
 - TTL ↔ -X401 DTI
- ◆ Establish and check the connection to the converter (refer to figs. 5-1 and 5-2)
 - **SIMOVERT FC**
DTI -X403 ↔ TSY -X113,-X117 ↔ CU1-X107 (15-V-Signalpegel)
 - **SIMOVERT VC**
DTI -X403 ↔ CU2 -X103 (15 V signal level)
CUVC -X103 (15 V signal level)
CUVP 1) -X104 (15 V signal level)
- ◆ Select the 24 V power supply for the tachometer
 - 0.3 A power supply module (option)
 - Other 24 V power supplies

NOTE

"Potential separation" is required for the external supply.

- ◆ Check that the screen is grounded at both cable ends and that the board is grounded.

1) only with 6SE7090-0XX84-3DB1

Start-up

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- ◆ Set the parameter numbers on the SIMOVERT MASTERDRIVES (refer to the Instruction Manual / Compendium SIMOVERT converter, Section "Parameter list").

SIMOVERT FC **P208**, Src Speed(act)
 P209, Encoder Pulse #
 P090, Brd Slot2
 P091, Brd Slot3

SIMOVERT VC **P208**, Src Speed(act)
 (CU2) **P209**, Encoder Pulse #

SIMOVERT MASTERDRIVES Vector Control (CUVC / CUVP ¹⁾)

P130, Select MotEncod
 P151, Encoder Pulse #

¹⁾ only with 6SE7090-0XX84-3DB1

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Technical Data

5 Technical Data

Board name	DTI (digital tachometer interface)		
Order No.	6SE7090-0XX84-3DB0		
Internal power supply voltage	15 V DC, 160 mA		
External power supply voltage	24 V DC -16 % +25 %, 300 mA in the case of HTL encoder 24 V DC -16 % +25 %, 150 mA in the case of TTL encoder		
Max. loading of encoder supply	HTL encoder: 300 mA TTL encoder: 400 mA		
Input current	HTL encoder: 12 mA TTL encoder: 42 mA		
Output driver current	HTL encoder: 15 mA TTL encoder: 20 mA		
Digital signals, limit frequency	f _{max} 400 kHz		
Operating temperature	0 °C to +55°C		
Storage temperature	-25 °C to +70°C		
Transport temperature	-25 °C to +70°C		
Environmental class for operation	acc. to DIN IEC 721 Part 3-3		
- Humidity:	3K3		
- Pollutant exposure:	3C2		
Pollution level	2	DIN VDE 0110 Part 1 moisture condensation not permissible	
Overvoltage category	II	DIN VDE 0110 Part 2	
Degree of protection	IP00	DIN VDE 0470 Part 1 ≙ EN 60529	
Mechanical stability	DIN IEC 68-2-6		
Dimensions		[mm]	
	Width	160	
	Height	96	
	Depth	46 / 56 1)	

	Frequency range	Constant amplitude of the	
	Hz	deflection mm	acceleration m/s ² (g)
- when stationary	10 to 60	0,35	
	above 60 to 500		49 (5)
- during transport	5 to 9	3,5	
	above 9 to 500		9,8 (1)

1) with 6SE7090-0XX84-3DB1

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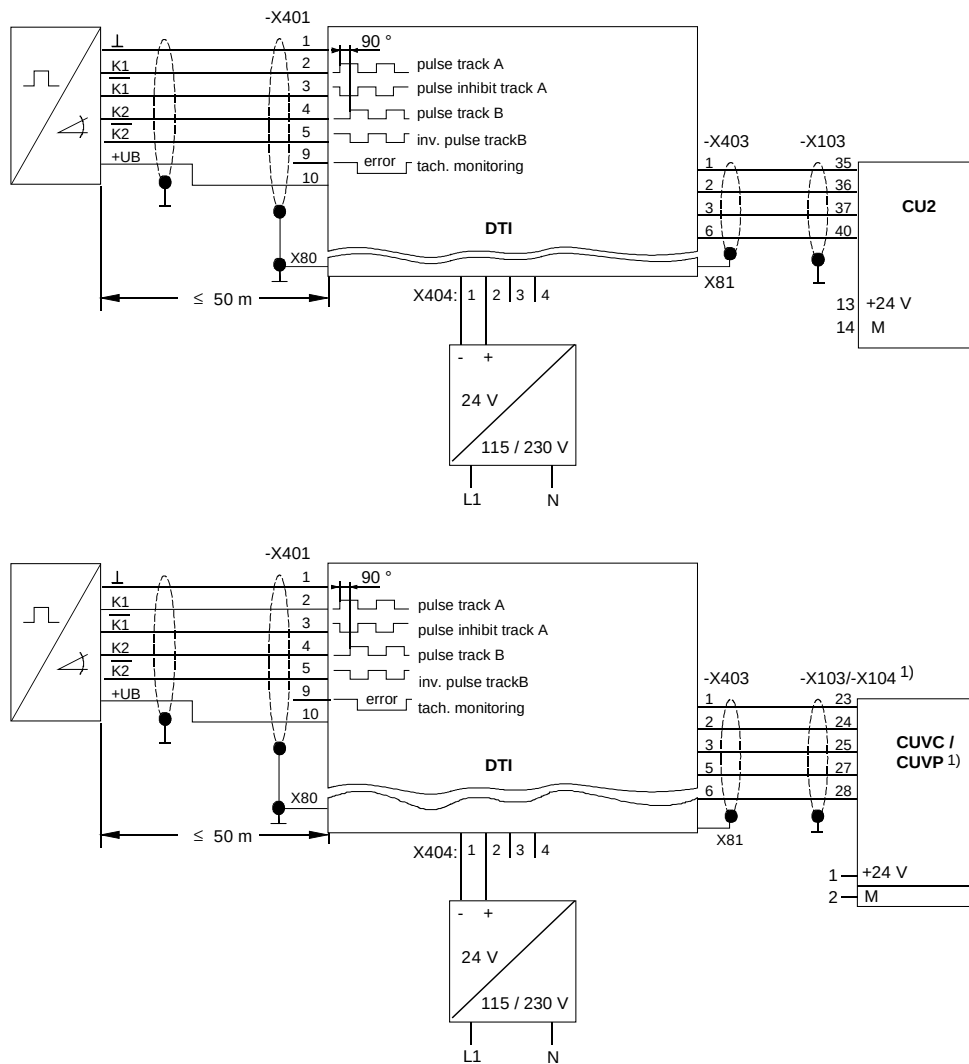


Fig. 5-1 TTL tachometer with inverted pulse track (type H0G9, Fa. Hübner Berlin) and external power supply for SIMOVERT VC

1) only with 6SE7090-0XX84-3DB1

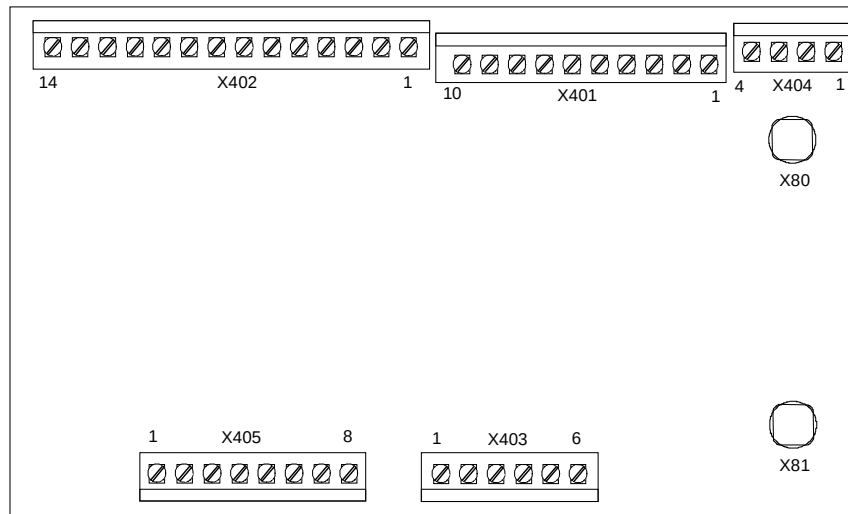


Fig. 5-4 Terminal strip assignment on the DTI board
6SE7090-0XX84-3DB1

NOTE

Order No. 6SE7090-0XX84-3DB0 will be replaced by the compatible successor 6SE7090-0XX84-3DB1.

As an additional function, the successor has an extended voltage range at output X403.6 (see Table 3-2).

The module can therefore also be connected to the Compact PLUS device type.



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