



TETRA & TETRA COMPACT BRUSHLESS SERVOMOTORS

MOTORS

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COMPANY



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WELCOME TO MOTOR POWER COMPANY

The brushless servomotor is a product of tried-and-tested success that Motor Power Company manufacturers thanks to in-company know-how acquired during years of practical experience with designing and building motors.

TETRA COMPACT belongs to the low power range and stands out for its constructional shape; TETRA is the brushless servomotor with excellent efficiency along with high torque rate, thanks to the intrinsic technology that gets the most out of the magnetic material. The original construction of the rotor part (patented) permits two possible inertia executions on the same motor size by ensuring an optimum dynamic response even with different load masses. These servomotors are particularly suitable for positioning tasks in industrial robotic, machine tools, actuators and machine automation with demanding requirements in terms of dynamics and stability. Motor Power Company proposes not just components but complete motion solutions, combining brushless servomotors with a series of drives with high flexibility and exceptional capabilities in a wide range of applications.

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BRUSHLESS

TECHNOLOGY

FEATURES AND BENEFITS

Synchronous brushless servomotor, permanently excited

Rated output power from 60W to 8kW

Maximum servomotor speed up to 5000rpm

Insulation class F (155 °C)

IP 65 on motor body

Ral 9005 black powder coating

Temperature protection by PT 1000 (excluding TC 40)

Shaft balancing class G 2,5 according ISO 1940

Smooth or keyed shaft

Built-in feedback resolver 2 poles, TTL Encoder, Absolute Multiturn Encoder (Hiperface)

Cable flange with connectors for TC 40

90° round circular turnable connectors (IP 67) for all other models

Optional electromagnetic permanent-holding brake. Zero backlash

Optional shaft sealing



TETRA - TETRA COMPACT

PRODUCT LINEUP

Servomotor Type	Rated Output Power	Rated Torque	Peak Torque	Rated Voltage	Rated Speed	Drive Type
	[W]	[Nm]	[Nm]	[V]	[rpm]	
TC 40 0,16 32	60	0,19	0,48	24 Vdc	3000	LITE PRO E 65 C
TC 40 0,16 01	60	0,19	0,48	48 Vdc	3000	LITE PRO E 65 C
TC 40 0,32 01	100	0,32	0,96	48 Vdc	3000	LITE PRO E 65 C
TC 40 0,32 21	100	0,32	0,96	230 Vac	3000	FLEXI PRO 1D5 2 A
TC 60 0,65 21	200	0,64	1,95	230 Vac	3000	FLEXI PRO 1D5 2 A
TC 60 1,3 21	370	1,18	3,9	230 Vac	3000	FLEXI PRO 003 2 A
TC 60 1,3 15	370	1,18	3,9	400 Vac	3000	FLEXI PRO 003 4 D
TC 80 1,5 21	480	1,53	4,5	230 Vac	3000	FLEXI PRO 006 2 A
TC 80 1,5 15	480	1,53	4,5	400 Vac	3000	FLEXI PRO 003 4 D
TC 80 2,8 21	800	2,55	8,4	230 Vac	3000	FLEXI PRO 006 2 A
TC 80 2,8 15	800	2,55	8,4	400 Vac	3000	FLEXI PRO 006 4 D
TC 80 4 15	1068	3,4	12,0	230 Vac	3000	FLEXI PRO 006 2 A
TC 80 4 17	1068	3,4	12,0	400 Vac	3000	FLEXI PRO 003 4 D
TC 100 3,2 21	820	2,61	11,0	230 Vac	3000	FLEXI PRO 006 2 A
TC 100 3,2 15	820	2,61	11,0	400 Vac	3000	FLEXI PRO 006 4 D
TC 100 5,6 15	1320	4,2	22,0	400 Vac	3000	FLEXI PRO 012 4 A
TC 100 8 15	1820	5,8	33,0	400 Vac	3000	FLEXI PRO 012 4 D
T 115 3 21	840	2,7	9,0	230 Vac	3000	FLEXI PRO 006 2 A
T 115 3 15	840	2,7	9,0	400 Vac	3000	FLEXI PRO 006 4 D
T 115 5,2 14	1300	4,1	15,6	230 Vac	3000	FLEXI PRO 013 2 A
T 115 5,2 15	1300	4,1	15,6	400 Vac	3000	FLEXI PRO 006 4 D
T 115 7 15	1650	5,3	21,0	230 Vac	3000	FLEXI PRO 013 2 A
T 115 7 17	1650	5,3	21,0	400 Vac	3000	FLEXI PRO 006 4 D
T 115 9,2 15	2000	6,4	27,6	230 Vac	3000	FLEXI PRO 013 2 A
T 115 9,2 17	2000	6,4	27,6	400 Vac	3000	FLEXI PRO 006 4 D
T 115 11 15	2300	7,3	33,0	230 Vac	3000	FLEXI PRO 013 2 A
T 115 11 17	2300	7,3	33,0	400 Vac	3000	FLEXI PRO 006 4 D
T 142 12 15	2700	8,6	31,0	230 Vac	3000	FLEXI PRO 020 2 A
T 142 12 17	2700	8,6	31,0	400 Vac	3000	FLEXI PRO 012 4 D
T 142 16,5 15	3500	11,1	42,0	230 Vac	3000	FLEXI PRO 020 2 A
T 142 16,5 17	3500	11,1	42,0	400 Vac	3000	FLEXI PRO 012 4 D
T 142 21 15	4100	13,1	55,0	230 Vac	3000	FLEXI PRO 020 2 A
T 142 21 17	4100	13,1	55,0	400 Vac	3000	FLEXI PRO 012 4 D
T 142 25,5 15	5000	15,9	65,0	230 Vac	3000	FLEXI PRO 030 2 A
T 142 25,5 17	5000	15,9	65,0	400 Vac	3000	FLEXI PRO 030 4 D
T 180 22,5 17	4700	15,0	63,0	400 Vac	3000	FLEXI PRO 030 4 D
T 180 35 17	6600	21,0	95,0	400 Vac	3000	FLEXI PRO 030 4 D

FLEXI PRO DRIVE TYPE



FPRO	006	2A	AP	1	XXX
Drive Name	Rating	AC and Controller input Power Supply	Interface Options	Analog Input	Special Specification
	1	2	3	4	5

1

	Rating	
	120/240 VAC	
	Cont. [A rms]	Peak [A rms]
1D5	1.5	4.5
003	3	9
4D5	4,5	18
006	6	18
008	8	28
010	10	28
013	13	28
020	20	48
024	24	48

	Rating	
	400/480 VAC	
	Cont. [A rms]	Peak [A rms]
003	3	9
006	6	18
012	12	24
024	24	72
030	30	90

2

AC and Controller Input Power Supply	
2A	Input Single Phase 120L - L VAC +10% -15% 50/60Hz
	Input Single Phase 240L - L VAC +10% -15% 50/60Hz
	Input Three Phase 120 - 240L - L VAC +10% -15% 50/60Hz
4D	AC Input Power Supply:
	- Input Three Phase 400L - L VAC +10% -15% 50/60Hz
	- Input Three Phase 480L - L VAC +10% -15% 50/60Hz
	24VDC input for control board power supply

3

Interface Options

AF - Analog Voltage/Pulse Train Ref & CANopen® & USB & RS 232
 EC - EtherCAT, USB, RS232
 EB - EtherCAT, USB (two analog inputs only)

4

Analog Input

1 - One Analog input, 16 bit
 2 - Two Analog inputs, 14 bit each

LITE PRO DRIVE TYPE



1	Feedback	E = encoder
2	Model (output current) Arms	20 = 24/40 25 = 28/80 40 = 8/24 65 = 4/12
3	Fielbus	C = CANopen

TETRA COMPACT 40 RATINGS AND SPECIFICATIONS

TIME RATING	Continuous	AMBIENT TEMPERATURE	0 to 40 °C
INSULATION CLASS	F	AMBIENT HUMIDITY	5 to 85% (non-condensing)
ENCLOSURE	Totally enclosed. Self-cooled	POLES	8
PROTECTION CLASS	IP 65 standard on the body	THERMAL PROTECTION	Not available
INSULATION SYSTEM UL /CSA	cURus , DV155J File nr.:E216686	CE certified	

TC 40 0,16 32 TC 40 0,16 01 TC 40 0,32 01 TC 40 0,32 21

Continuous stall torque	M_0	Nm	0,21	0,21	0,34	0,34
Peak torque	M_{max}	Nm	0,48	0,48	0,96	0,96
Nominal torque	M_n	Nm	0,19	0,19	0,32	0,32
Rated voltage	U_n	V	24 Vdc	48 Vdc	48 Vdc	230 Vac
Nominal power	P_N	W	60	60	100	100
Continuous stall current	I_0	A_{rms}	4,23	2,23	3,61	0,65
Maximum current	I_{max}	A_{rms}	9,67	5,09	10,18	1,82
Nominal current	I_N	A_{rms}	3,96	2,09	3,5	0,62
Nominal working speed	n_N	min^{-1}	3000	3000	3000	3000
Maximum working speed 24VDC	n_{max}	min^{-1}	5000	-	-	-
Maximum working speed 48VDC	n_{max}	min^{-1}	-	5000	5000	-
Maximum working speed 230VAC	n_{max}	min^{-1}	-	-	-	5000
Torque constant	k_t	Nm/A_{rms}	0,050	0,094	0,094	0,526
Voltage constant	K_{eu-v}	$V_{rms}/Krpm$	3,0	5,7	5,7	31,8
Winding resistance	R_{20u-v}	Ohm	1,0	3,2	1,1	36,9
Winding inductance	L_{qu-v}	mH	0,7	2,5	1,42	44
Electrical time constant	T_e	ms	0,70	0,78	1,29	1,19
Thermal resistance	$^{\circ}C/W$	$^{\circ}C/W$	2,38	2,38	2,30	2,30
Mechanical time constant	T_m	ms	1,62	1,47	0,88	0,92
Rotor inertia (*)	J_M	$Kgcm^2$	0,027	0,027	0,047	0,047
Mass without holding brake	m	Kg	0,4	0,4	0,54	0,54
Mass with holding brake	m	Kg	0,54	0,54	0,68	0,68
Mass without holding brake with absolute encoder	m	Kg	0,41	0,41	0,55	0,55
Mass with holding brake with absolute encoder	m	Kg	0,61	0,61	0,75	0,75
Maximum axial shaft load	N		30 (applied on the shaft's center)			
Maximum radial shaft load	N		180 (applied on the shaft's center)			

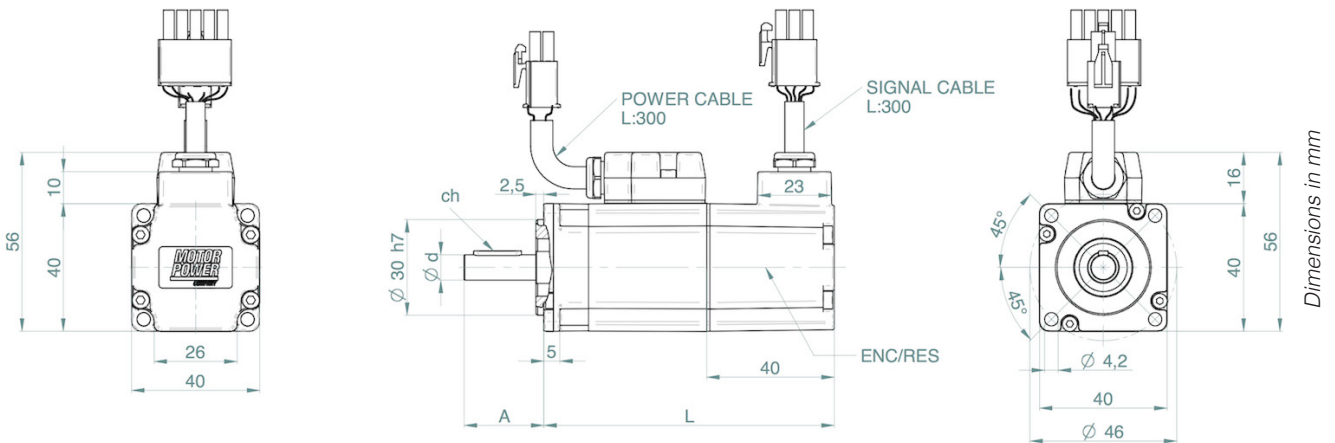
Rated output with 250 x 250 x 6 mm aluminum heat sink flange coupling - Derating must be considered if the oil seal is applied - IP 54 standard shaft bushing (*) without brake and without feedback

TETRA COMPACT 40 DIMENSIONS

TC 40 0,16 32 TC 40 0,16 01 TC 40 0,32 01 TC 40 0,32 21

L * (Without Brake)	mm	91	91	109	109
L * (With Brake)	mm	122	122	140	140
A	mm	25	25	25	25
d	mm	8 (h6)	8 (h6)	8 (h6)	8 (h6)
ch	mm	3x3x15	3x3x15	3x3x15	3x3x15

* Motor's length increases of 10 mm with absolute encoder feedback

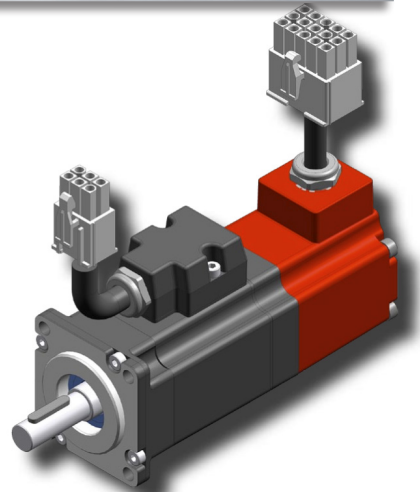


Power connector 6 PIN AMP 172168 - Signal connector 15 PIN AMP 172171

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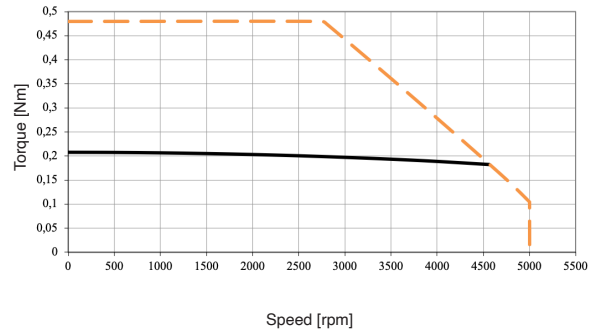
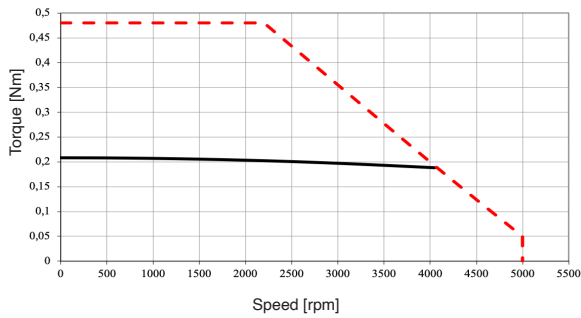


TETRA COMPACT 40 TORQUE / SPEED CHARTS



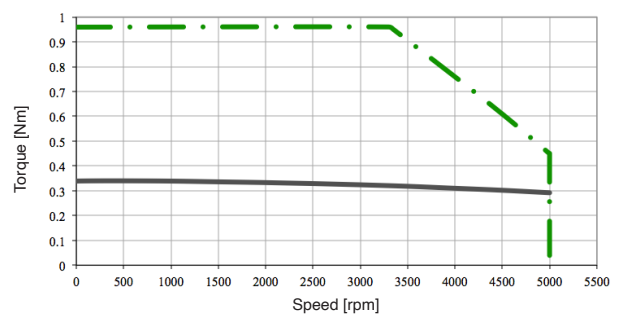
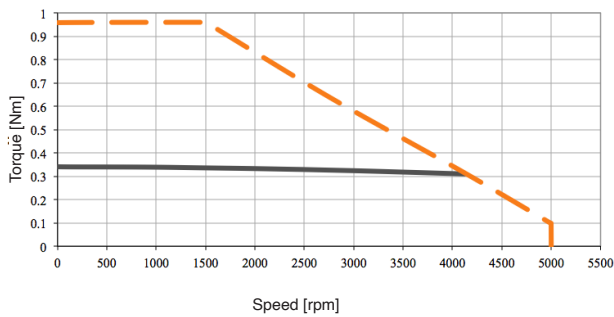
TETRA COMPACT 40 0,16 32

TETRA COMPACT 40 0,16 01



TETRA COMPACT 40 0,32 01

TETRA COMPACT 40 0,32 21



SEE IT BEFORE IT HAPPENS



- Continuous duty @ rated voltage
- 24 Vdc
- 48 Vdc
- 230 Vac
- 400 Vac

TETRA COMPACT 60 RATINGS AND SPECIFICATIONS

TIME RATING	Continuous	AMBIENT TEMPERATURE	0 to 40 °C
INSULATION CLASS	F	AMBIENT HUMIDITY	5 to 85% (non-condensing)
ENCLOSURE	Totally enclosed. Self-cooled	POLES	8
PROTECTION CLASS	IP 65 standard on the body	THERMAL PROTECTION	PT 1000
INSULATION SYSTEM UL /CSA	cURus , DV155J File nr.:E216686	CE certified	

	TC 60 0,65 21	TC 60 1,3 21	TC 60 1,3 15
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			TC 60 0,65 21	TC 60 1,3 21	TC 60 1,3 15
Continuous stall torque	M_0	Nm	0,69	1,31	1,31
Peak torque	M_{max}	Nm	1,95	3,9	3,9
Nominal torque	M_n	Nm	0,64	1,18	1,18
Rated voltage	U_n	V	230	230	400
Nominal power	P_N	W	200	370	370
Continuous stall current	I_0	A_{rms}	1,31	2,49	1,44
Maximum current	I_{max}	A_{rms}	3,71	7,41	4,29
Nominal current	I_N	A_{rms}	1,25	2,31	1,33
Nominal working speed	n_N	min^{-1}	3000	3000	3000
Maximum working speed 230VAC	n_{max}	min^{-1}	5000	5000	3900
Maximum working speed 400VAC	n_{max}	min^{-1}	-	-	5000
Torque constant	k_t	Nm/A_{rms}	0,526	0,526	0,910
Voltage constant	K_{eu-v}	$V_{rms}/Krpm$	31,8	31,8	55,0
Winding resistance	R_{20u-v}	Ohm	12,9	4,2	14,4
Winding inductance	L_{qu-v}	mH	26,5	14,9	41,8
Electrical time constant	T_e	ms	2,05	3,55	2,90
Thermal resistance	$^{\circ}C/W$	$^{\circ}C/W$	1,89	1,41	1,41
Mechanical time constant	T_m	ms	0,91	0,55	0,63
Rotor inertia (*)	J_M	$Kgcm^2$	0,13	0,24	0,24
Mass without holding brake	m	Kg	1,1	1,5	1,5
Mass with holding brake	m	Kg	1,5	1,9	1,9
Maximum axial shaft load		N	70 (applied on the shaft's center)		
Maximum radial shaft load		N	220 (applied on the shaft's center)		

Rated output with 250 x 250 x 6 mm aluminum heat sink flange coupling - Derating must be considered if the oil seal is applied - IP 54 standard shaft bushing (*) without brake and without feedback

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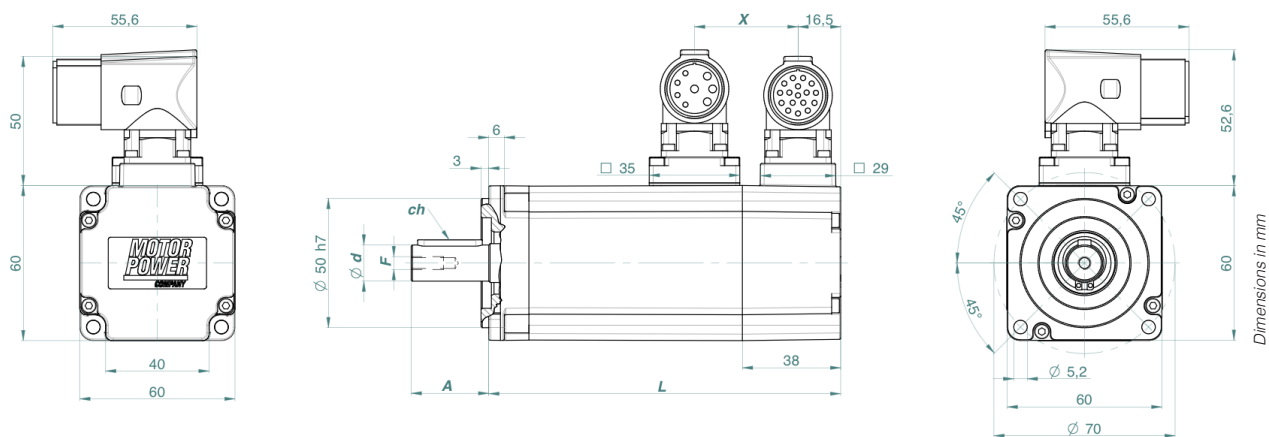
TETRA COMPACT 60 DIMENSIONS

TC 60 0,65 21

TC 60 1,3 21

TC 60 1,3 15

L (Without Brake)	mm	111	136	136
L (With Brake)	mm	148	173	173
A	mm	23	30	30
d	mm	11 (h6)	14 (h6)	14 (h6)
ch	mm	4x4x18	5x5x25	5x5x25
F	mm	M4x10	M5x12,5	M5x12,5
X (Without Brake)	mm	40	40	40
X (With Brake)	mm	77	77	77

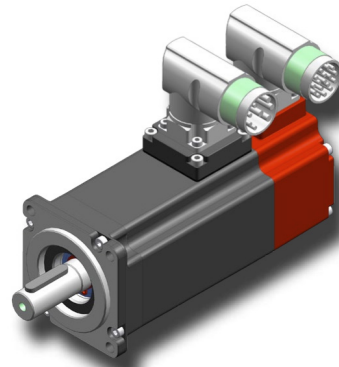


Power connector 4+4 PIN M23 turnable BEDC 110 - Signal connector 17 PIN M23 turnable AEDC 139

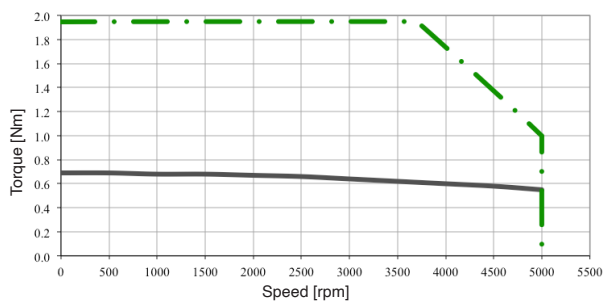
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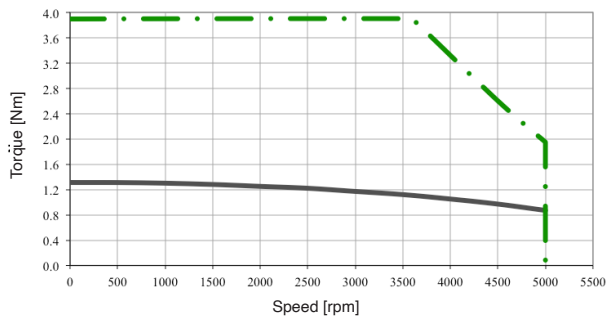
TETRA COMPACT 60 TORQUE /SPEED CHARTS



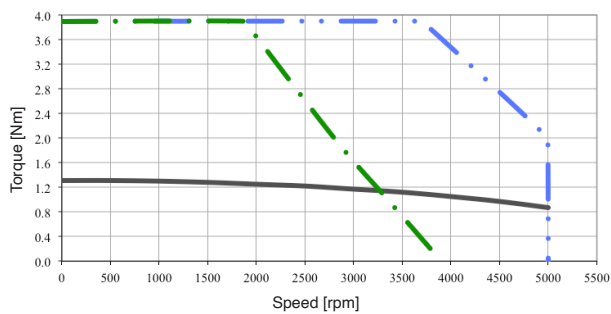
TETRA COMPACT 60 0,65 21



TETRA COMPACT 60 1,3 21



TETRA COMPACT 60 1,3 15



- Continuous duty @ rated voltage
- 24 Vdc
- 48 Vdc
- 230 Vac
- 400 Vac

TETRA COMPACT 80 RATINGS AND SPECIFICATIONS Sizes 1,5 - 2,8

TIME RATING	Continuous	AMBIENT TEMPERATURE	0 to 40 °C
INSULATION CLASS	F	AMBIENT HUMIDITY	5 to 85% (non-condensing)
ENCLOSURE	Totally enclosed. Self-cooled	POLES	8
PROTECTION CLASS	IP 65 standard on the body	THERMAL PROTECTION	PT 1000
INSULATION SYSTEM UL /CSA	cURus , DV155J File nr.:E216686	CE certified	

TC 80 1,5 21 TC 80 1,5 15 TC 80 2,8 21 TC 80 2,8 15

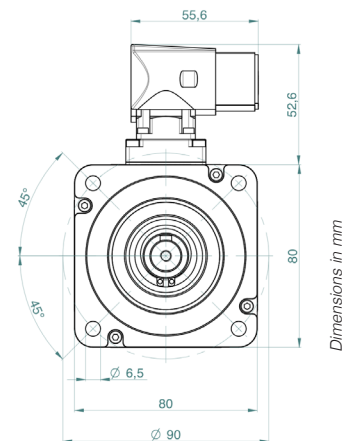
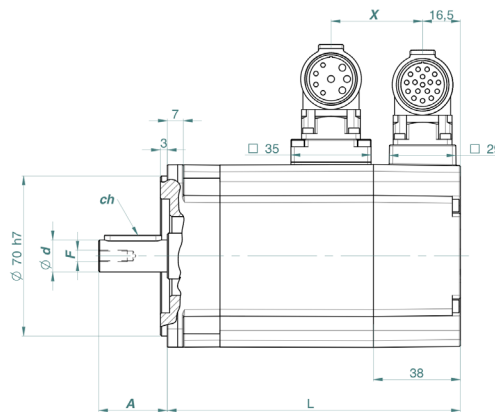
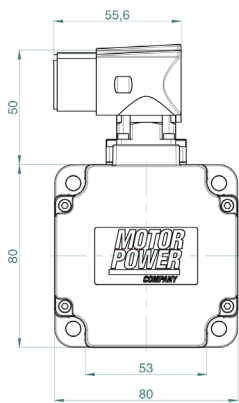
Continuous stall torque	M_0	Nm	1,74	1,74	2,96	2,96
Peak torque	M_{max}	Nm	4,5	4,5	8,4	8,4
Nominal torque	M_n	Nm	1,53	1,53	2,55	2,55
Rated voltage	U_n	V	230	400	230	400
Nominal power	P_N	W	480	480	800	800
Continuous stall current	I_0	A_{rms}	3,3	1,91	6,03	3,48
Maximum current	I_{max}	A_{rms}	8,55	4,95	15,97	9,23
Nominal current	I_N	A_{rms}	2,99	1,73	4,99	2,88
Nominal working speed	n_N	min^{-1}	3000	3000	3000	3000
Maximum working speed 230VAC	n_{max}	min^{-1}	5000	3900	5000	3900
Maximum working speed 400VAC	n_{max}	min^{-1}	-	5000	-	5000
Torque constant	k_t	Nm/A_{rms}	0,526	0,910	0,526	0,910
Voltage constant	K_{eu-v}	$Vrms/Krpm$	31,8	55,0	31,8	55,0
Winding resistance	R_{20u-v}	Ohm	2,65	6,5	0,99	3,0
Winding inductance	L_{qu-v}	mH	12,8	22,2	4,4	13,2
Electrical time constant	T_e	ms	4,8	3,4	4,4	4,4
Thermal resistance	$^{\circ}C/W$	$^{\circ}C/W$	1,67	1,67	1,32	1,32
Mechanical time constant	T_m	ms	0,80	0,75	0,62	0,63
Rotor inertia (*)	J_M	$Kgcm^2$	0,64	0,64	1,16	1,16
Mass without holding brake	m	Kg	2,25	2,25	3,05	3,05
Mass with holding brake	m	Kg	2,97	2,97	3,77	3,77
Maximum axial shaft load		N	110 (applied on the shaft's center)			
Maximum radial shaft load		N	350 (applied on the shaft's center)			

Rated output with 250 x 250 x 6 mm aluminum heat sink flange coupling - Derating must be considered if the oil seal is applied - IP 54 standard shaft bushing (*) without brake and without feedback

TETRA COMPACT 80 DIMENSIONS Sizes 1,5 - 2,8

		TC 80 1,5 21	TC 80 1,5 15	TC 80 2,8 21	TC 80 2,8 15
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L (Without Brake)	mm	128	128	153	153
L (With Brake)	mm	170 [173 with A1 feedback]	170 [173 with A1 feedback]	195 [198 with A1 feedback]	195 [198 with A1 feedback]
A	mm	30	30	40	40
d	mm	14 (h6)	14 (h6)	19 (h6)	19 (h6)
ch	mm	5x5x25	5x5x25	6x6x30	6x6x30
F	mm	M5x12,5	M5x12,5	M6x16	M6x16
X (Without Brake)	mm	40	40	40	40
X (With Brake)	mm	82	82	82	82



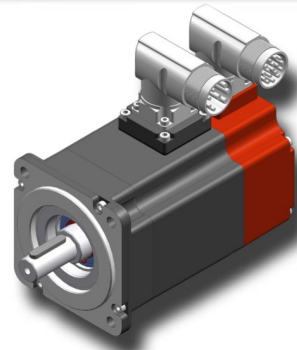
Dimensions in mm

Power connector 4+4 PIN M23 turnable BEDC 110 - Signal connector 17 PIN M23 turnable AEDC 139

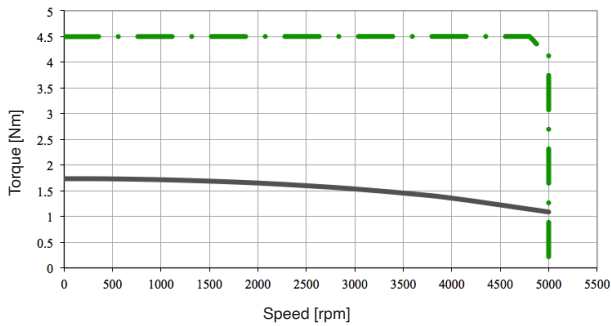
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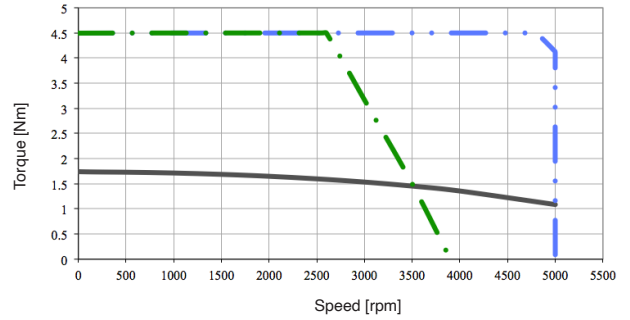
TETRA COMPACT 80 TORQUE /SPEED CHARTS - Sizes 1,5 - 2,8



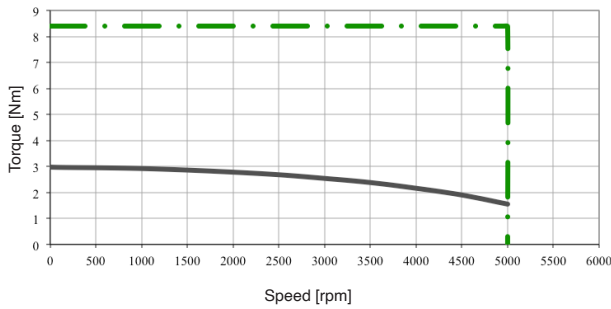
TETRA COMPACT 80 1,5 21



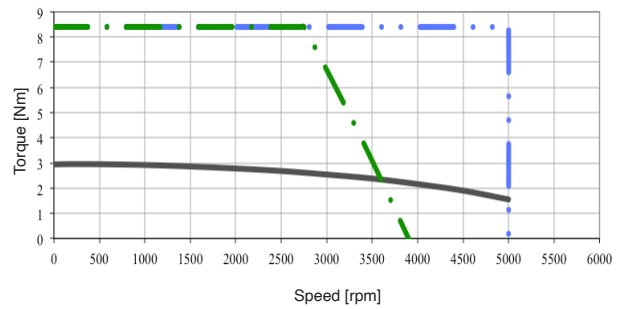
TETRA COMPACT 80 1,5 15



TETRA COMPACT 80 2,8 21



TETRA COMPACT 80 2,8 15



SEE IT BEFORE IT HAPPENS



- Continuous duty @ rated voltage
- - - 24 Vdc
- - - 48 Vdc
- . - . 230 Vac
- . . - . 400 Vac

TETRA COMPACT 80 RATINGS AND SPECIFICATIONS - Size 4

TIME RATING	Continuous	AMBIENT TEMPERATURE	0 to 40 °C
INSULATION CLASS	F	AMBIENT HUMIDITY	5 to 85% (non-condensing)
ENCLOSURE	Totally enclosed. Self-cooled	POLES	8
PROTECTION CLASS	IP 65 standard on the body	THERMAL PROTECTION	PT 1000
INSULATION SYSTEM UL /CSA	cURus , DV155J File nr.:E216686	CE certified	

TC 80 4 15 TC 80 4 17

Continuous stall torque	M_0	Nm	4,0	4,0
Peak torque	M_{max}	Nm	12,0	12,0
Nominal torque	M_n	Nm	3,4	3,4
Rated voltage	U_n	Vac	230	400
Nominal power	P_N	W	1068	1068
Continuous stall current	I_0	Arms	4,40	2,50
Maximum current	I_{max}	Arms	13,19	7,50
Nominal current	I_N	Arms	3,85	2,19
Nominal working speed	n_N	rpm	3000	3000
Maximum working speed 230VAC	n_{max}	rpm	3900	-
Maximum working speed 400VAC	n_{max}	rpm	5000	3900
Torque constant	k_t	Nm/Arms	0,910	1,600
Voltage constant	K_{eu-v}	Vrms/Krpm	55,0	96,0
Winding resistance	R_{20u-v}	Ohm	1,95	6,5
Winding inductance	L_{qu-v}	mH	9,5	28,6
Electrical time constant	T_e	ms	4,9	4,4
Thermal resistance	$^{\circ}C/W$	$^{\circ}C/W$	1,0	1,0
Mechanical time constant	T_m	ms	0,54	0,60
Rotor inertia (*)	J_M	Kg cm ²	1,58	1,58
Mass without holding brake	m	Kg	4,1	4,1
Mass with holding brake	m	Kg	4,82	4,82
Maximum axial shaft load		N	110 (applied on the shaft's center)	
Maximum radial shaft load		N	350 (applied on the shaft's center)	

Rated output with 250 x 250 x 6 mm aluminum heat sink flange coupling - Derating must be considered if the oil seal is applied - IP 54 standard shaft bushing
(*) without brake and without feedback

SEE IT BEFORE IT HAPPENS

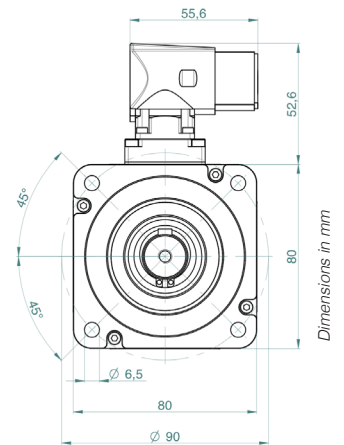
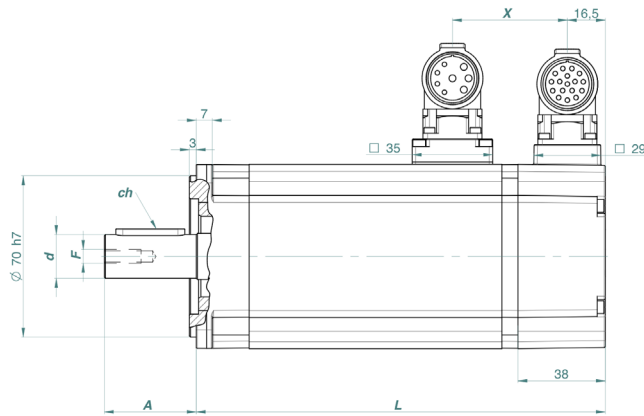
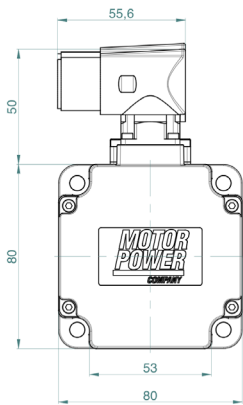
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POWER**
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TETRA COMPACT 80 DIMENSIONS - Size 4

TC 80 4 15

TC 80 4 17

L (Without Brake)	mm	178	178
L (With Brake)	mm	220 [223 with A1 feedback]	220 [223 with A1 feedback]
A	mm	40	40
d	mm	19 (h6)	19 (h6)
ch	mm	6x6x30	6x6x30
F	mm	M6x16	M6x16
X (Without Brake)	mm	50	50
X (With Brake)	mm	92	92

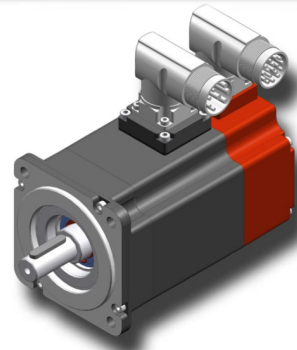


Power connector 4+4 PIN M23 turnable BEDC 110 - Signal connector 17 PIN M23 turnable AEDC 139

SEE IT BEFORE IT HAPPENS

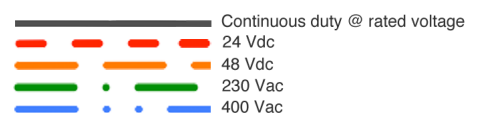
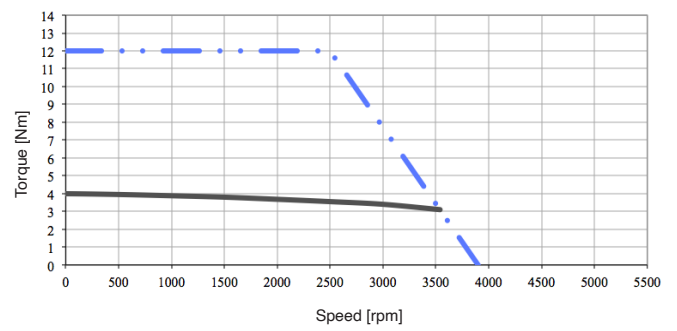
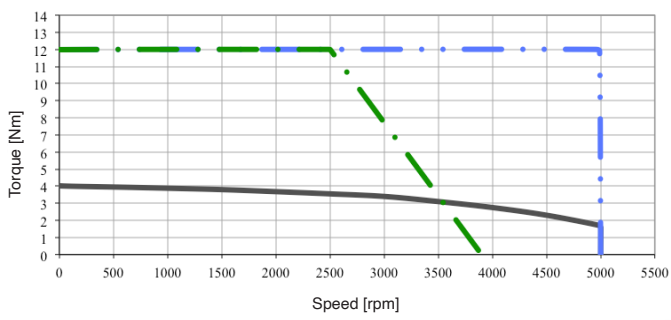
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POWER**
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TETRA COMPACT 80 TORQUE /SPEED CHARTS - Size 4



TETRA COMPACT 80 4 15

TETRA COMPACT 80 4 17



TETRA COMPACT 100 RATINGS AND SPECIFICATIONS

TIME RATING	Continuous	AMBIENT TEMPERATURE	0 to 40 °C
INSULATION CLASS	F	AMBIENT HUMIDITY	5 to 85% (non-condensing)
ENCLOSURE	Totally enclosed. Self-cooled	POLES	8
PROTECTION CLASS	IP 65 standard on the body	THERMAL PROTECTION	PT 1000
INSULATION SYSTEM UL /CSA	cURus , DV155J File nr.:E216686	CE certified	

TC 100 3,2 21 TC 100 3,2 15 TC 100 5,6 15 TC 100 8 15

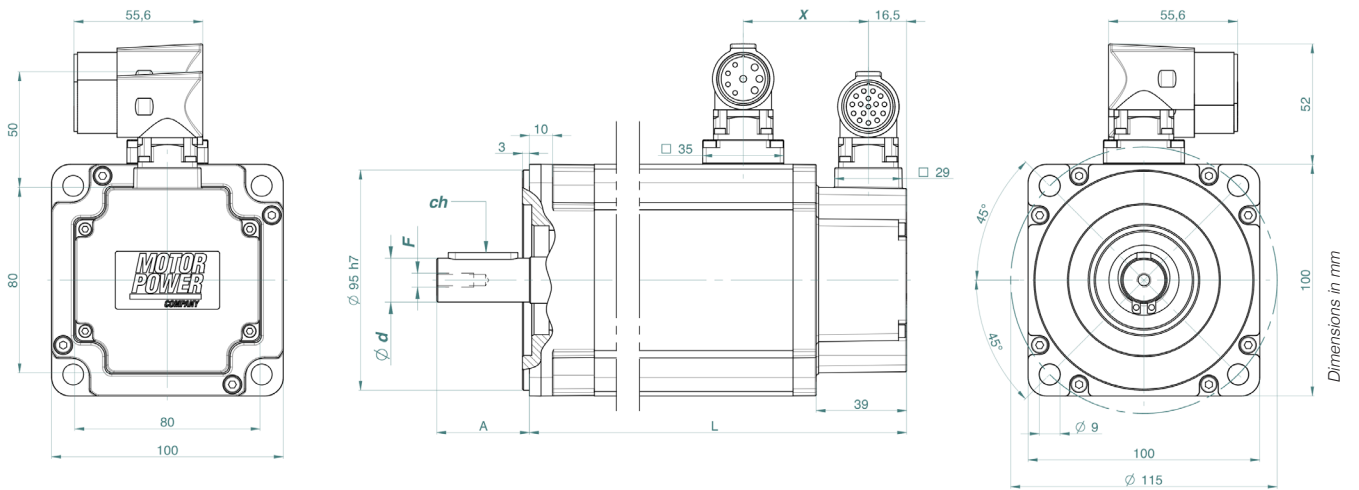
			TC 100 3,2 21	TC 100 3,2 15	TC 100 5,6 15	TC 100 8 15
Continuous stall torque	M_0	Nm	3,2	3,2	5,6	7,5
Peak torque	M_{max}	Nm	11,0	11,0	22,0	33,0
Nominal torque	M_n	Nm	2,61	2,61	4,2	5,8
Rated voltage	U_n	Vac	230	400	400	400
Nominal power	P_N	W	820	820	1320	1820
Continuous stall current	I_0	Arms	6,08	3,52	6,15	8,24
Maximum current	I_{max}	Arms	20,91	12,09	24,18	36,27
Nominal current	I_N	Arms	5,11	2,96	4,76	6,57
Nominal working speed	nN	rpm	3000	3000	3000	3000
Maximum working speed 230VAC	nmax	rpm	5000	3900	3900	3900
Maximum working speed 400VAC	nmax	rpm	-	5000	5000	5000
Torque constant	k_t	Nm/Arms	0,526	0,910	0,910	0,910
Voltage constant	K_{eu-v}	Vrms/Krpm	31,8	55,0	55,0	55,0
Winding resistance	R_{20u-v}	Ohm	0,99	3	1,19	0,69
Winding inductance	L_{qu-v}	mH	8,07	23,5	12,2	4,22
Electrical time constant	T_e	ms	8,15	7,83	10,25	6,12
Thermal resistance	°C/W	°C/W	1,0	1,0	0,95	0,78
Mechanical time constant	T_m	ms	0,92	0,81	0,62	0,51
Rotor inertia (°)	J_M	Kg cm ²	1,55	1,55	2,91	4,1
Mass without holding brake	m	Kg	3,9	3,9	5,6	7,3
Mass with holding brake	m	Kg	5,2	5,2	6,9	8,6
Maximum axial shaft load		N	225 (applied on the shaft's center)			
Maximum radial shaft load		N	626 (applied on the shaft's center)			

Rated Output with 300 x 300 x 6 mm aluminum heat sink flange coupling - Derating must be considered if the oil seal is applied - IP 54 standard shaft bushing (*) without brake and without feedback

TETRA COMPACT 100 DIMENSIONS

TC 100 3,2 21 TC 100 3,2 15 TC 100 5,6 15 TC 100 8 15

L (Without Brake)	mm	145	145	175	205
L (With Brake)	mm	195	195	225	255
A	mm	40	40	40	40
d	mm	19 (h6)	19 (h6)	19 (h6)	19 (h6)
C	mm	6x6x30	6x6x30	6x6x30	6x6x30
F	mm	M6x16	M6x16	M6x16	M6x16
X (Without Brake)	mm	54	54	54	54
X (With Brake)	mm	104	104	104	104

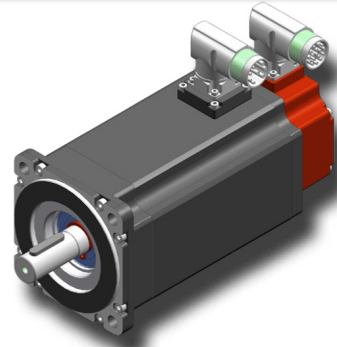


Power connector 4+4 PIN M23 turnable BEDC 110 - Signal connector 17 PIN M23 turnable AEDC 139

SEE IT BEFORE IT HAPPENS

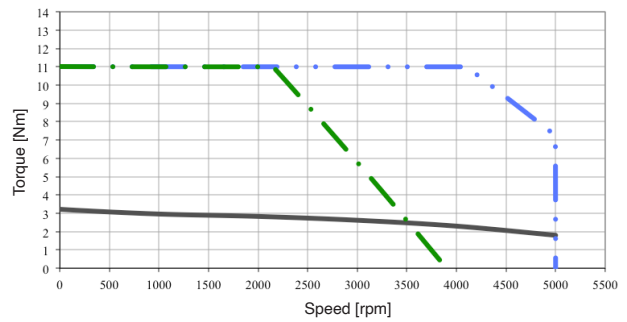
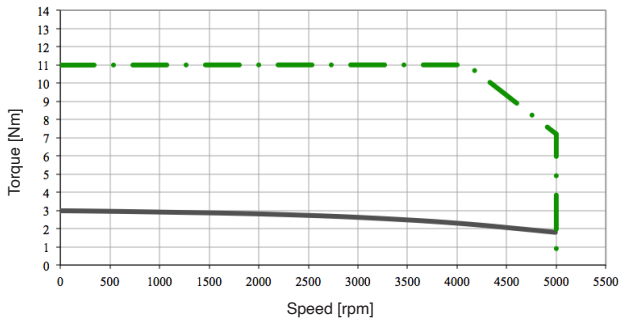
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TETRA COMPACT 100 TORQUE / SPEED CHARTS



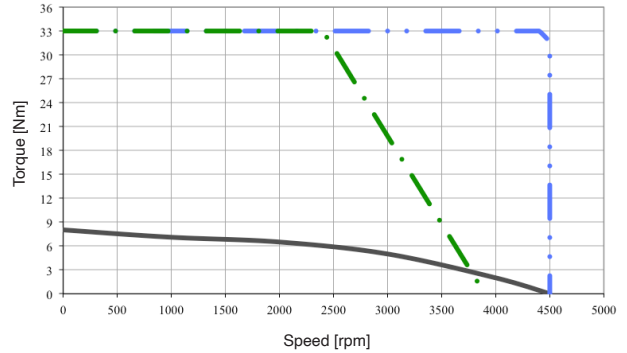
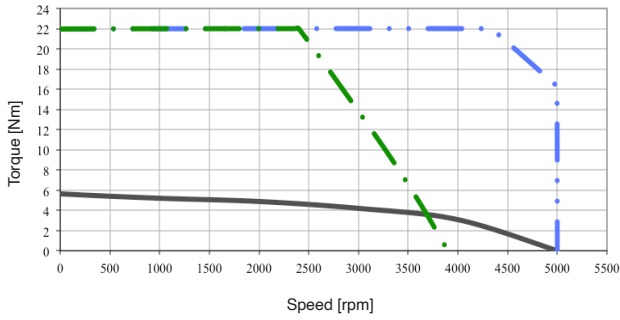
TETRA COMPACT 100 3,2 21

TETRA COMPACT 100 3,2 15



TETRA COMPACT 100 5.6 15

TETRA COMPACT 100 8 15



SEE IT BEFORE IT HAPPENS



- Continuous duty @ rated voltage
- 24 Vdc
- 48 Vdc
- 230 Vac
- 400 Vac

TETRA 115 RATINGS AND SPECIFICATIONS - Sizes 3 - 5,2 - 7

TIME RATING	Continuous	AMBIENT TEMPERATURE	0 to 40 °C
INSULATION CLASS	F	AMBIENT HUMIDITY	5 to 85% (non-condensing)
ENCLOSURE	Totally enclosed. Self-cooled	POLES	6
PROTECTION CLASS	IP 65 standard on the body	THERMAL PROTECTION	PT 1000
INSULATION SYSTEM UL /CSA	cURus , DV155J File nr.:E216686	CE certified	

T115 3 21 T115 3 15 T115 5,2 14 T115 5,2 15 T115 7 15 T115 7 17

Continuous stall torque	M_0	Nm	3,0	3,0	5,0	5,0	6,5	6,5
Peak torque	M_{max}	Nm	9,0	9,0	15,6	15,6	21,0	21,0
Nominal torque	M_n	Nm	2,7	2,7	4,1	4,1	5,3	5,3
Rated voltage	U_n	Vac	230	400	230	400	230	400
Nominal power	P_N	W	840	840	1300	1300	1650	1650
Continuous stall current	I_0	Arms	5,7	3,3	8,4	5,5	7,1	4,1
Maximum current	I_{max}	Arms	17,1	9,9	26,2	17,1	23,1	13,1
Nominal current	I_N	Arms	5,3	3,1	7,3	4,8	6,1	3,4
Nominal working speed	n_N	rpm	3000	3000	3000	3000	3000	3000
Maximum working speed 230VAC	n_{max}	rpm	5000	3900	5000	3900	3900	2200
Maximum working speed 400VAC	n_{max}	rpm	-	5000	-	5000	4500	3900
Torque constant	k_t	Nm/Arms	0,53	0,91	0,60	0,91	0,91	1,60
Voltage constant	K_{eu-v}	Vrms/Krpm	31,8	55	36	55	55	97
Winding resistance	R_{20u-v}	Ohm	1,3	4,0	0,9	2,1	1,2	3,7
Winding inductance	L_{qu-v}	mH	3,0	9,0	2,4	6,1	4,1	12,0
Electrical time constant	T_e	ms	2,3	2,3	2,7	2,9	3,4	3,2
Thermal resistance	°C/W	°C/W	1,08	1,05	0,72	0,72	0,74	0,75
Mechanical time constant H/L = high/low rotor inertia	T_m	ms	5,1/3,3	5,3/3,4	4,0/2,6	4,0/2,6	3,1/1,9	3/1,9
High rotor inertia (as an option) ^(a)	J_M	Kg cm ²	7,3	7,3	10,6	10,6	14,1	14,1
Low rotor inertia (standard) ^(a)	J_M	Kg cm ²	4,7	4,7	6,8	6,8	8,8	8,8
Mass without holding brake	m	Kg	4,7	4,7	6,2	6,2	7,5	7,5
Mass with holding brake	m	Kg	5,9	5,9	7,4	7,4	8,7	8,7
Maximum axial shaft load		N			180 (applied on the shaft's center)			
Maximum radial shaft load		N			600 (applied on the shaft's center)			

Rated output with 350 x 350 x 20 mm metallic heat sink coupling - Derating must be considered if the oil seal is applied - IP 54 standard shaft bushing
^(a) without brake and without feedback

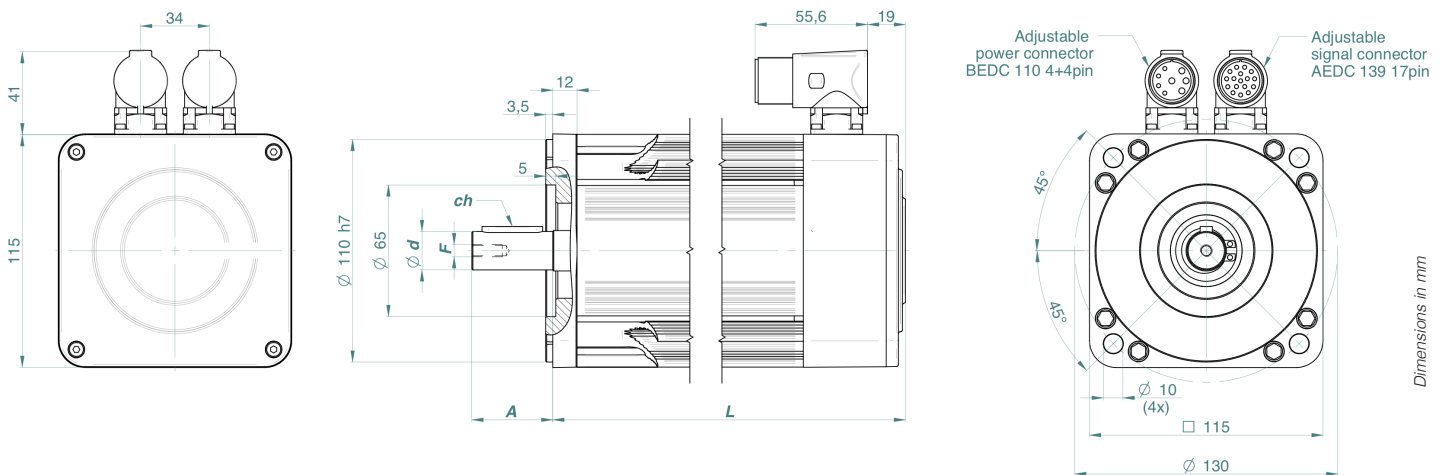
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TETRA 115 DIMENSIONS - Sizes 3 - 5,2 - 7

T115 3 21 T115 3 15 T115 5,2 14 T115 5,2 15 T115 7 15 T115 7 17

L (Without Brake)	mm	164	164	189	189	214	214
L (With Brake)	mm	214	214	239	239	264	264
A	mm	30	30	40	40	40	40
d	mm	14 (j6)	14 (j6)	19 (j6)	19 (j6)	19 (j6)	19 (j6)
ch	mm	5x5x25	5x5x25	6x6x30	6x6x30	6x6x30	6x6x30
F	mm	M5x12,5	M5x12,5	M6x15	M6x15	M6x15	M6x15

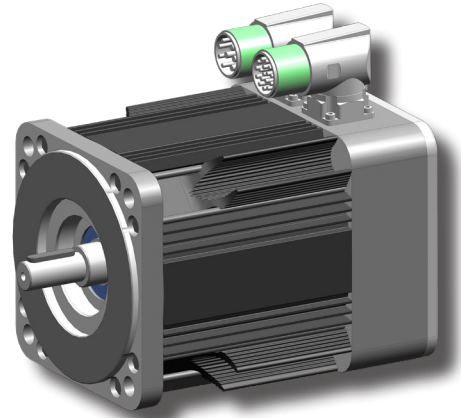


Power connector 4+4 PIN M23 turnable BEDC 110 - Signal connector 17 PIN M23 turnable AEDC 139

SEE IT BEFORE IT HAPPENS

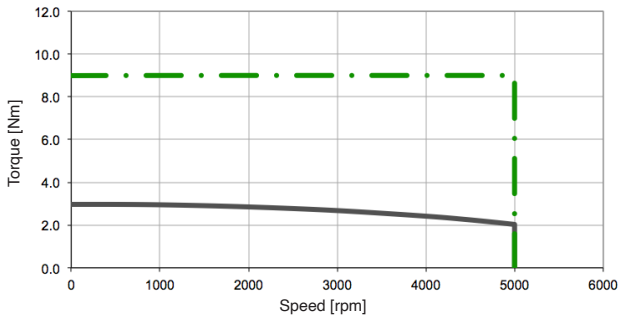
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TETRA 115 TORQUE / SPEED CHARTS Sizes 3 - 5,2 - 7

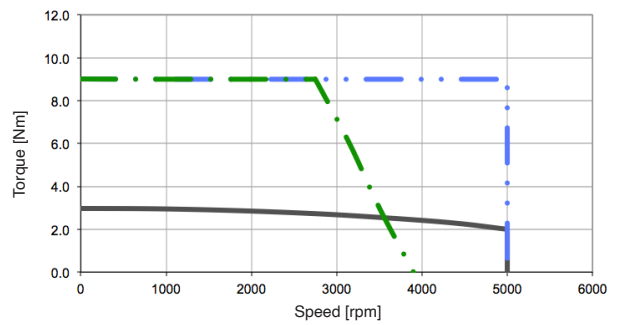


- Continuous duty @ rated voltage
- - - 24 Vdc
- - - 48 Vdc
- · - 230 Vac
- · - 400 Vac

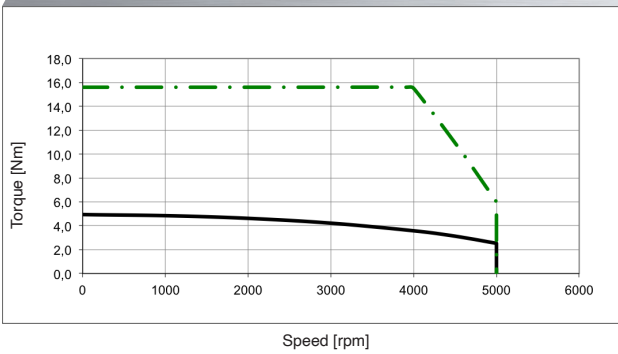
TETRA 115 3 21



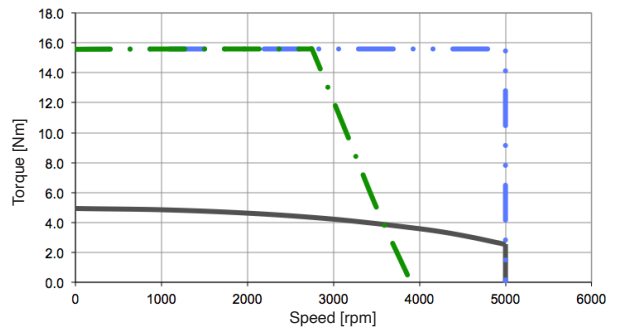
TETRA 115 3 15



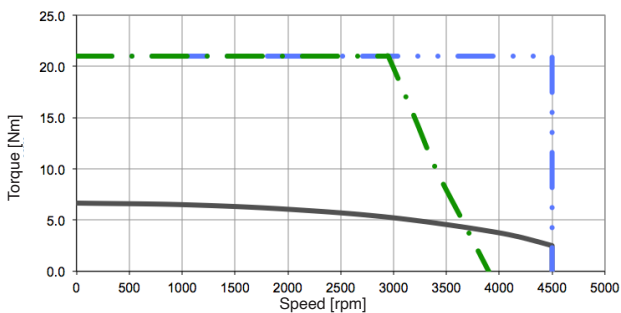
TETRA 115 5,2 14



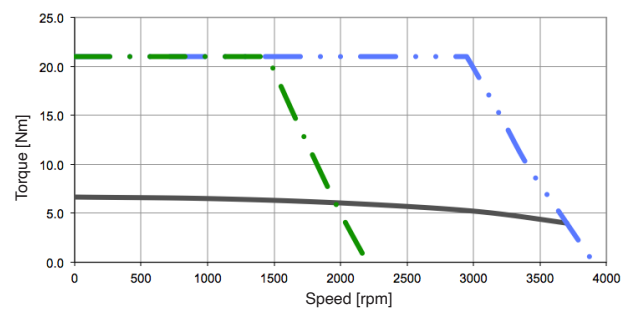
TETRA 115 5,2 15



TETRA 115 7 15



TETRA 115 7 17



TETRA 115 RATINGS AND SPECIFICATIONS - Sizes 9,2 - 11

TIME RATING	Continuous	AMBIENT TEMPERATURE	0 to 40 °C
INSULATION CLASS	F	AMBIENT HUMIDITY	5 to 85% (non-condensing)
ENCLOSURE	Totally enclosed. Self-cooled	POLES	6
PROTECTION CLASS	IP 65 standard on the body	THERMAL PROTECTION	PT 1000
INSULATION SYSTEM UL /CSA	cURus , DV155J File nr.:E216686	CE certified	

			T115 9,2 15	T115 9,2 17	T115 11 15	T115 11 17
Continuous stall torque	M_0	Nm	8,5	8,5	9,5	9,5
Peak torque	M_{max}	Nm	27,6	27,6	33,0	33,0
Nominal torque	M_n	Nm	6,4	6,4	7,3	7,3
Rated voltage	U_n	Vac	230	400	230	400
Nominal power	P_N	W	2000	2000	2300	2300
Continuous stall current	I_0	Arms	9,3	5,3	10,4	5,9
Maximum current	I_{max}	Arms	30,3	17,2	36,3	20,6
Nominal current	I_N	Arms	7,3	4,2	8,5	4,8
Nominal working speed	nN	rpm	3000	3000	3000	3000
Maximum working speed 230VAC	nmax	rpm	3900	2200	3900	2200
Maximum working speed 400VAC	nmax	rpm	4500	3900	4500	3900
Torque constant	k_t	Nm/Arms	0,91	1,60	0,91	1,60
Voltage constant	K_{eu-v}	Vrms/Krpm	55	97	55	97
Winding resistance	R_{20u-v}	Ohm	0,9	2,8	0,9	2,8
Winding inductance	L_{qu-v}	mH	3,1	10,0	2,9	8,6
Electrical time constant	T_e	ms	3,4	3,6	3,2	3,1
Thermal resistance	°C/W	°C/W	0,58	0,58	0,45	0,46
Mechanical time constant H/L = high/low rotor inertia	T_m	ms	2,9/1,8	2,9/1,8	3,5/2,2	3,4/2,1
High rotor inertia (as an option) ^(a)	J_M	Kg cm ²	17,5	17,5	20,8	20,8
Low rotor inertia (standard) ^(a)	J_M	Kg cm ²	10,9	10,9	13	13
Mass without holding brake	m	Kg	8,8	8,8	9,9	9,9
Mass with holding brake	m	Kg	9,9	9,9	11,7	11,7
Maximum axial shaft load		N		180 (applied on the shaft's center)		
Maximum radial shaft load		N		600 (applied on the shaft's center)		

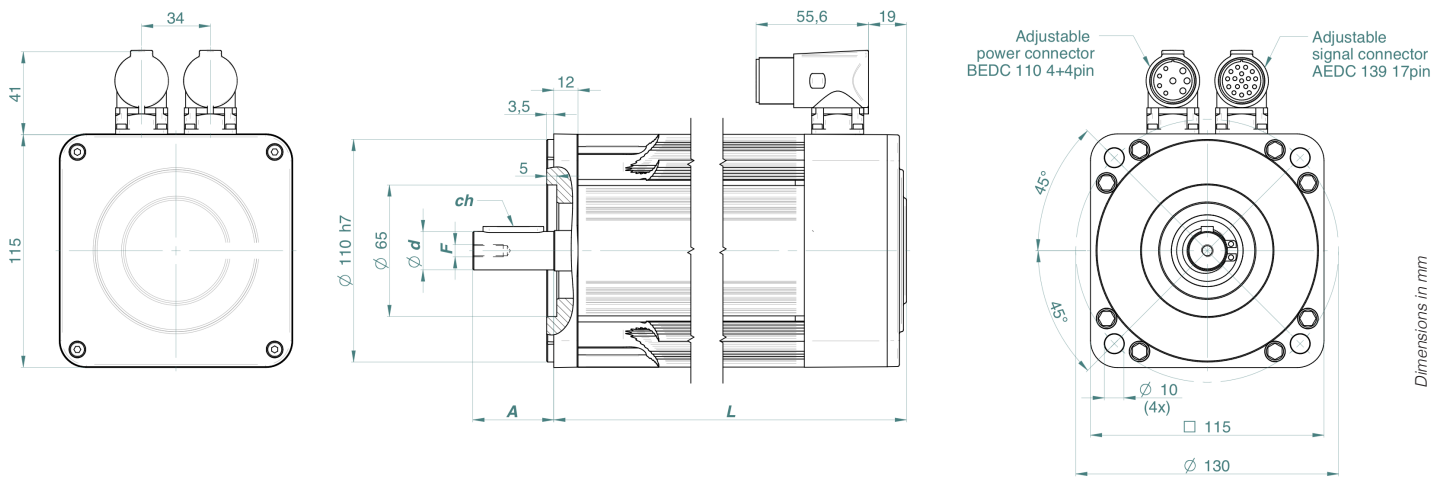
Rated output with 350 x 350 x 20 mm metallic heat sink flange coupling - Derating must be considered if the oil seal is applied - IP 54 standard shaft bushing
^(*) without brake and without feedback

SEE IT BEFORE IT HAPPENS

TETRA 115 DIMENSIONS - Sizes 9,2 - 11

T115 9,2 15 T115 9,2 17 T115 11 15 T115 11 17

L (Without Brake)	mm	239	239	264	264
L (With Brake)	mm	289	289	314	314
A	mm	40	40	40	40
d	mm	19 (j6)	19 (j6)	19 (j6)	19 (j6)
ch	mm	6x6x30	6x6x30	6x6x30	6x6x30
F	mm	M6x15	M6x15	M6x15	M6x15



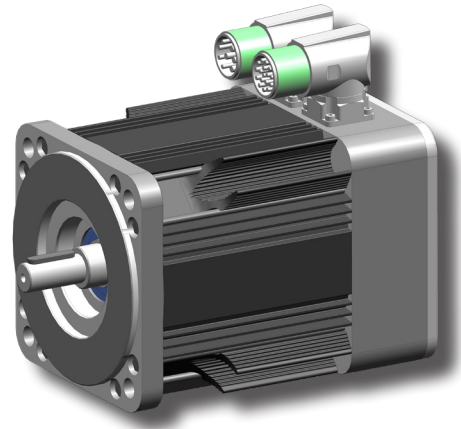
Power connector 4+4 PIN M23 turnable BEDC 110 - Signal connector 17 PIN M23 turnable AEDC 139

Dimensions in mm

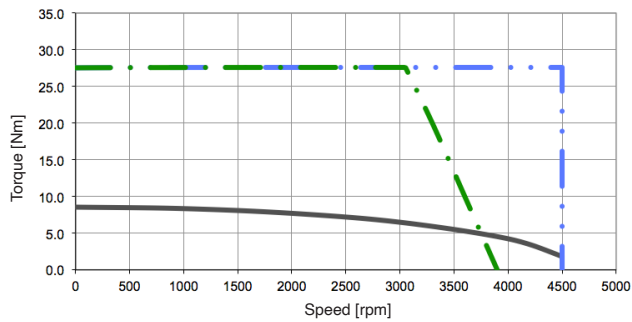
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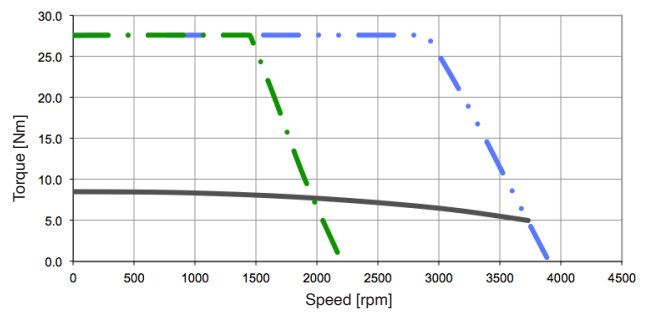
TETRA 115 TORQUE / SPEED CHARTS - Sizes 9,2- 11



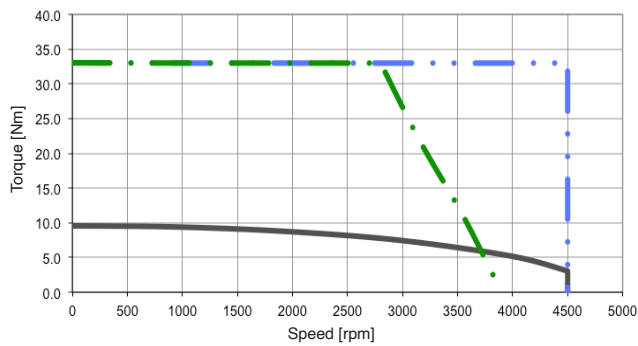
TETRA 115 9,2 15



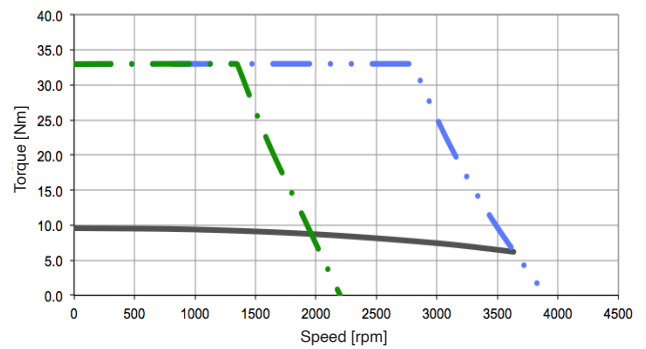
TETRA 115 9,2 17



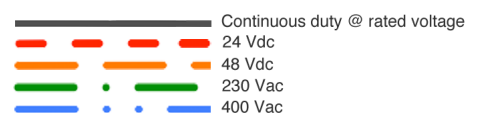
TETRA 115 11 15



TETRA 115 11 17



SEE IT BEFORE IT HAPPENS



TETRA 142 RATINGS AND SPECIFICATIONS Sizes 12 - 16,5

TIME RATING	Continuous	AMBIENT TEMPERATURE	0 to 40 °C
INSULATION CLASS	F	AMBIENT HUMIDITY	5 to 85% (non-condensing)
ENCLOSURE	Totally enclosed. Self-cooled	POLES	6
PROTECTION CLASS	IP 65 standard on the body	THERMAL PROTECTION	PT 1000
INSULATION SYSTEM UL /CSA	cURus , DV155J File nr.:E216686	CE certified	

			T142 12 15	T142 12 17	T142 16,5 15	T142 16,5 17
Continuous stall torque	M_0	Nm	11	11	14	14
Peak torque	M_{max}	Nm	31	31	42	42
Nominal torque	M_n	Nm	8,6	8,6	11,1	11,1
Rated voltage	U_n	Vac	230	400	230	400
Nominal power	P_N	W	2700	2700	3500	3500
Continuous stall current	I_0	Arms	12,1	6,9	15,4	8,7
Maximum current	I_{max}	Arms	34,1	19,3	46,2	26,2
Nominal current	I_N	Arms	9,9	5,6	12,9	7,3
Nominal working speed	nN	rpm	3000	3000	3000	3000
Maximum working speed 230VAC	nmax	rpm	3900	2200	3900	2200
Maximum working speed 400VAC	nmax	rpm	4800	3900	4600	3900
Torque constant	k_t	Nm/Arms	0,91	1,60	0,91	1,60
Voltage constant	K_{eu-v}	Vrms/Krpm	55	97	55	97
Winding resistance	R_{20u-v}	Ohm	0,6	1,6	0,4	1,3
Winding inductance	L_{qu-v}	mH	2,8	7,9	2,1	6,9
Electrical time constant	T_e	ms	4,6	4,8	5,2	5,2
Thermal resistance	°C/W	°C/W	0,52	0,59	0,47	0,45
Mechanical time constant H/L = high/low rotor inertia	T_m	ms	4,2/2,5	3,7/2,2	3,4/2,0	3,5/2,1
High rotor inertia (as an option) ^(a)	J_M	Kg cm ²	38,4	38,4	45,9	45,9
Low rotor inertia (standard) ^(a)	J_M	Kg cm ²	23	23	27	27
Mass without holding brake	m	Kg	13,5	13,5	15,5	15,5
Mass with holding brake	m	Kg	15,7	15,7	17,7	17,7
Maximum axial shaft load		N		240 (applied on the shaft's center)		
Maximum radial shaft load		N		800 (applied on the shaft's center)		

Rated output with 350 x 350 x 20 mm metallic heat sink flange coupling - Derating must be considered if the oil seal is applied - IP 54 standard shaft bushing
(*) without brake and without feedback

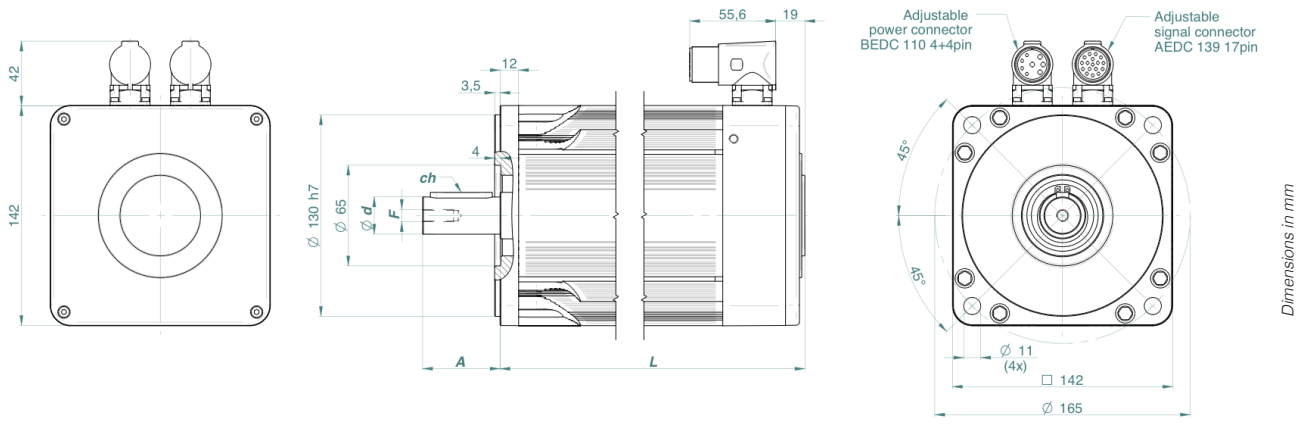
SEE IT BEFORE IT HAPPENS

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TETRA 142 DIMENSIONS Sizes 12 - 16,5

		T142 12 15	T142 12 17	T142 16,5 15	T142 16,5 17
--	--	------------	------------	--------------	--------------

L (Without Brake)	mm	245	245	275	275
L (With Brake)	mm	305	305	335	335
A	mm	50	50	50	50
d	mm	24 (j6)	24 (j6)	24 (j6)	24 (j6)
ch	mm	8x7x40	8x7x40	8x7x40	8x7x40
F	mm	M8x20	M8x20	M8x20	M8x20



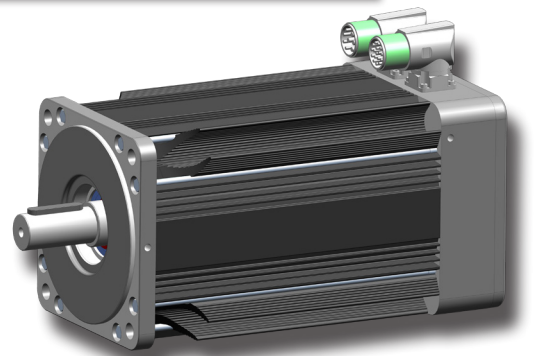
Power connector 4+4 PIN M23 turnable BEDC 110 - Signal connector 17 PIN M23 turnable AEDC 139

Dimensions in mm

SEE IT BEFORE IT HAPPENS

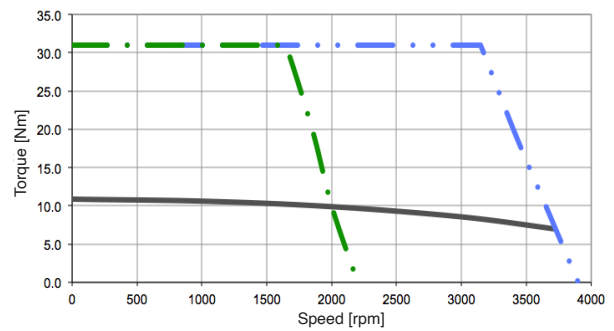
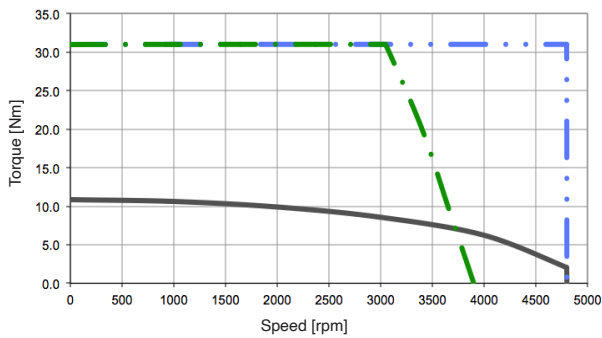


TETRA 142 TORQUE / SPEED CHARTS Sizes 12 - 16,5



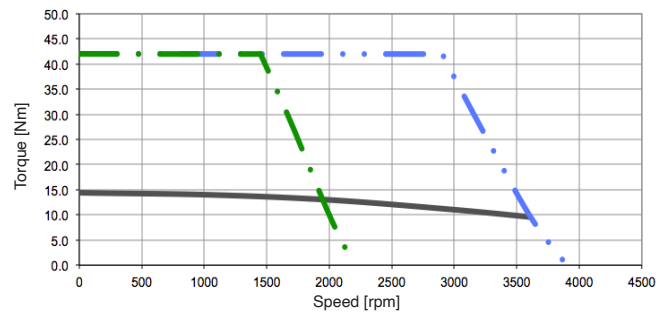
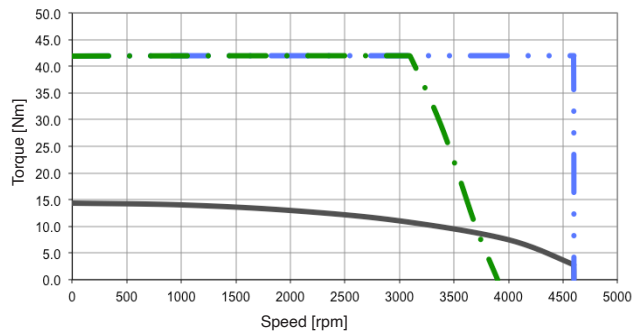
TETRA 142 12 15

TETRA 142 12 17



TETRA 142 16,5 15

TETRA 142 16,5 17



- Continuous duty @ rated voltage
- 24 Vdc
- 48 Vdc
- • 230 Vac
- • 400 Vac

TETRA 142 RATINGS AND SPECIFICATIONS Sizes 21 - 25,5

TIME RATING	Continuous	AMBIENT TEMPERATURE	0 to 40 °C
INSULATION CLASS	F	AMBIENT HUMIDITY	5 to 85% (non-condensing)
ENCLOSURE	Totally enclosed. Self-cooled	POLES	6
PROTECTION CLASS	IP 65 standard on the body	THERMAL PROTECTION	PT 1000
INSULATION SYSTEM UL /CSA	cURus , DV155J File nr.:E216686	CE certified	

			T142 21 15	T142 21 17	T142 25,5 15	T142 25,5 17
Continuous stall torque	M_0	Nm	18	18	21	21
Peak torque	M_{max}	Nm	55	55	65	65
Nominal torque	M_n	Nm	13,1	13,1	15,9	15,9
Rated voltage	U_n	Vac	230	400	230	400
Nominal power	P_N	W	4100	4100	5000	5000
Continuous stall current	I_0	Arms	19,8	11,2	23,1	13,1
Maximum current	I_{max}	Arms	60,5	34,3	71,4	40,5
Nominal current	I_N	Arms	15,1	8,5	18,4	10,4
Nominal working speed	n_N	rpm	3000	3000	3000	3000
Maximum working speed 230VAC	n_{max}	rpm	3900	2200	3900	2200
Maximum working speed 400VAC	n_{max}	rpm	4400	3900	4400	3900
Torque constant	k_t	Nm/Arms	0,91	1,60	0,91	1,60
Voltage constant	K_{eu-v}	Vrms/Krpm	55	97	55	97
Winding resistance	R_{20u-v}	Ohm	0,25	0,8	0,24	0,8
Winding inductance	L_{qu-v}	mH	1,4	4,5	1,3	4,2
Electrical time constant	T_e	ms	5,6	5,6	5,4	5,5
Thermal resistance	°C/W	°C/W	0,46	0,45	0,36	0,34
Mechanical time constant H/L = high/low rotor inertia	T_m	ms	2,8/1,6	2,9/1,7	3,0/1,8	3,1/1,8
High rotor inertia (as an option) ^(*)	J_M	Kg cm ²	61,2	61,2	68,9	68,9
Low rotor inertia (standard) ^(*)	J_M	Kg cm ²	36,1	36,1	40,5	40,5
Mass without holding brake	m	Kg	18,5	18,5	20,5	20,5
Mass with holding brake	m	Kg	20,7	20,7	22,7	22,7
Maximum axial shaft load		N		240 (applied on the shaft's center)		
Maximum radial shaft load		N		800 (applied on the shaft's center)		

Rated output with 350 x 350 x 20 mm metallic heat sink flange coupling - Derating must be considered if the oil seal is applied - IP 54 standard shaft bushing
^(*) without brake and without feedback

TETRA 142 DIMENSIONS - Sizes 21 - 25,5

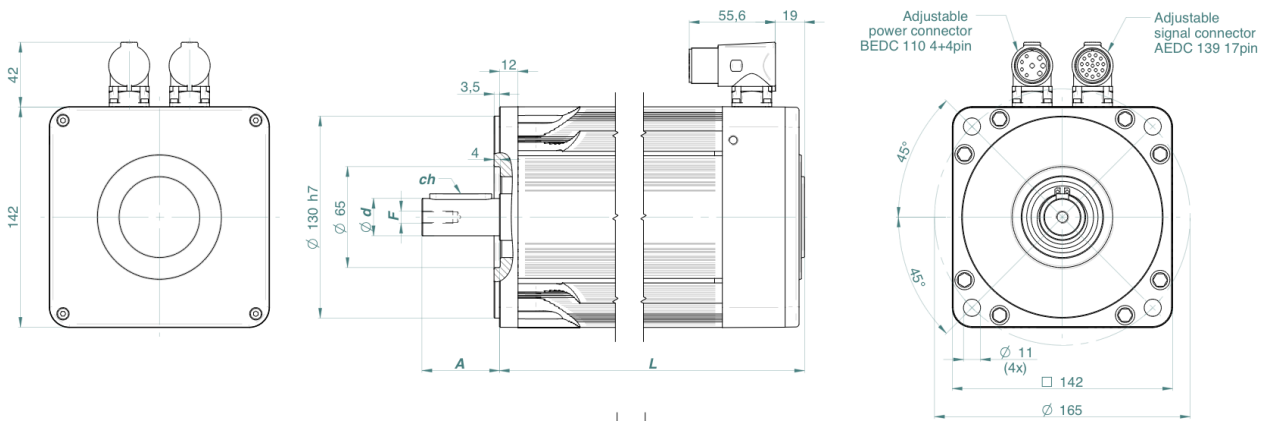
T142 21 15

T142 21 17

T142 25,5 15

T142 25,5 17

L (Without Brake)	mm	305	305	335	335
L (With Brake)	mm	365	365	395	395
A	mm	50	50	50	50
d	mm	24 (j6)	24 (j6)	24 (j6)	24 (j6)
ch	mm	8x7x40	8x7x40	8x7x40	8x7x40
F	mm	M8x20	M8x20	M8x20	M8x20



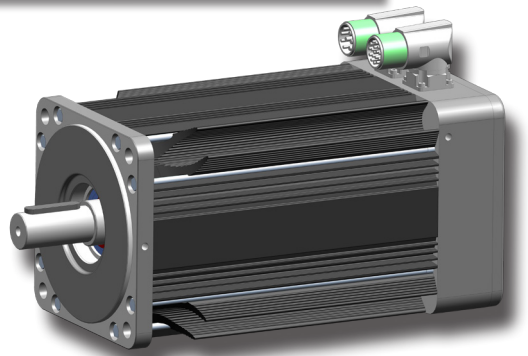
Power connector 4+4 PIN M23 turnable BEDC 110 - Signal connector 17 PIN M23 turnable AEDC 139

Dimensions in mm

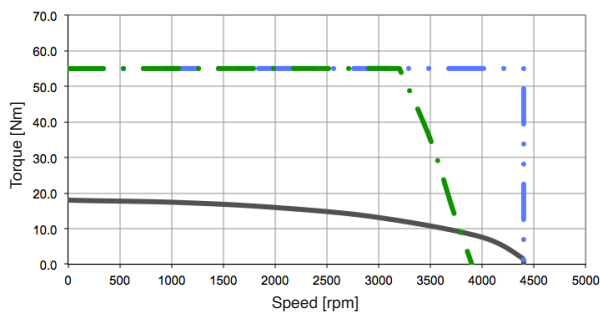
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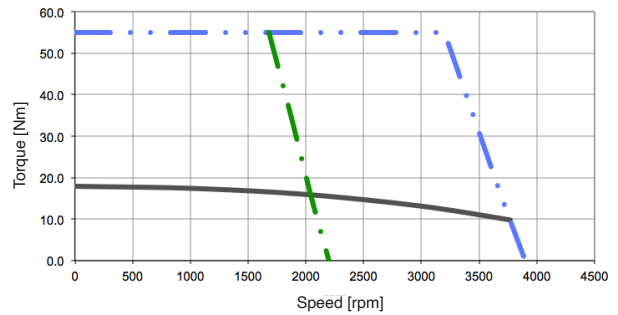
TETRA 142 TORQUE / SPEED CHARTS - Sizes 21 - 25,5



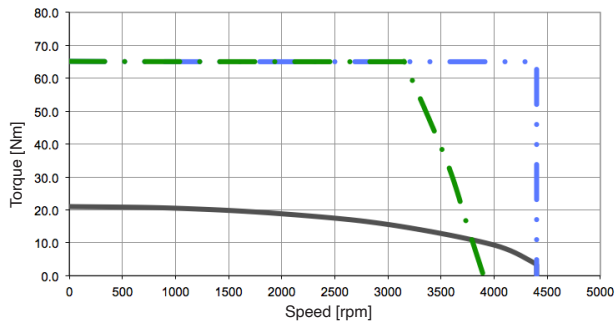
TETRA 142 21 15



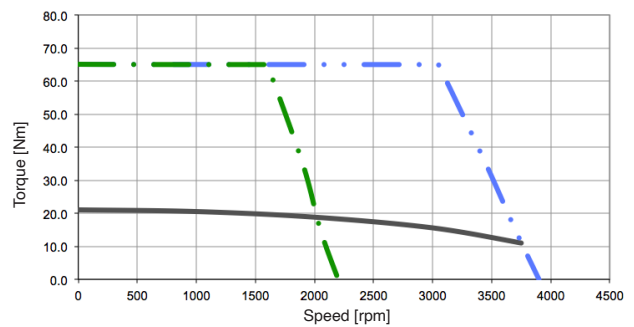
TETRA 142 21 17



TETRA 142 25,5 15



TETRA 142 25,5 17



SEE IT BEFORE IT HAPPENS



- Continuous duty @ rated voltage
- 24 Vdc
- 48 Vdc
- 230 Vac
- 400 Vac

TETRA 180 RATINGS AND SPECIFICATIONS

TIME RATING	Continuous	AMBIENT TEMPERATURE	0 to 40 °C
INSULATION CLASS	F	AMBIENT HUMIDITY	5 to 85% (non-condensing)
ENCLOSURE	Totally enclosed. Self-cooled	POLES	6
PROTECTION CLASS	IP 65 standard on the body	THERMAL PROTECTION	PT 1000
INSULATION SYSTEM UL /CSA	cURus , DV155J File nr.:E216686	CE certified	

			T180 22,5 17	T180 35 17	T180 47 17
Continuous stall torque	M_0	Nm	25	39	50
Peak torque	M_{max}	Nm	63	95	130
Nominal torque	M_n	Nm	15,0	21,0	40,0
Rated voltage	U_n	Vac	400	400	400
Nominal power	P_N	W	4700	6600	8380
Continuous stall current	I_0	Arms	15,6	24,3	31,2
Maximum current	I_{max}	Arms	39,3	59,2	81,0
Nominal current	I_N	Arms	9,8	13,7	26,2
Nominal working speed	n_N	rpm	3000	3000	2000
Maximum working speed 230VAC	n_{max}	rpm	2200	2200	2200
Maximum working speed 400VAC	n_{max}	rpm	3000	3000	3000
Torque constant	k_t	Nm/Arms	1,60	1,60	1,60
Voltage constant	K_{eu-v}	Vrms/Krpm	97	97	97
Winding resistance	R_{20u-v}	Ohm	0,59	0,29	0,19
Winding inductance	L_{qu-v}	mH	3,0	1,9	1,4
Electrical time constant	T_e	ms	5,1	6,6	7,4
Thermal resistance	$^{\circ}C/W$	$^{\circ}C/W$	0,32	0,27	0,25
Mechanical time constant H/L = high/low rotor inertia	T_m	ms	3,3/2,4	2,4/1,7	2,1/1,5
High rotor inertia (as an option) ^(a)	J_M	Kg cm ²	95	141	186,7
Low rotor inertia (standard) ^(a)	J_M	Kg cm ²	69,5	102,5	135,5
Mass without holding brake	m	Kg	27,5	36	45
Mass with holding brake	m	Kg	33,5	42	51
Maximum axial shaft load		N	510 (applied on the shaft's center)		
Maximum radial shaft load		N	1700 (applied on the shaft's center)		

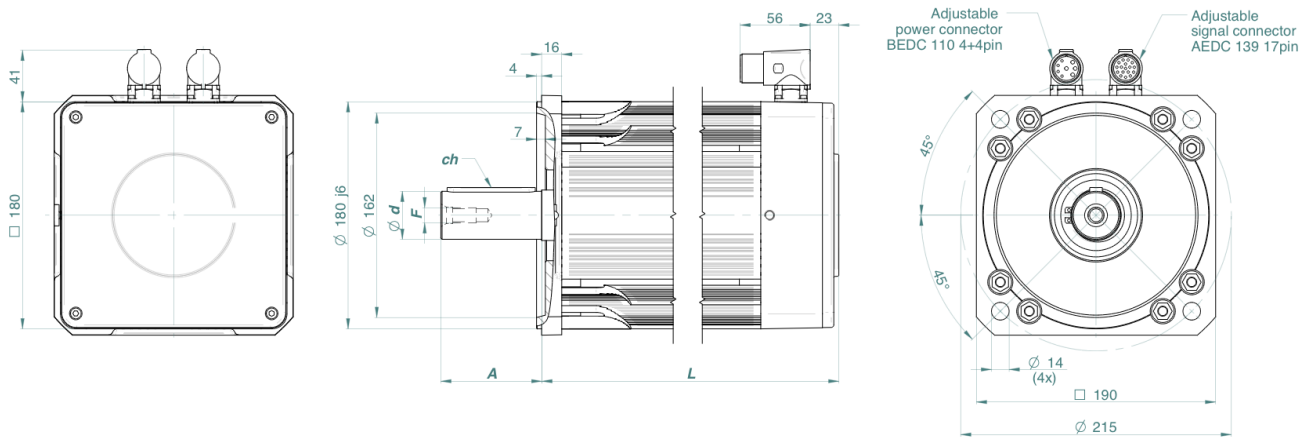
Rated output with 500 x 500 x 30 mm metallic heat sink flange coupling - Derating must be considered if the oil seal is applied - IP 54 standard shaft bushing
(*) without brake and without feedback

SEE IT BEFORE IT HAPPENS

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TETRA 180 RATINGS AND SPECIFICATIONS

		T180 22,5 17	T180 35 17	T180 47 17
L (Without Brake)	mm	290	350	410
L (With Brake)	mm	350	410	470
A	mm	60	80	80
d	mm	28 (j6)	38 (k6)	38 (k6)
ch	mm	8x7x50	10x8x70	10x8x70
F	mm	M10x22	M12x28	M12x28

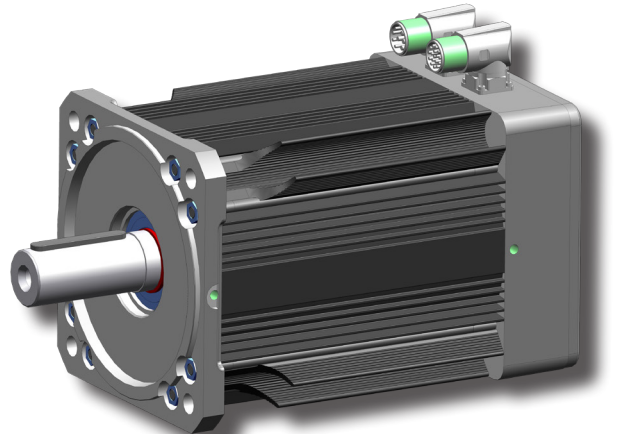


Power connector 4+4 PIN M23 turnable BEDC 110 - Signal connector 17 PIN M23 turnable AEDC 139

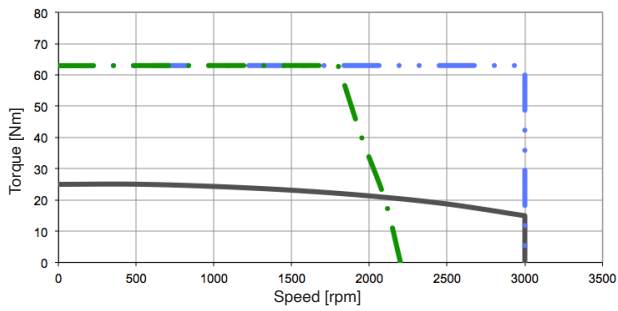
Dimensions in mm

SEE IT BEFORE IT HAPPENS

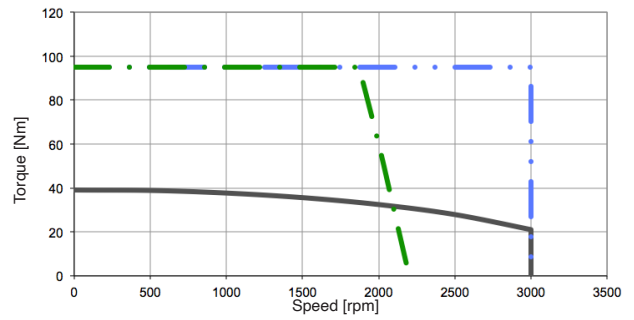
TETRA 180 TORQUE / SPEED CHARTS



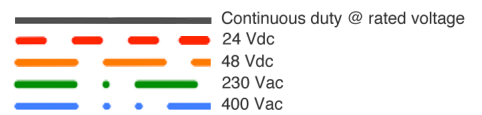
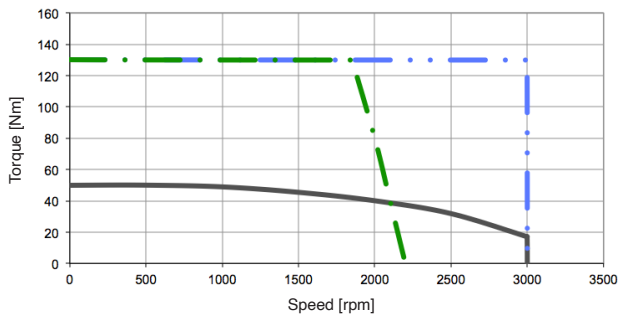
TETRA 180 22,5 17



TETRA 180 35 17



TETRA 180 47 17



FEEDBACK FEATURES

E1 TTL ENCODER

Motor size		TC 40 - 60 - 80	TC 100 - T115 - T142 - T180
Nominal Voltage	V	5±5%	5±5%
Nominal current	mA	200	200
Max Frequency	Khz	200	200
Electronic type		LINE DRIVER AM 26 LS31	LINE DRIVER AM 26 LS31
Zero impulse		ONE AT A LAP	ONE AT A LAP
N° of pulses revolution	ppr	2000	2000
Resolution	cpr	8000	8000
N° of commutation signal		3 DIFFERENTIAL	3 DIFFERENTIAL
System accuracy	arc sec	± 50	± 50
Rotor inertia	Kg cm ²	0.01	0.065

Please note: for all motors size **TC 40** - all motors size **TC 60** and for model **TC100 8 15** with encoder TTL the maximum theoretical acceleration is 80.000 rad/s²

R1 RESOLVER 2 poles

Motor size		TC40	TC60 - TC80	TC100 - T115 - T142 - T180
Nominal Voltage	Vrms	7±5%	7±5%	7±5%
Nominal current	mA	50	50	50
Phase shift		+5°	+3°	-5°
Minimum sin amplitude	mVrms	20	20	20
Frequency	kHz	10	10	10
Poles number		2	2	2
Trasformer ratio		0.5 ± 5%	0.5 ± 5%	0.5 ± 5%
Input impedance	ohm	160	130 + j280	110+j140
Output impedance	ohm	130	425 + j755	130+j240
System accuracy		± 10'	± 10'	± 10'
Rotor inertia	Kg cm ²	0.006	0.03	0.1

A1 ABSOLUTE MULTITURN ENCODER

Motor size		TC40 - TC60 - TC80 - TC100 - T115 - T142 - T180
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
Error limits for evaluating the sin/cos periods	arc sec	± 320
Rotor inertia	Kg cm ²	0.0045

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

SEE IT BEFORE IT HAPPENS

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BRAKE FEATURES

		TC 40	TC 60	TC 80	TC 100
Static Torque @20°C ^(*)	Nm	0,4	2	4,5	9
Moment of Inertia	Kg cm ²	0,008	0,050	0,220	0,800
Rated Current	A	0,34	0,46	0,5	0,75
Input Power	W	8	11	12	18
Engaging Time	ms	6	6	7	7
Release Time	ms	10	25	35	40
Operating Voltage	24 Vdc +6% - 10% Stabilized				

		T 115 3 - T115 5,2 - T115 7 - T115 9,2
Static Torque @20°C ^(*)	Nm	9
Moment of Inertia	Kg cm ²	0,800
Rated Current	A	0,75
Input Power	W	18
Engaging Time	ms	7
Release Time	ms	40
Operating Voltage	24 Vdc +6% - 10% Stabilized	

		T115 11 T142 12 T142 16,5	T142 21 T142 25,5	T180 22,5 - T180 35 T180 47
Static Torque @20°C ^(*)	Nm	18	36	72
Moment of Inertia	Kg cm ²	1,9	6,21	15,3
Rated Current	A	1	1,08	1,66
Input Power	W	24	26	40
Engaging Time	ms	10	22	7
Release Time	ms	50	90	140
Operating Voltage	24 Vdc +6% - 10% Stabilized			

^(*) Brakes are tested according to motors continuous stall torque

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

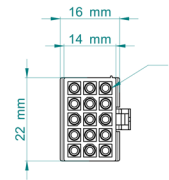
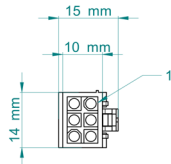
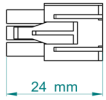
PIN	FEEDBACK FUNCTION
1	Ch A
2	Ch /A
3	Ch B
4	Ch /B
5	Ch Z
6	Ch /Z
7	Hall U
8	Hall /U
9	Hall V
10	Hall /V
11	Hall W
12	Hall /W
13	5 Vdc
14	0 Vdc
15	Shield

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



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

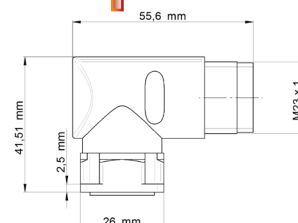
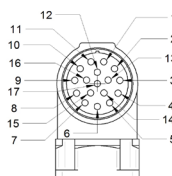
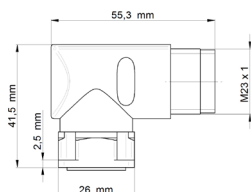
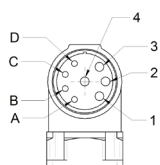
FEEDBACK CONNECTOR

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	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	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)	
2	Black	Phase V		3000	Order code
3	Brown	Phase W		5000	003108010620
4	Yellow/Green + Shield	PE		10000	003108010622
5	Red	Brake +			003108010624
6	Black	Brake -			

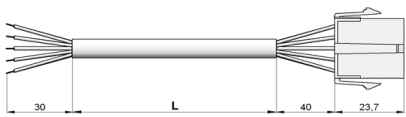
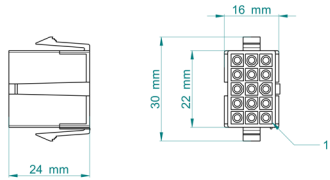
MOTOR SIDE PIN	COLOUR	FUNCTION	Power free wire cable for LITE PRO E40	For cable order	
6	Black1	Brake -		Length (mm)	
5	Red	Brake +		3000	Order code
4	Yellow/Green+Shield	PE		5000	003108010714
3	Brown	Phase W		10000	003108010716
2	Black	Phase V			003108010718
1	Grey	Phase U			

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)	
L2	Red	+UP	1		3000	Order code
3	Brown	Phase W	5		5000	003108010726
2	Black	Phase V	4		10000	003108010728
1	Grey	Phase U	3			003108010730
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 SIGNAL CABLES for TC 40 ONLY


PIN/AMP	FUNCTION	PIN/SUMITOMO 26	E1 TTL encoder signal SUMITOMO cable for FLEXI PRO	For cable order	
1	A	1		Length (mm)	
2	A/	14		3000	Order code
3	B	2		5000	003108020032
4	B/	15		10000	003108020033
5	Z	3			003108020034
6	Z/	16			
7	HALL U	4			
8	-	-			
9	HALL V	17			
10	-	-			
11	HALL W	5			
12	-	-			
13	+5 Vdc	11			
14	0 Vdc	24			
15	Shield	26			

PIN/AMP	FUNCTION	PIN/SUMITOMO 26	R1 resolver signal SUMITOMO cable for FLEXI PRO	For cable order	
1	SIN +	6		Length (mm)	
2	SIN -	19		3000	Order code
3	COS +	7		5000	003108020035
4	COS -	20		10000	003108020036
5	REF +	8			003108020037
6	REF -	21			
7	-	-			
8	-	-			
9	-	-			
10	-	-			
11	-	-			
12	-	-			
13	-	-			
14	-	-			
15	Shield	26			

PIN/AMP	FUNCTION	PIN/SUMITOMO 26	A1 absolute encoder signal SUMITOMO cable for FLEXI PRO	For cable order	
1	SIN +	9		Length (mm)	
2	SIN -	22		3000	Order code
3	COS +	10		5000	003108020038
4	COS -	23		10000	003108020039
5	DATA +	1			003108020040
6	DATA -	14			
7	-	-			
8	-	-			
9	-	-			
10	-	-			
11	-	-			
12	-	-			
13	7-12 Vdc	18			
14	0 Vdc	24			
15	Shield	26			

CABLES SPECIFICATIONS

STATIC POWER CABLES for ALL OTHER MODELS up to 14A

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			

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	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	-			

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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			

CABLES SPECIFICATIONS

STATIC SIGNAL CABLES for ALL OTHER MODELS


PIN/M23	FUNCTION	PIN/SUMITOMO 26	E1 TTL encoder signal SUMITOMO cable for FLEXI PRO	For cable order	
1	HALL W	5		Lenght (mm)	
2	HALL U	4		3000	Order code
3	0 Vdc	24		5000	003108020041
4	5 Vdc	11		10000	003108020042
5	A/	14			003108020043
6	A	1			
7	Z/	16			
8	Z	3			
9	HALL V	17			
10	Shield	26			
11	B/	15			
12	B	2			
13	-	-			
14	-	-			
15	-	-			
16	PT 1000 (+)	12			
17	PT 1000 (-)	25			

PIN/M23	FUNCTION	PIN/SUMITOMO 26	R1 resolver signal SUMITOMO cable for FLEXI PRO	For cable order	
1	-	-		Lenght (mm)	
2	-	-		3000	Order code
3	-	-		5000	003108020044
4	-	-		10000	003108020045
5	SIN -	19			003108020046
6	SIN +	6			
7	REF -	21			
8	REF +	8			
9	-	-			
10	Shield	26			
11	COS -	20			
12	COS +	7			
13	-	-			
14	-	-			
15	-	-			
16	PT 1000 (+)	12			
17	PT 1000 (-)	25			


PIN/M23	FUNCTION	PIN/SUMITOMO 26	A1 absolute encoder signal SUMITOMO cable for FLEXI PRO	For cable order	
1	-	-		Lenght (mm)	
2	-	-		3000	Order code
3	0 Vdc	24		5000	003108020047
4	7-12 Vdc	18		10000	003108020048
5	SIN -	22			003108020049
6	SIN +	9			
7	DATA -	14			
8	DATA +	1			
9	-	-			
10	Shield	26			
11	COS -	23			
12	COS +	10			
13	-	-			
14	-	-			
15	-	-			
16	PT 1000 (+)	12			
17	PT 1000 (-)	25			

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		Lenght (mm)	Order code
2	Green/Yellow		5000	003108007524
3	Black3		10000	003108020011
4	Black2			
A	Black5			
B	Black6			
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		Lenght (mm)	Order code
2	Green/Yellow		3000	003108005080
3	Black3		5000	003108005104
4	Black2		10000	003108005106
A	Black5			
B	Black6			
C	Black7			
D	Black8			

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		Lenght (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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DYNAMIC LAYING CABLES SPECIFICATIONS

SIGNAL CABLES for ALL SERVOMOTORS MODELS

MOTOR SIDE PIN	COLOUR	FUNCTION	DRIVE SIDE PIN	E1 TTL encoder signal SUMITOMO cable for FLEXI PRO For cable order				
17	White	PT 1000 (-)	25		Lenght (mm)	Order code		
16	Brown	PT 1000 (+)	12				3000	003108010390
12	Pink	B	2				5000	003108020186
11	Grey	B/	15		10000	003108020187		
10	Shield2	SHIELD	26					
9	Blue	HV	17					
8	Violet	Z	3					
7	Black	Z/	16					
6	Green	A	1					
5	Yellow	A/	14					
4	Red1	+5Vdc	11					
3	Blue1	GND	24					
2	White/Green	HU	4					
1	Grey/Pink	HW	5					

MOTOR SIDE PIN	COLOUR	FUNCTION	DRIVE SIDE PIN	R1 resolver signal SUMITOMO cable for FLEXI PRO For cable order				
5	Black/Blue	RefSin	19		Lenght (mm)	Order code		
6	Blue	Sin	6				5000	003108011100
7	Black/Green	Ref-	21				10000	003108011102
8	Green	Ref+	8					
10	Shield	SHIELD	26					
11	Black/Red	RefCos	20					
12	Red	Cos	7					
16	White	PT 1000 (+)	12					
17	Black/White	PT 1000 (-)	25					

MOTOR SIDE PIN	COLOUR	FUNCTION	DRIVE SIDE PIN	A1 absolute encoder signal SUMITOMO cable for FLEXI PRO For cable order				
17	White	PT 1000 (+)	25		Lenght (mm)	Order code		
16	Brown	PT 1000 (-)	12				3000	003108011123
12	Pink	Cos	10				5000	003108020152
11	Grey	Cos-	23		10000	003108020153		
10	Shield2	SHIELD	26					
8	Violet	Data+	1					
7	Black	Data-	14					
6	Green	Sin+	9					
5	Yellow	Sin-	22					
4	Red1	7-12V	18					
3	Blue1	GND	24					

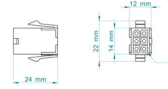
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CONNECTOR SPECIFICATIONS

FLYING CONNECTORS AMP for TC 040 ONLY

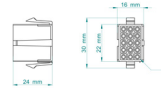
Power Connector
AMP 172160-1 + 6 PIN 171637-1

order code 007117000304



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

order code 007117000306



FLYING CONNECTORS M23 for ALL OTHER MODELS up to 20A

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

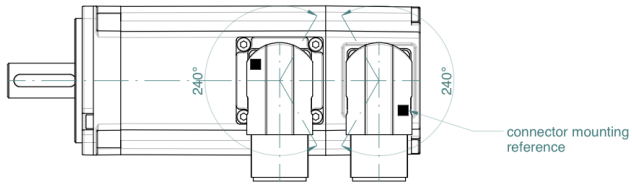
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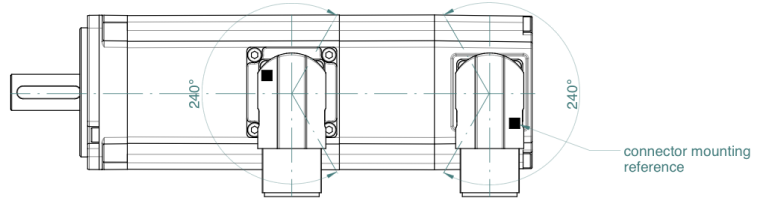
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90° TURNABLE CONNECTORS SPECIFICATIONS

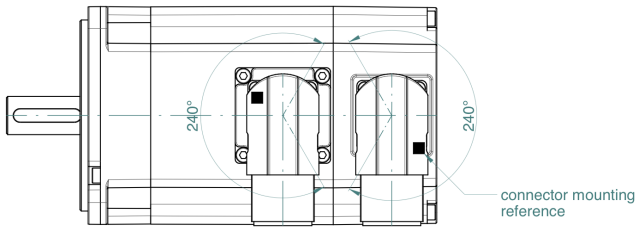
TETRA COMPACT 60



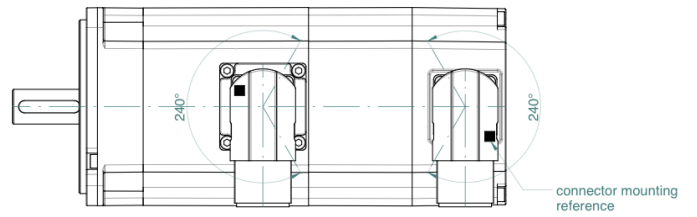
TETRA COMPACT 60 WITH BRAKE



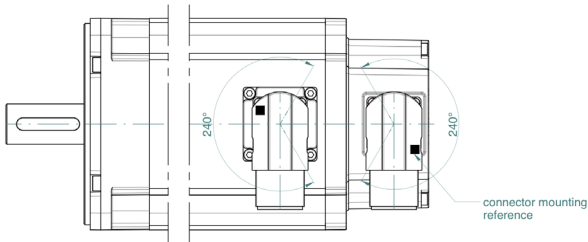
TETRA COMPACT 80



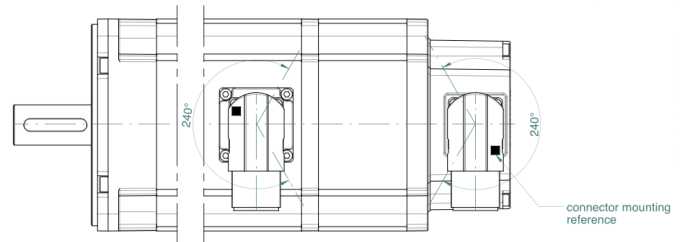
TETRA COMPACT 80 WITH BRAKE



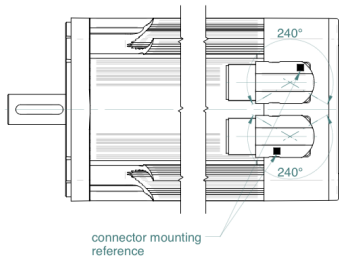
TETRA COMPACT 100



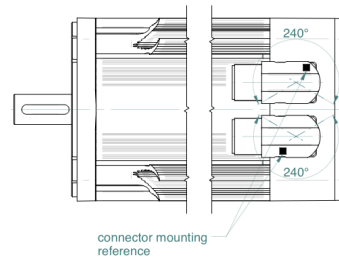
TETRA COMPACT 100 WITH BRAKE



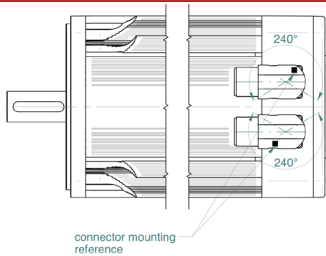
TETRA 115



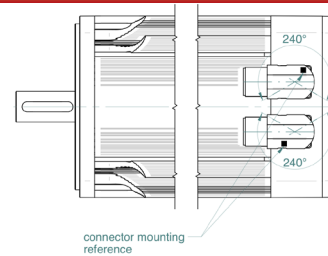
TETRA 115 WITH BRAKE



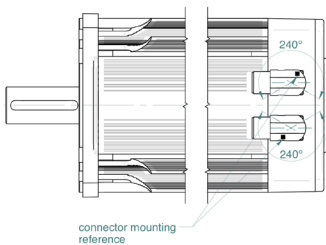
TETRA 142



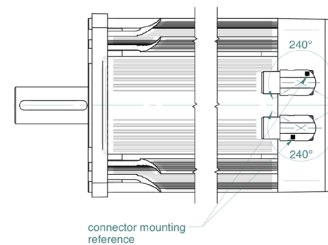
TETRA 142 WITH BRAKE



TETRA 180



TETRA 180 WITH BRAKE





DIGITAL SERVO DRIVES

LITE PRO

FLEXI PRO

SEE IT BEFORE IT HAPPENS

**MOTOR
POWER**
COMPANY

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

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

INTERFACE

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

CANopen



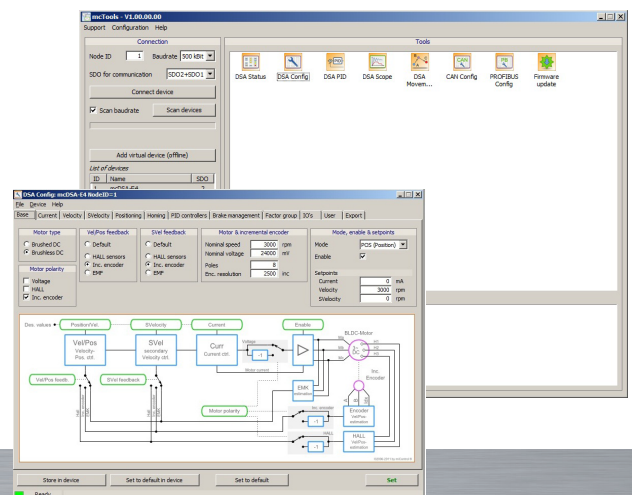
COMPACT AND PROFITABLE

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



The FLEXI PRO series features a high-performance digital servo drive offering advanced functionality, high power density and seamless commissioning in a superior package. The innovative hardware design and software algorithms boast outstanding performance in one of the smallest footprints in the market.

FEATURES

- > **MULTIFEEDBACK**
- > **DIGITAL I/O: 11 DIGITAL INPUT AND 6 OUTPUT CUSTOMIZABLE WITH SEVERAL BUILT-IN FUNCTIONS AND INTERNAL SCRIPT**
- > **CONTROL: HD ADVANCED CONTROL LOOP WITH ADAPTIVE GAINS**
- > **SERVO MODES: TORQUE, VELOCITY AND POSITION WITH S-CURVE PROFILE**
- > **STO SIL 2**
- > **INTEGRATED SUPPORT FOR EXTERNAL BRAKING RESISTOR**
- > **COMPLETE MOTOR DATABASE**

BENEFITS

- > **INTELLIGENT AUTO-TUNING - MINIMIZES POSITION ERROR AND SETTLING TIME TO ALMOST ZERO**

Engineering experience and expertise has been implemented in a sophisticated Auto-Tuning function that performs optimal configurations for a difference-making performance

- > **NEW CURRENT LOOP DESIGN - ACHIEVES AN INDUSTRY-LEADING FREQUENCY RESPONSE OF UP TO 3.0 KHZ**

Rapid control loop sample rates and flexible filtering options provide a faster response, and ensure maximum machine accuracy and throughput

- > **INNOVATIVE ANTI-VIBRATION ALGORITHM - ELIMINATES MECHANICAL RESONANCE**

An active-non-linear algorithm eliminates vibration in highly flexible resonant systems. Commissioning is easy since only few gain parameters are required



INTERFACE

- > **USB WITH DAISY CHAIN CAPABILITY**
- > **PULSE & DIRECTION**
- > **ANALOG VELOCITY AND TORQUE COMMAND $\pm 10V$**

CANopen

EtherCAT

FLEXIBLE AND COMPREHENSIVE

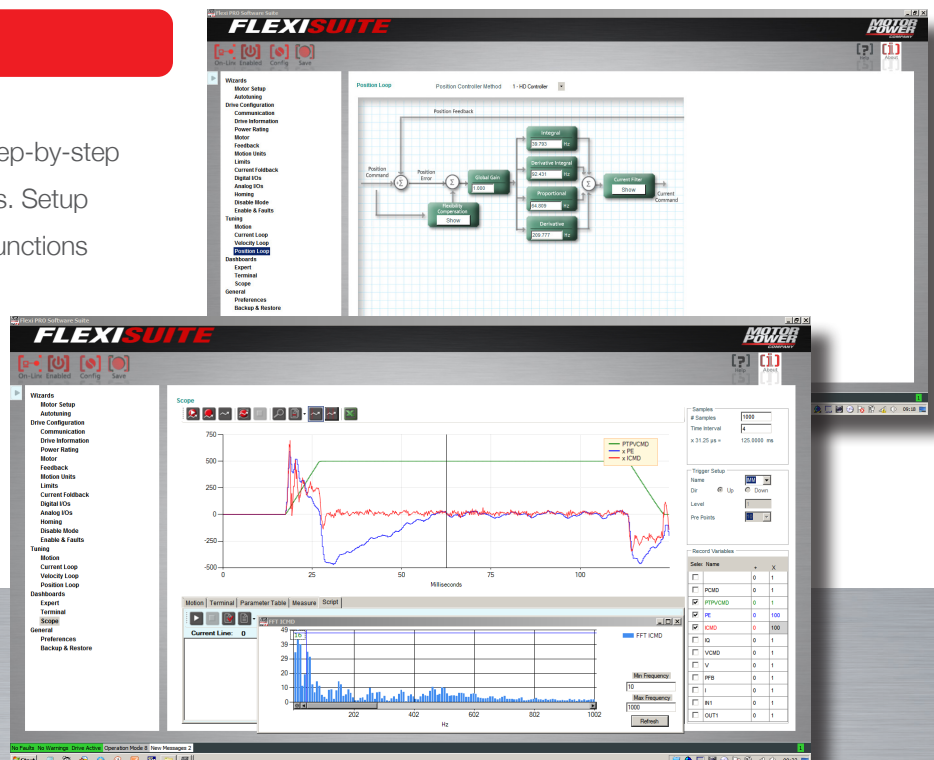
PRODUCT DATA

FEATURE	UNITS	FPRO 1D5	FPRO 003	FPRO 4D5	FPRO 006	FPRO 008	FPRO 010	FPRO 013	FPRO 020	FPRO 024	FPRO 003	FPRO 006	FPRO 012	FPRO 024	FPRO 030		
Input Voltage	VAC	120/240 VAC Single Phase			240 VAC Single or Three Phase				120/240 VAC Three Phase		400/480 VAC Tree Phase						
Max Continuous power output	W	350	700	1000	1400	1800	2300	3000	4500	5500	1100	2200	4400	9000	11000		
Efficiency at rated Power	%	> 90															
Auxiliary Supply Voltage		120 .. 240 Vac										24 Vdc					
Continuous current rms	A rms	1,5	3	4,5	6	8	10	13	20	24	3	6	12	24	30		
Peak current	A rms	4,5	9	18	18	28	28	28	48	48	9	18	24	72	90		
Ambient Operating Temperature	°C	0 to + 45															
Maximum Humidity	%	90% not condensing															
Vibration		0.6G 10-60 Hz															
Shock		1 G															
Mounting Method		Wall Mount															
Dimensions	WxDxH mm	43x144x150			55x167x150			62x182x170			117x194x234		110x193x163			FPRO 012 117x194x234	
		FPRO 024 - FPRO 030 147x209x353															
Weight	Kg	0,7	0,75	0,97	0,97	1,15	1,15	1,15	3,2	3,2	2,1	2,1	3,2	10,5	10,5		

FLEXI PRO SUITE

> SIMPLIFIES SETUP, TESTING AND TUNING

User-friendly FLEXI SUITE software provides step-by-step guidance through the setup and tuning process. Setup and testing are intuitive thanks to auto-tuning functions and graphic representations of control loops





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**MOTOR
POWER**
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motorpowerco.com

MOTORS

MOTION CONTROL

MECHATRONICS

**MOTOR
POWER**
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