

FEEDBACK FEATURES

E1 TTL ENCODER

Motor size	TC 40 - 60 - 80	
Nominal Voltage	V	5±5%
Nominal current	mA	200
Max Frequency	Khz	200
Electronic type	LINE DRIVER AM 26 LS31	
Zero impulse	ONE AT A LAP	
N° of pulses revolution	ppr	2000
Resolution	cpr	8000
N° of commutation signal	3 DIFFERENTIAL	
System accuracy	arc sec	± 50
Rotor inertia	Kg cm ²	0.01

Please note: for all motors size **TC 40** - all motors size **TC 60** with encoder TTL the maximum theoretical acceleration is 80.000 rad/s²

R1 RESOLVER 2 poles

Motor size		TC40	TC60 - TC80
Nominal Voltage	Vrms	7±5%	7±5%
Nominal current	mA	50	50
Phase shift		+5°	+3°
Minimum sin amplitude	mVrms	20	20
Frequency	kHz	10	10
Poles number		2	2
Trasformer ratio		0.5 ± 5%	0.5 ± 5%
Input impedance	ohm	160	130 + j280
Output impedance	ohm	130	425 + j755
System accuracy		± 10'	± 10'
Rotor inertia	Kg cm ²	0.006	0.03

A1 ABSOLUTE MULTITURN ENCODER

Motor size	TC40 - TC60 - TC80	
Nominal Voltage	V	7 ÷ 12
Nominal current	mA	60
Max frequency fon Sin Cos signal	Khz	65
Interface type	Hiperface	
N° absolute singleturn steps	4096 (12 Bits)	
N° absolute multiturn steps	4096 (12 Bits)	
N° of sin/cos periods per revolution	128	
System accuracy	arc sec	± 320
Rotor inertia	Kg cm ²	0.0045

BRAKE FEATURES

		TC 40	TC 60	TC 80	
Static Torque @20°C	Nm	0,4	2	4,5	
Moment of Inertia	Kg cm ²	0,008	0,050	0,220	
Rated Current	A	0,34	0,46	0,5	
Input Power	W	8	11	12	
Engaging Time	ms	6	6	7	
Release Time	ms	10	25	35	
Operating Voltage	24 Vdc +6% - 10% Stabilized				

THERMAL PROTECTION FEATURES

PT 1000

Thermal protection features

Type	PT 1000-R8/2-2F
Sensor	Sensor RTD (Platinum Resistance Temperature Detectors) according to DIN EN 60751
Temperature range	from -40 °C to 250 °C
Accuracy	$\Delta t = \pm (0,3 + 0,04t) \text{ } ^\circ\text{C}$

°C	Resistance (Ω)
-40	843
-30	882
-20	922
-10	961
0	1000
10	1039
20	1078
30	1117
40	1155
50	1194
60	1232
70	1271
80	1309
90	1347
100	1385
110	1423
120	1461
130	1498
140	1536
150	1573
160	1611

WIRING MOTOR CONNECTIONS

POWER CONNECTOR for TC 40 ONLY

PIN	FUNCTION
1	Phase U
2	Phase V
3	Phase W
4	PE
5	Brake 24V (#)
6	Brake 0V (#)

(#) Optional

FEEDBACK CONNECTOR for TC 40 ONLY

E1 TTL ENCODER

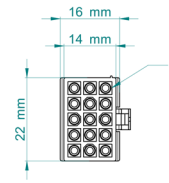
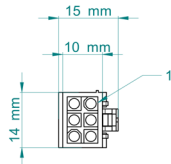
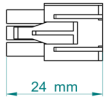
PIN	FEEDBACK FUNCTION
1	Ch A
2	Ch /A
3	Ch B
4	Ch /B
5	Ch Z
6	Ch /Z
7	Hall U
8	Hall /U
9	Hall V
10	Hall /V
11	Hall W
12	Hall /W
13	5 Vdc
14	0 Vdc
15	Shield

R1 RESOLVER

PIN	FEEDBACK FUNCTION
1	Sin+
2	Sin-
3	Cos+
4	Cos-
5	Ref+
6	Ref-
7	-
8	-
9	-
10	-
11	-
12	-
13	-
14	-
15	Shield

A1 ABSOLUTE ENCODER

PIN	FEEDBACK FUNCTION
1	Sin
2	/Sin
3	Cos
4	/Cos
5	DATA
6	/DATA
7	-
8	-
9	-
10	-
11	-
12	-
13	7-12 Vdc
14	0 Vdc
15	Shield



SEE IT BEFORE IT HAPPENS

WIRING MOTOR CONNECTIONS

CONNECTORS WITH G2 CONNECTION for ALL OTHER MODELS

POWER CONNECTOR

FEEDBACK CONNECTOR

TTL ENCODER E1

RESOLVER R1

ABSOLUTE ENCODER A1

PIN	FUNCTION	PIN	FEEDBACK FUNCTION	PIN	FEEDBACK FUNCTION	PIN	FEEDBACK FUNCTION
1	Phase U	1	Hall W	1	-	1	-
2	PE	2	Hall U	2	-	2	-
3	Phase W	3	0 Vdc	3	-	3	0 Vdc
4	Phase V	4	5Vdc	4	-	4	7-12 Vdc
A	Brake 24V (#)	5	Ch /A	5	/Sin	5	/Sin
B	Brake 0V (#)	6	Ch A	6	Sin +	6	Sin
C	PT 1000 (+)	7	Ch /Z	7	/Ref	7	/DATA
D	PT 1000 (-)	8	Ch Z	8	Ref	8	DATA
(#) Optional		9	Hall V	9	-	9	-
		10	Shield	10	Shield	10	Shield
		11	Ch /B	11	/Cos	11	/Cos
		12	Ch B	12	Cos	12	Cos
		13	Hall /W	13	-	13	-
		14	Hall /V	14	-	14	-
		15	Hall /U	15	-	15	-
		16	-	16	-	16	-
		17	-	17	-	17	-

CONNECTORS WITH H2 CONNECTION for ALL OTHER MODELS

POWER CONNECTOR

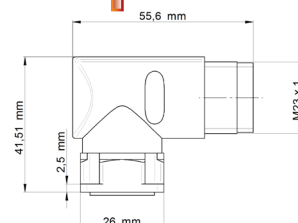
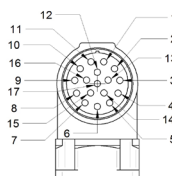
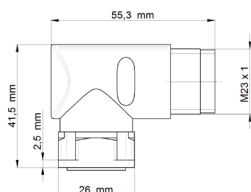
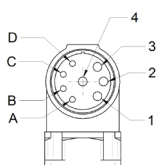
FEEDBACK CONNECTOR

TTL ENCODER E1

RESOLVER R1

ABSOLUTE ENCODER A1

PIN	FUNCTION	PIN	FEEDBACK FUNCTION	PIN	FEEDBACK FUNCTION	PIN	FEEDBACK FUNCTION
1	Phase U	1	Hall W	1	-	1	-
2	PE	2	Hall U	2	-	2	-
3	Phase W	3	0 Vdc	3	-	3	0 Vdc
4	Phase V	4	5Vdc	4	-	4	7-12 Vdc
A	Brake 24V (#)	5	Ch /A	5	/Sin	5	/Sin
B	Brake 0V (#)	6	Ch A	6	Sin +	6	Sin
C		7	Ch /Z	7	/Ref	7	/DATA
D		8	Ch Z	8	Ref	8	DATA
(#) Optional		9	Hall V	9	-	9	-
		10	Shield	10	Shield	10	Shield
		11	Ch /B	11	/Cos	11	/Cos
		12	Ch B	12	Cos	12	Cos
		13	Hall /W	13	-	13	-
		14	Hall /V	14	-	14	-
		15	Hall /U	15	-	15	-
		16	PT 1000 (+)	16	PT 1000 (+)	16	PT 1000 (+)
		17	PT 1000 (-)	17	PT 1000 (-)	17	PT 1000 (-)



CABLES SPECIFICATIONS

STATIC POWER CABLES for TC 40 ONLY

PIN/AMP	COLOUR	FUNCTION	Power free wire cable for general purpose	For cable order
1	Grey	Phase U		Length (mm) Order code 3000 003108010620 5000 003108010622 10000 003108010624
2	Black	Phase V		
3	Brown	Phase W		
4	Yellow/Green + Shield	PE		
5	Red	Brake +		
6	Black	Brake -		

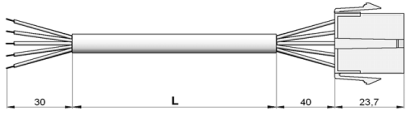
MOTOR SIDE PIN	COLOUR	FUNCTION	Power free wire cable for LITE PRO E40	For cable order
6	Black1	Brake -		Length (mm) Order code 3000 003108010714 5000 003108010716 10000 003108010718
5	Red	Brake +		
4	Yellow/Green+Shield	PE		
3	Brown	Phase W		
2	Black	Phase V		
1	Grey	Phase U		

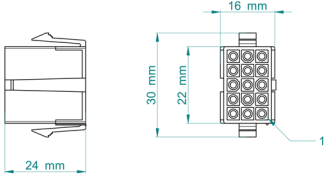
MOTOR SIDE PIN	COLOUR	FUNCTION	DRIVE SIDE PIN	Power free wire cable for LITE PRO E65	For cable order
L1	Black	GND	2		Length (mm) Order code 3000 003108010726 5000 003108010728 10000 003108010730
L2	Red	+UP	1		
3	Brown	Phase W	5		
2	Black	Phase V	4		
1	Grey	Phase U	3		
6	Black1	Brake-	T3		
5	Red	Brake+	T2		
4	Yellow/Green+Shield	PE	T1		

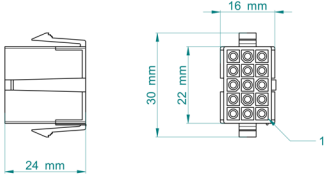
SEE IT BEFORE IT HAPPENS

CABLES SPECIFICATIONS

STATIC SIGNAL CABLES for TC 40 ONLY


PIN/AMP	COLOUR	FUNCTION	Signal free wire cable general purpose	For cable order	
1	Green	According to feedback		Length (mm)	Order code
2	Yellow			3000	003108010556
3	Violet			5000	003108010558
4	Black			10000	003108010560
5	Pink				
6	Gray				
7	Yellow/White				
8	Yellow/Brown				
9	White/Green				
10	Brown/Green				
11	Grey/Pink				
12	Red/Blu				
13	Brown				
14	White				
15	Shield (Black)				

MOTOR SIDE PIN	COLOUR	FUNCTION	Signal cable for LITE PRO E40	For cable order	
15	Shield (Black)	Shield		Length (mm)	Order code
14	White	GND		3000	003108011140
13	Brown	5 Vdc		5000	003108011142
12	Red/Blue	Hall /W		10000	003108011144
11	Grey/Pink	Hall W			
10	Brown/Green	Hall /V			
9	White/Green	Hall V			
8	Yellow/Brown	Hall /U			
7	White/ Yellow	Hall U			
6	Grey	Ch /Z			
5	Pink	Ch Z			
4	Black	Ch /B			
3	Violet	Ch B			
2	Yellow	Ch /A			
1	Green	Ch A			

T7MOTOR SIDE PIN	COLOUR	FUNCTION	DRIVE SIDE PIN	Signal cable for LITE PRO E65	For cable order	
14	White	GND	1		Length (mm)	Order code
15	Shield	Shield	1		3000	003108011152
13	Brown	5 Vdc	2		5000	003108011154
11	Grey/Pink	Hall W	5		10000	003108011156
9	Yellow	Hall V	6			
7	Grey	Hall U	7			
3	Violet	Ch B	3			
1	Green	Ch A	4			
T	Blue	CAN - low	8			
T1	Yellow	CAN - high	9			
T2	Grey	Din 2 / Dout 0	10			
T3	Brown	Din 1	11			
T4	Pink	Din 0	12			
T5	Green	Ain 0	13			
T6	Black	GND	14			
T7	Red	24 Vdc	15			

CABLES SPECIFICATIONS

STATIC POWER CABLES for ALL OTHER MODELS

PIN/M23	COLOUR	FUNCTION	Power free wire cable for general purpose	For cable order	
1	Gray	According to G2 or H2 connection		Lenght (mm)	Order code
2	Yellow/Green + Shield			3000	003108010650
3	Brown			5000	003108010652
4	Black			10000	003108010654
A	Red				
B	Black				
C	White				
D	Blu				

MOTOR SIDE PIN	COLOUR	FUNCTION	Power free wire cable for LITE PRO E40	For cable order	
1	Grey	U		Lenght (mm)	Order code
2	Green/Yellow	PE		3000	003108010720
3	Brown	W		5000	003108010722
4	Black	V		10000	003108010724
A	Red	BK+			
B	Black1	BK-			
CASE	Shield1	SHIELD			

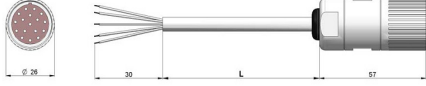
MOTOR SIDE PIN	COLOUR	FUNCTION	DRIVE SIDE PIN	Power free wire cable for LITE PRO E65	For cable order	
GL1	Black	GND	2		Lenght (mm)	Order code
GL2	Red	+UP	1		3000	003108010732
4	Black	V	4		5000	003108010734
3	Brown	W	5		10000	003108010736
1	Grey	U	3			
D	Black1	PT1000-	T3			
C	Red	PT1000+	T2			
2	Green/Yellow	PE	T1			

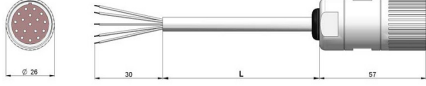
MOTOR SIDE PIN	COLOUR	FUNCTION	Power free wire cable for LITE PRO E20 - E25	For cable order	
1	Black1	U		Lenght (mm)	Order code
2	Green/Yellow	PE		3000	003108005080
3	Black3	W		5000	003108005104
4	Black2	V		10000	003108005106
A	Black5	BK+			
B	Black6	BK-			
C	Black7	PT			
D	Black8	PT			

SEE IT BEFORE IT HAPPENS

CABLES SPECIFICATIONS

STATIC SIGNAL CABLES for ALL OTHER MODELS

PIN/M23	COLOUR	FUNCTION	Signal free wire cable for general purpose	For cable order	
1	Gray/Pink	According to feedback		Lenght (mm)	Order code
2	Yellow/White			3000	003108010500
3	White			5000	003108010502
4	Brown			10000	003108010504
5	Yellow				
6	Green				
7	Grey				
8	Pink				
9	White/Green				
10	Shield – Wire				
11	Black				
12	Violet				
13	Red/Blue				
14	Brown/Green				
15	Yellow/Brown				
16	Red				
17	Blue				

MOTOR SIDE PIN	COLOUR	FUNCTION	Signal cable for LITE PRO E40 - E20 - E25	For cable order	
1	Grey/Pink	Hall W		Lenght (mm)	Order code
2	White/Yellow	Hall U		3000	003108011146
3	White	GND		5000	003108011148
4	Brown	+5Vdc		10000	003108011150
5	Yellow	A/			
6	Green	A			
7	Grey	Z/			
8	Pink	Z			
9	White/Green	Hall V			
10	Shield1	Shield			
11	Black	B/			
12	Violet	B			
13	Red/Blue	Hall W/			
14	Brown/Green	Hall V/			
15	Yellow/Brown	Hall U/			
16	Red	-			
17	Blue	-			

SEE IT BEFORE IT HAPPENS

CABLES SPECIFICATIONS

STATIC SIGNAL CABLES for ALL OTHER MODELS

MOTOR SIDE PIN	COLOUR	FUNCTION	DRIVE SIDE PIN	Signal cable for LITE PRO E65	For cable order	
12	Blue	B	3			
9	Brown	HV	6		Lenght (mm)	Order code
6	Green	A	4		3000	003108011158
4	Red	5Vdc	2		5000	003108011160
3	Black	0V	1		10000	003108011162
2	Grey	HU	7			
1	White	HW	5			
T	Blue	CAN-LOW	8			
T1	Yellow	CAN-HIGH	9			
T2	Grey	DIN2/DOUT0	10			
T3	Brown	DIN1	11			
T4	Pink	DINO	12			
T5	Green	+AIN0	13			
T6	Black	GND	14			
T7	Red	+24Vdc	15			

DYNAMIC LAYING CABLES SPECIFICATIONS

POWER CABLES for ALL SERVOMOTORS MODELS up to 14A

MOTOR SIDE PIN	COLOUR	Power free wire cable for general purpose	For cable order
1	Black1		Length (mm)
2	Green/Yellow		5000
3	Black3		10000
4	Black2		Order code
A	Black5		003108007524
B	Black6		003108020011
C	Black7		
D	Black8		

POWER CABLES for ALL SERVOMOTORS MODELS more than 14A and up to 20A

MOTOR SIDE PIN	COLOUR	Power free wire cable for general purpose	For cable order
1	Black1		Length (mm)
2	Green/Yellow		3000
3	Black3		5000
4	Black2		10000
A	Black5		Order code
B	Black6		003108005080
C	Black7		003108005104
D	Black8		003108005106

DYNAMIC LAYING CABLES SPECIFICATIONS

SIGNAL CABLES for ALL SERVOMOTORS MODELS

MOTOR SIDE PIN	COLOUR	Signal free wire cable for general purpose	For cable order	
1	Grey/Pink		Length (mm)	Order code
2	Red		5000	003108011110
3	Blue1		10000	003108011112
4	Red1			
5	Yellow			
6	Green			
7	Grey			
8	Pink			
9	White/Green			
10	Shield2			
11	Black			
12	Violet			
13	Red/Blue			
14	Brown/Green			
15	Blue			
16	Brown			
17	White			

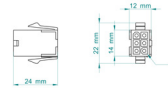
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CONNECTOR SPECIFICATIONS

FLYING CONNECTORS AMP for TC 040 ONLY

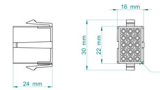
Power Connector
AMP 172160-1 + 6 PIN 171637-1

order code 007117000304



Signal connector
AMP 172163-1 + 15 PIN 170361-1

order code 007117000306



FLYING CONNECTORS M23 for ALL OTHER MODELS

Power connector pin included
BSTA108NN00580236000 + 4 PIN 60.003.11 FM/2mm
CRIMP.0,35-2,5 SPRING + 4 PIN 60.001.11 FM/1mm
CRIMP.0,14-1 SPRING

order code 007117000472



Signal connector pin included
ASTA014NN00410235000 17p/FM + 17 PIN 60.011.11
FM/1mm CRIMP.0,14-1

order code 007117000462



SEE IT BEFORE IT HAPPENS

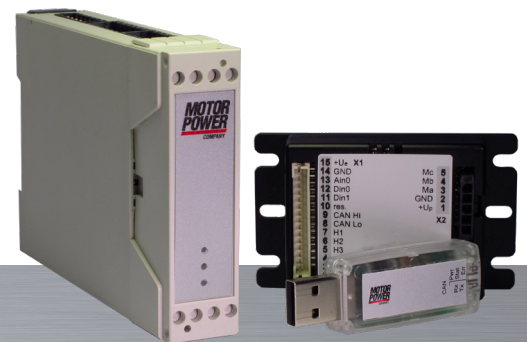
The LITE PRO series is represented by the extremely compact 4-quadrants drives perfect matched to control the brushless servomotors TC Series. This series features as standard CanOpen interface and a complete programmable version with integral Motion Process Unit, that allows stand alone and network architecture operation.

FEATURES

- > 4 MODELS
- > STANDARD FEEDBACK TTL ENCODER AND HALL SENSOR
- > DIGITAL I/O: UP TO 8 DIGITAL INPUTS AND 1 OR 2 DIGITAL OUTPUTS CUSTOMIZABLE WITH SEVERAL BUILT-IN FUNCTIONS
- > CONTROL: STANDARD PI CONTROL LOOP
- > SERVO MODES: TORQUE, VELOCITY AND POSITION WITH S-CURVE PROFILE
- > INTERNAL SCRIPT
- > EXTREME COMPACT DESIGN
- > USB PROGRAMMING KEY

INTERFACE

- > ANALOG VELOCITY AND TORQUE COMMAND $\pm 10V$
- > CANopen



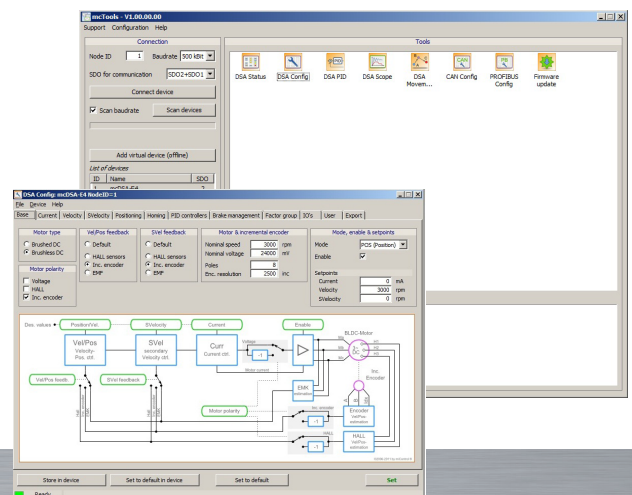
COMPACT AND PROFITABLE

PRODUCT DATA

FEATURE	UNITS	LPRO E65	LPRO E40	LPRO E20	LPRO E25
Input voltage	VDC	48			
Efficiency at rated power	%	>95			
Auxiliary supply voltage	VDC	9 ... 30			
Continuous current	Arms	4	8	24	28
Peak current	Arms	12	24	40	80
Ambient operating temperature	°C	0 to + 40°			
Maximum humidity	%	5÷85% not condensing			
Mounting method		Backplane	Wall mounting DIN Rail	Wall mounting	Wall mounting
Dimensions	LxWxH mm	52,5x41x11	110x22,5x77	111x100x30	111x100x30
Weight	gr	18	110	250	380
Digital IN		4	4	4	8
Digital OUT		2	1	1	2

LITE PRO USER INTERFACE

- > EASY AND INTUITIVE PC SOFTWARE ALLOWS A FAST PARAMETERIZATION OF THE LITE PRO
- > SIMPLE SCOPE
- > SCRIPT EDITING



SEE IT BEFORE IT HAPPENS

**MOTOR
POWER**
COMPANY