Jetter automation

User Manual

JetMove 1000 – Option Card TD
HDSL Interface

60881532

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Article number 60881532
Revision 1.00
September 2016 / Printed in Germany

NOTE:

This document does not replace the user manual JM-1000. Please note the information about "Measures for your Safety", "Correct Use" and "Responsibility" that you will find in user manual with the Article numbers (60879030 BA DE; 60879032 BA EN).

The TD option card is installed with the JM-1000 servo amplifiers with the option name "TD" in option slot 2 and supplied with the two connecting plugs for X8.1 and X8.2.

Option card "TD" is not available for JM-1432.

Please refer to the online help from JetSym for notes on commissioning and configuration for this encoder connection.

For connection of motors with 1-cable technology we recommend that you use prefabricated and tested servo cables from Jetter.

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1 Option Card TD - HDSL Interface for 1-Cable Technology

1.1 Brief Description

This technology option enables the evaluation of encoder systems according to the HIPERFACE DSL®-protocol. The two encoder wires can be directly integrated in the motor cable. A motor temperature sensor is connected to the encoder inside the motor and evaluated by the encoder. The data is also transmitted via the encoder interface.
As a result, only one cable between the motor and the servo amplifier is needed.

If a motor brake is being used, it is connected directly to the HDSL interface (X8.1 and X8.2).

HIPERFACE DSL ®

HIPERFACE DSL® is a purely digital protocol that manages with a minimum of connecting cables between the servo amplifier and motor-feedback system. The robustness of the protocol enables the connection to the motor-feedback system via the motor connecting cable.

Motor-feedback systems with the HIPERFACE DSL®-interface can be used in all power ranges and greatly simplify the implementation of an encoder system in a drive:

- uniform digital interface (RS-485)
- analog components for the encoder interface become superfluous
- standardized protocol between servo amplifier and encoder in the motor.

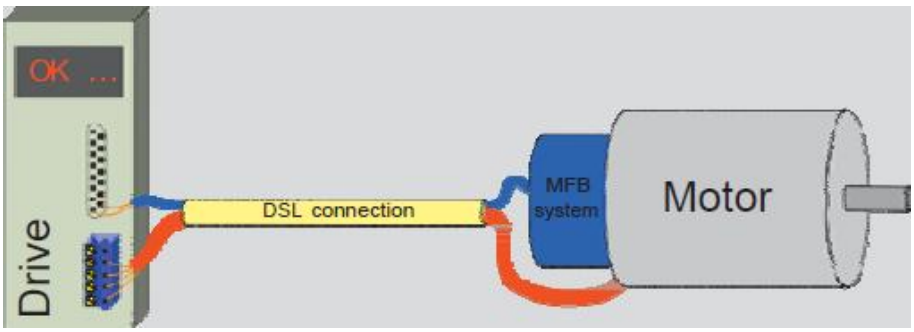


Figure 1.1 Basic Principle HIPERFACE DSL®

1.1.1 Layout

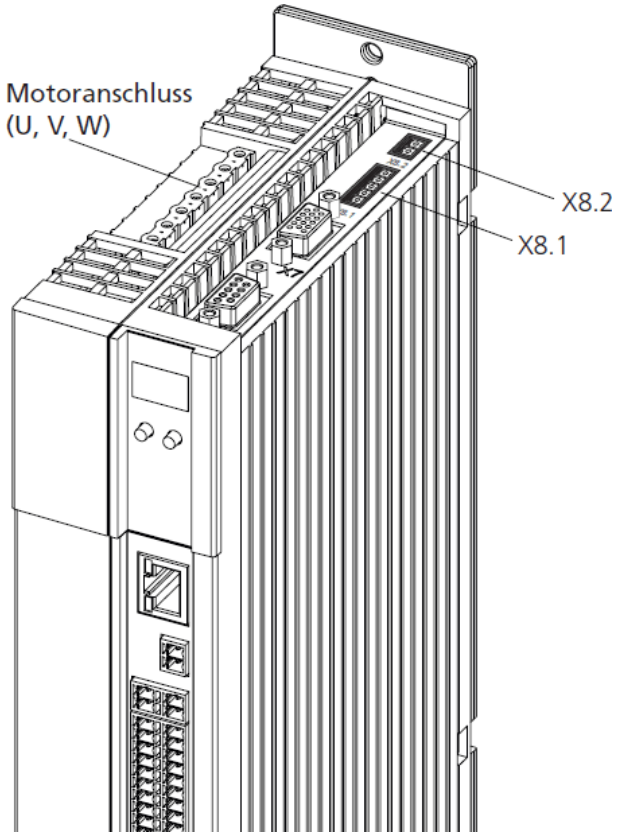


Figure 1.2 HDSL interface layout JM-1000 (X8.1 and X8.2)

1.2 Technical Data Option Card TD - HDSL Interface with JM-1000

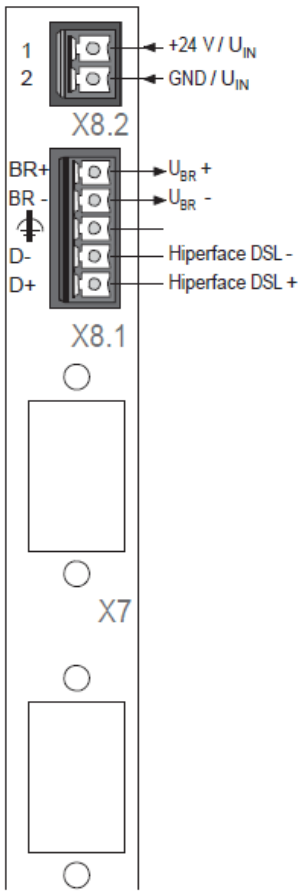
Encoder interface (X8.1)		Connection diagram
Protocol	HIPERFACE DSL® two-wire interface	
Max. current	150 mA	
Motor temperature sensor	is connected and evaluated in the encoder	
Interface	RS-485	
Connection motor brake (X8.1 / X8.2)		
Output voltage U_{BR} (X8.1)	+24 V DC (typ. U_{BR}= U_{IN}– 1.4 V)	
Max. output current	2.0 A	
Supply U_{IN} (X8.2)	+24 V DC (external power supply unit necessary)	
Specification (X8.1)	■ short-circuit-proof ■ integrated overload protection, excess current ■ Power failure monitoring, I < 200 mA typical ■ Functionality like standard motor brake connection (X13) ■ Can also be used as a configurable digital output ■ Connection to the motor is available in the per-assembled encoder/motor cable	
Note: Maximum cable length < 100 m		

Table 1.1: Technical Data HDSL Interface

NOTE:

For brakes with greater current requirement (> 2 A), a relay/contactor must be connected upstream.

1.3 Connection Technology

Jetter servo motors with 1-cable technology with HDSL encoders are suitable for connection to the HDSL interface. The relevant motor cable is prefabricated.

1.3.1 Prefabricated Motor/Encoder Cable

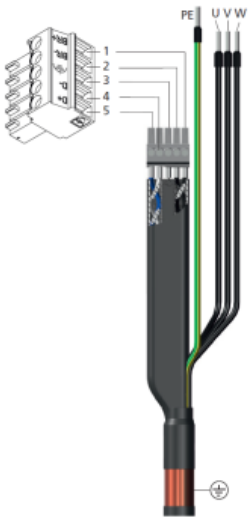
Sketch	Name	Key	Cross-section
	1 = BR+	Connecting motor brake	Cross-section depending on HDSL cable used
	2 = BR-		
	3 = 	Shield connection control side	
	4 = D-	HDSL connection	
	5 = D+		
	PE	Protective conductor	
	U	Motor phase	
	V	Motor phase	
	W	Motor phase	
		Cable outer shield	

Table 1.2: Connections motor/encoder cable on the encoder side

NOTE:

On the motor side, the motor/encoder cable is fitted with a special plug (9-pin socket) matching the Jetter servo motors.

CAUTION!

The specified properties can be promised only if Jetter servo cables, servo amplifiers and servo motors with 1-cable technology are used.

1.3.2 Supplying the Motor Brake

The motor brake on terminal X8.1 needs an external power supply 24 V DC (U_{IN}).
The specification for it can be found in the table below:

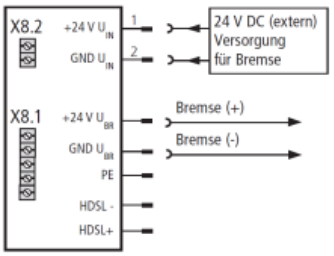
Name	Connection	Specification power supply 24 V DC
X8.2/1 +24 V X8.2/2 GND		▪ short-circuit-proof ▪ Rated voltage U_{IN} = +24 V DC ± 10% stabilized and smoothed ▪ Rated current I_{IN} ≥ 2,1 A min. required ▪ Polarity protection, internal ▪ Connection X8.2/2 (GND) and X8.2/1 (+24V) ▪ $U_{BR} = U_{IN}-\Delta U`$ ($\Delta U`$ typical approx. 1,4 V) ▪ To control a motor holding brake up to I_{BR} = 2,0 A max. ▪ The power supply unit used must have a reliable disconnection from the mains in line with EN 50178 or EN 61800-5-1.

Table 1.3: Power supply 24 V DC for motor brake

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