18.4 Connection to Kollmorgen drive controllers

This chapter contains the information for connecting STOBER synchronous servo motors to drive controllers of the above-named manufacturer which differs from connecting to STOBER drive controllers. You can find all other information about STOBER synchronous servo motors in the respective chapter of this catalog.

STOBER has taken the following measures to minimize the effort of commissioning STOBER motors connected to Kollmorgen drive controllers and avoid errors during parameterization:

- The commutation offset of the motor was set so that calibration by the customer is not necessary.
- Parameter lists are provided on request.

18.4.1 Encoders

Encoders with EnDat 2.1 interface

Encoder model	Code	Measuring method	Recordable revolutions	Resolution	Position values per revolution	Periods per revolution	MTTF [years]	PHF [h]
EnDat 2.1 EQN 1125 FMA	M2	Optical	4096	13 bit	8192	Sin/cos 512	> 57	$\leq 2 \times 10^{-6}$
EnDat 2.1 EQN 1125	Q4	Optical	4096	13 bit	8192	Sin/cos 512	> 57	$\leq 2 \times 10^{-6}$

Notes

- The encoder code is a part of the type designation of the motor.
- FMA = Version with fault exclusion for mechanical coupling.
- Multiple revolutions of the motor shaft can be recorded only using multi-turn encoders.

18.4.2 Possible combinations with drive controllers

The following table shows the possible combinations of STOBER synchronous servo motors with drive controllers from Kollmorgen depending on the encoder model.
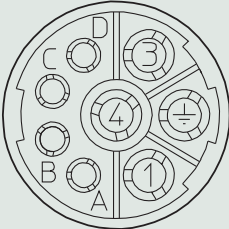
Drive controller		Servostar S300/S400/S600/S700
Drive controller code		FE
Connection plan ID		442311
Encoder	**Encoder code**	
EnDat 2.1 EQN 1125 FMA	M2	EZ
EnDat 2.1 EQN 1125	Q4	EZ
Resolver	R0	EZ

The encoder and drive controller codes are a part of the type designation of the motor.
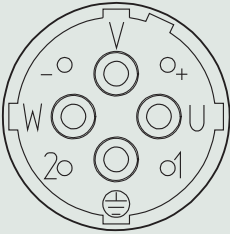
18.4.3 Connection assignment of the power plug connector

The size and connection plan of the power plug connector depend on the size of the motor. The colors of the connecting wires inside the motor are specified in accordance with IEC 60757.

Plug connector size con.23

Connection diagram	Pin	Connection	Color
	1	U phase	BK
	3	W phase	RD
	4	V phase	BU
	A	Brake +	RD
	B	Brake −	BK
	C		
	D		
	⏚	Grounding conductor	GNYE
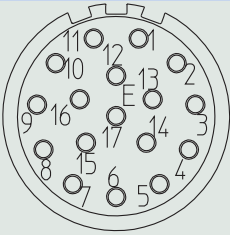
Plug connector size con.40 (1.5)

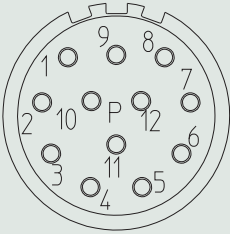| Connection diagram	Pin	Connection	Color
	U	U phase	BK
	V	V phase	BU
	W	W phase	RD
	+	Brake +	RD
	–	Brake –	BK
	1		
	2		
	⏚	Grounding conductor	GNYE

18.4.4   Connection assignment of the encoder plug connector

The size and connection assignment of the encoder plug connectors depend on the model of encoder installed and the size of the motor.

EnDat 2.1 encoder with sin/cos incremental signals, plug connector size con.23

Connection diagram	Pin	Connection	Color
	1	B – (Sin –)	RDBK
	2	0 V GND	WHGN
	3	A – (Cos –)	YEBK
	4	Up +	BNGN
	5	Data +	GY
	6		
	7	1TP1 (Temperature sensor +)	BK/RD
	8	Clock +	VT
	9	B + (Sin +)	BUBK
	10	0 V sense	WH
	11	A + (Cos +)	GNBK
	12	Up sense	BU
	13	Data –	PK
	14	1TP2 (Temperature sensor –)	WH/WH
	15	Clock –	YE
	16		
	17		

Resolver, plug connector size con.23

Connection diagram	Pin	Connection	Color
	1		
	2	1TP1 (Temperature sensor +)	BK/RD
	3	S4 Sin +	BU
	4	S3 Cos +	BK
	5	R2 Ref +	YEWH
	6	1TP2 (Temperature sensor –)	WH/WH
	7	S2 Sin –	YE
	8	S1 Cos –	RD
	9	R1 Ref –	RDWH
	10		
	11		
	12		