

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	3,48	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	36,2
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	1,21
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)			

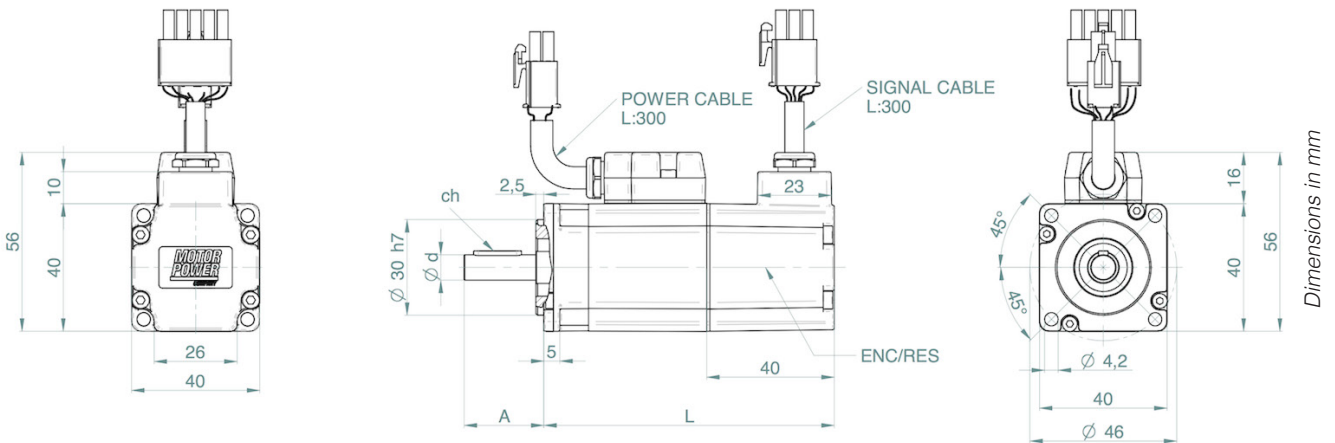
Rated output with 250 x 250 x 6 mm aluminum heat sink flange coupling - Derating must be considered if the oil seal is applied - IP 54 standard shaft bushing (*) without brake and without feedback

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

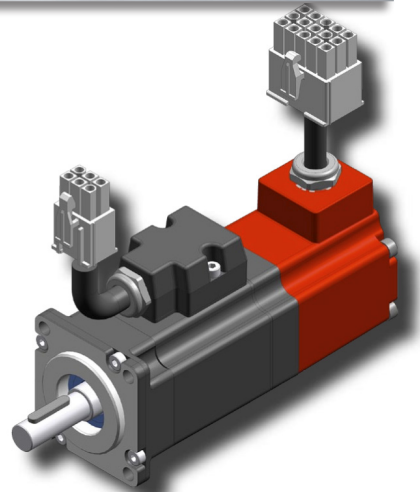


Power connector 6 PIN AMP 172168 - Signal connector 15 PIN AMP 172171

SEE IT BEFORE IT HAPPENS

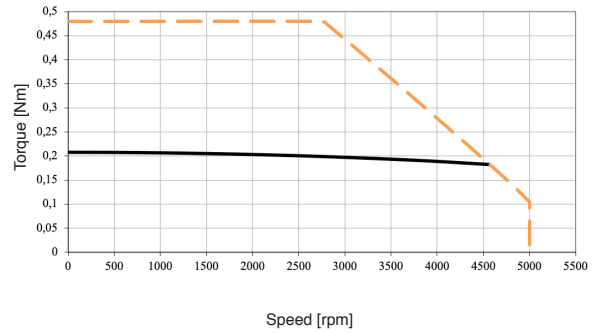
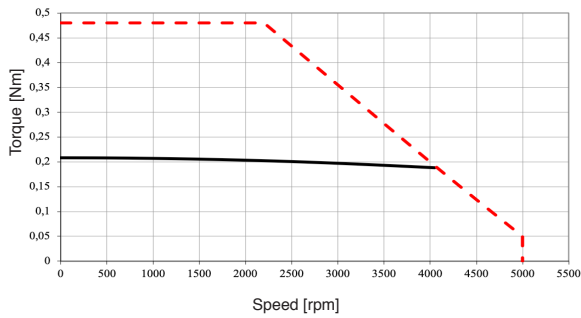


TETRA COMPACT 40 TORQUE / SPEED CHARTS



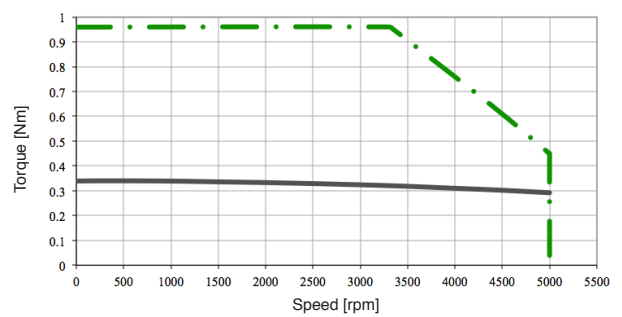
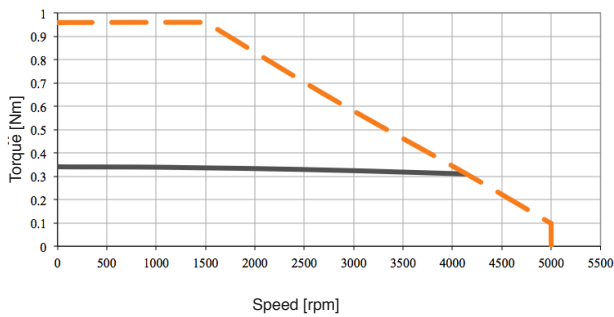
TETRA COMPACT 40 0,16 32

TETRA COMPACT 40 0,16 01

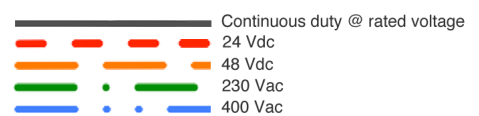


TETRA COMPACT 40 0,32 01

TETRA COMPACT 40 0,32 21



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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	

	<i>TC 60 0,65 21</i>	<i>TC 60 1,3 21</i>	<i>TC 60 1,3 15</i>
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			<i>TC 60 0,65 21</i>	<i>TC 60 1,3 21</i>	<i>TC 60 1,3 15</i>
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

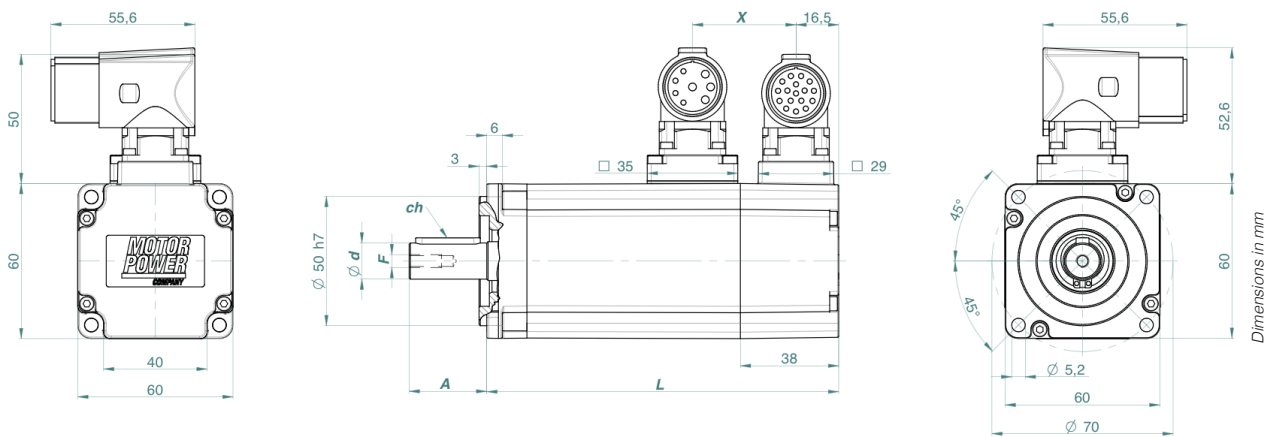
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TETRA COMPACT 60 DIMENSIONS

		TC 60 0,65 21	TC 60 1,3 21	TC 60 1,3 15
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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

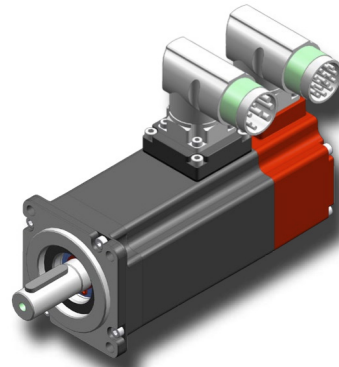


Power connector 4+4 PIN M23 turnable BEDC 110 - Signal connector 17 PIN M23 turnable AEDC 139

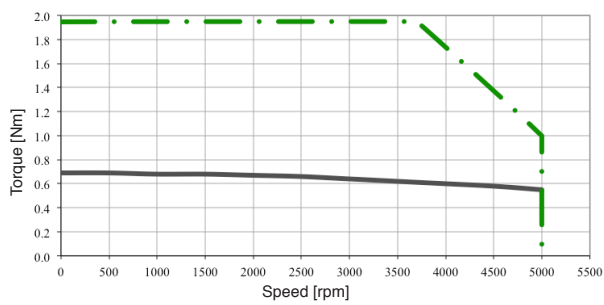
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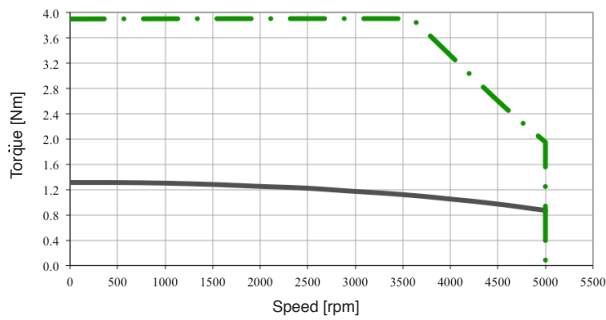
TETRA COMPACT 60 TORQUE /SPEED CHARTS



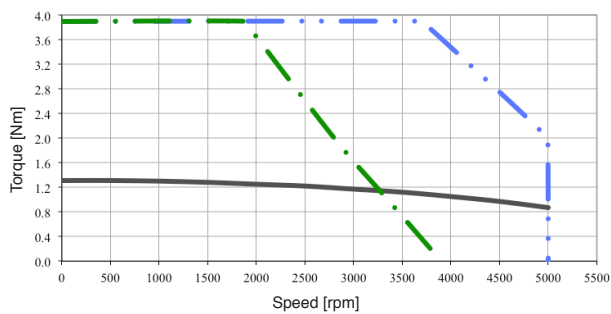
TETRA COMPACT 60 0,65 21



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

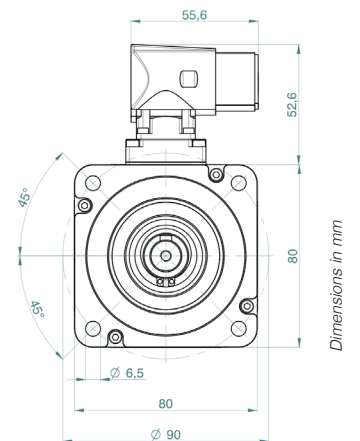
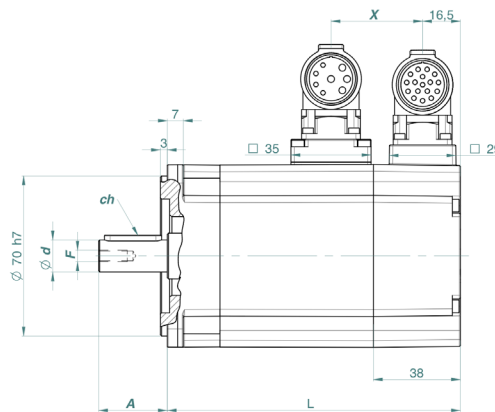
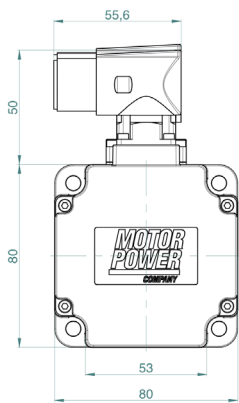
Continuous stall torque	M_0	Nm	1,74	1,74	2,96	2,96
Peak torque	M_{max}	Nm	4,5	4,5	8,4	8,4
Nominal torque	M_n	Nm	1,53	1,53	2,55	2,55
Rated voltage	U_n	V	230	400	230	400
Nominal power	P_N	W	480	480	800	800
Continuous stall current	I_0	A_{rms}	3,31	1,91	5,63	3,25
Maximum current	I_{max}	A_{rms}	8,55	4,95	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}	$V_{rms}/Krpm$	31,8	55,0	31,8	55,0
Winding resistance	R_{20u-v}	Ohm	2,3	6,5	0,99	3,0
Winding inductance	L_{qu-v}	mH	7,4	22,2	4,4	13,2
Electrical time constant	T_e	ms	3,2	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

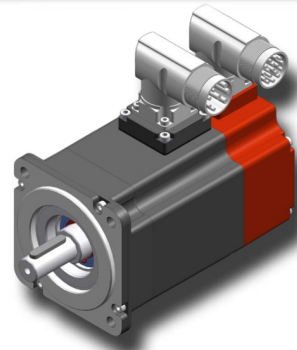


Power connector 4+4 PIN M23 turnable BEDC 110 - Signal connector 17 PIN M23 turnable AEDC 139

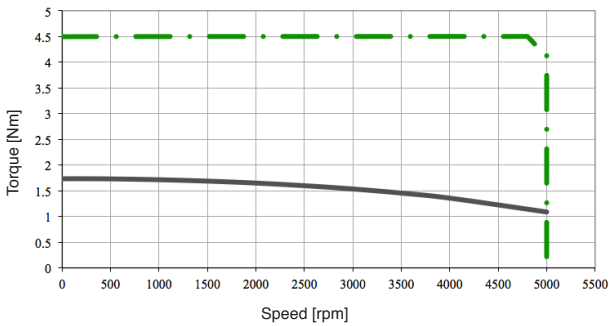
SEE IT BEFORE IT HAPPENS



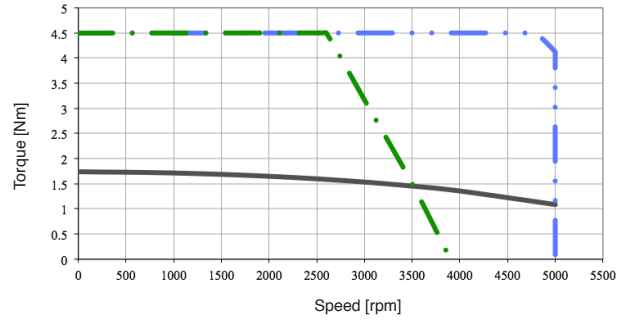
TETRA COMPACT 80 TORQUE /SPEED CHARTS - Sizes 1,5 - 2,8



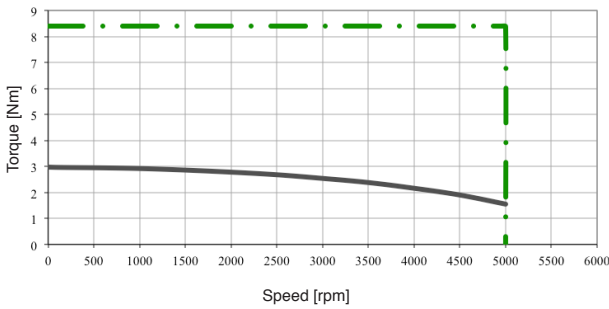
TETRA COMPACT 80 1,5 21



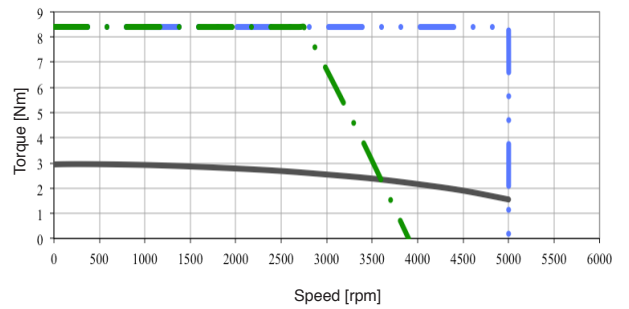
TETRA COMPACT 80 1,5 15



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	1,9	6,5
Winding inductance	L_{qu-v}	mH	8,9	28,6
Electrical time constant	T_e	ms	4,7	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

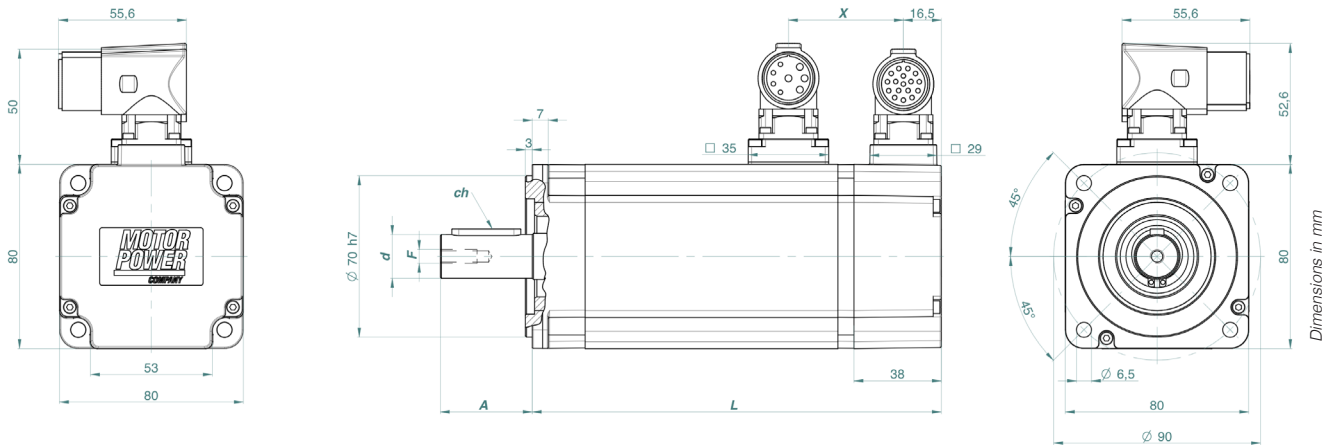
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TETRA COMPACT 80 DIMENSIONS - Size 4

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

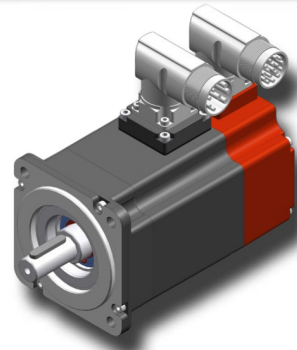


Power connector 4+4 PIN M23 turnable BEDC 110 - Signal connector 17 PIN M23 turnable AEDC 139

SEE IT BEFORE IT HAPPENS

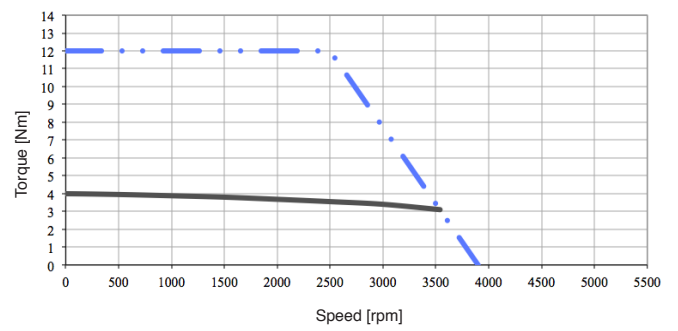
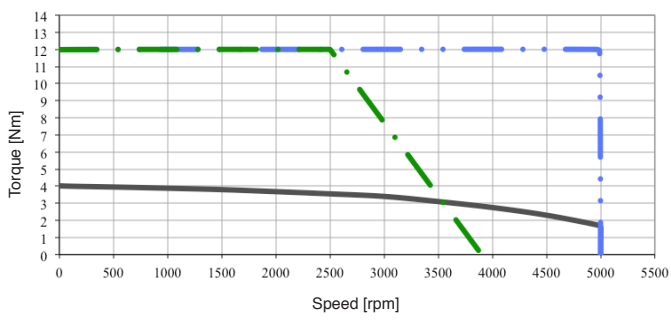
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TETRA COMPACT 80 TORQUE /SPEED CHARTS - Size 4



TETRA COMPACT 80 4 15

TETRA COMPACT 80 4 17



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

TETRA COMPACT 100 RATINGS AND SPECIFICATIONS

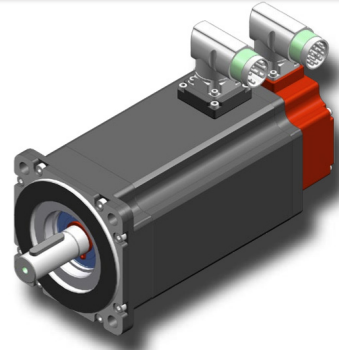
TIME RATING	Continuous	AMBIENT TEMPERATURE	0 to 40 °C
INSULATION CLASS	F	AMBIENT HUMIDITY	5 to 85% (non-condensing)
ENCLOSURE	Totally enclosed. Self-cooled	POLES	8
PROTECTION CLASS	IP 65 standard on the body	THERMAL PROTECTION	PT 1000
INSULATION SYSTEM UL /CSA	cURus , DV155J File nr.:E216686	CE certified	

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	8,0
Peak torque	M_{max}	Nm	11,0	11,0	22,0	33,0
Nominal torque	M_n	Nm	2,61	2,61	4,2	5,0
Rated voltage	U_n	Vac	230	400	400	400
Nominal power	P_N	W	820	820	1320	1570
Continuous stall current	I_0	Arms	6,08	3,52	6,15	8,79
Maximum current	I_{max}	Arms	20,91	12,09	24,18	36,27
Nominal current	I_N	Arms	5,11	2,96	4,76	5,66
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	1,1	2,90	1,17	0,69
Winding inductance	L_{qu-v}	mH	4,44	13,28	6,33	4,22
Electrical time constant	T_e	ms	4,03	4,58	5,41	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)			

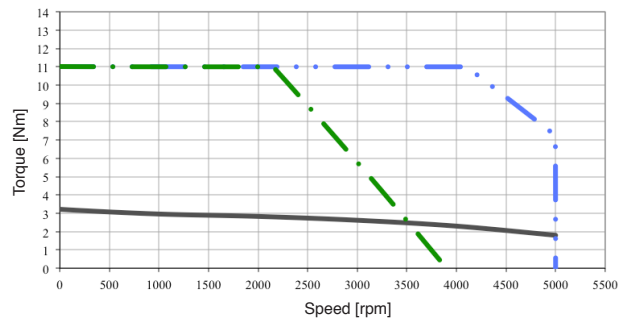
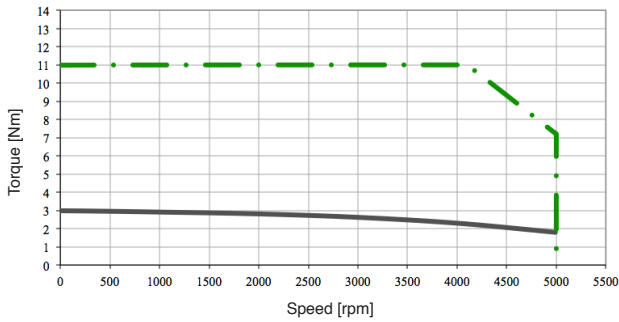
Rated Output with 300 x 300 x 6 mm aluminum heat sink flange coupling - Derating must be considered if the oil seal is applied - IP 54 standard shaft bushing (*) without brake and without feedback

TETRA COMPACT 100 TORQUE / SPEED CHARTS



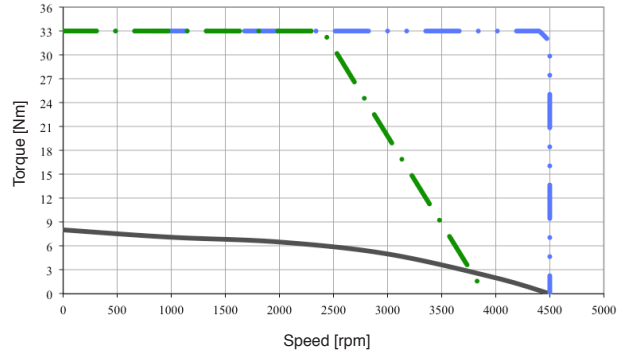
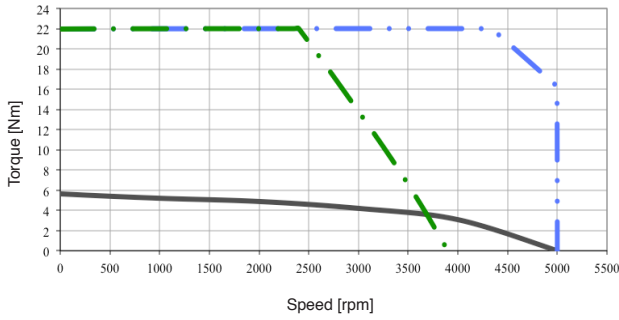
TETRA COMPACT 100 3,2 21

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	$^{\circ}C/W$	$^{\circ}C/W$	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 flange coupling - Derating must be considered if the oil seal is applied - IP 54 standard shaft bushing
^(a) without brake and without feedback

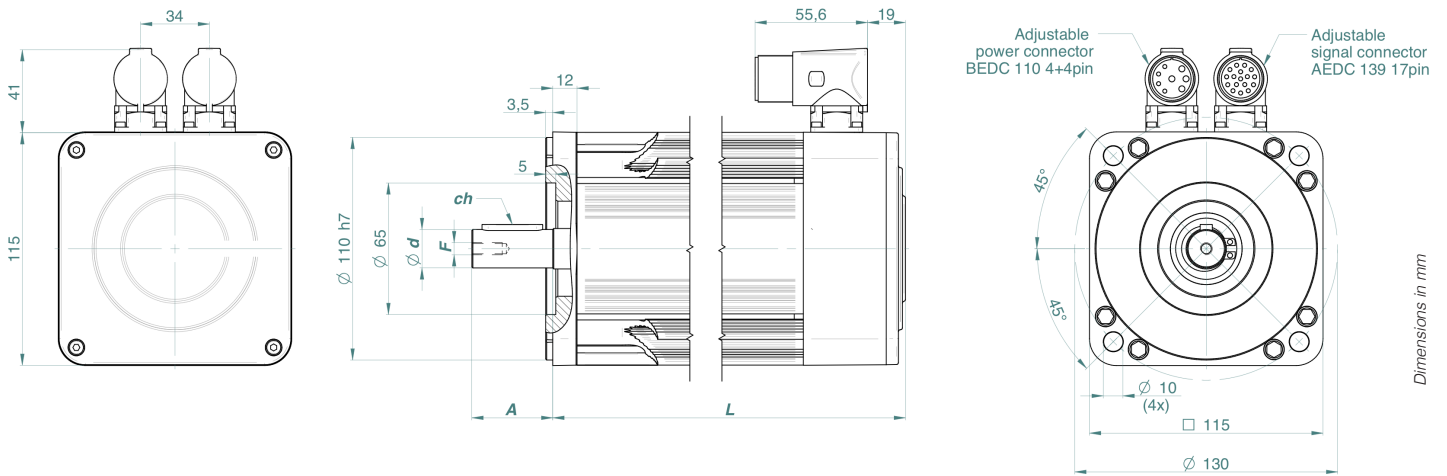
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TETRA 115 DIMENSIONS - Sizes 3 - 5,2 - 7

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

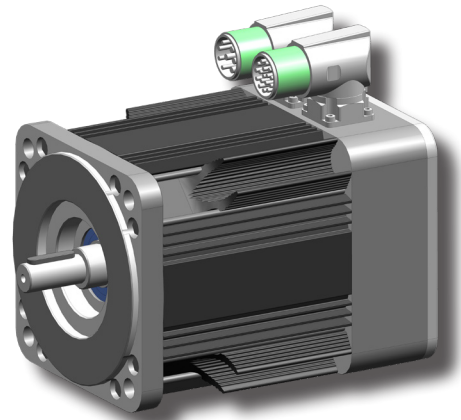


Power connector 4+4 PIN M23 turnable BEDC 110 - Signal connector 17 PIN M23 turnable AEDC 139

SEE IT BEFORE IT HAPPENS

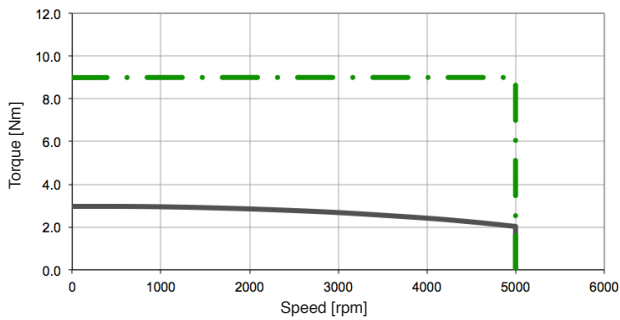
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TETRA 115 TORQUE / SPEED CHARTS Sizes 3 - 5,2 - 7

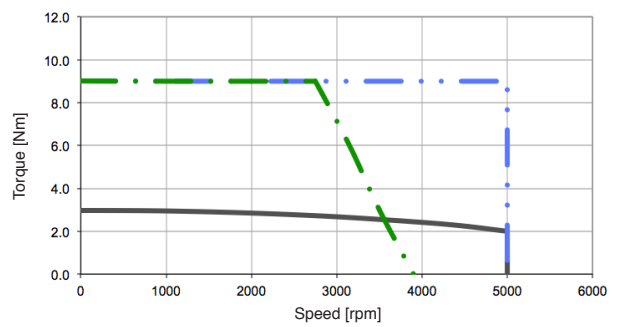


- Continuous duty @ rated voltage
- - - 24 Vdc
- - - 48 Vdc
- · - 230 Vac
- · - 400 Vac

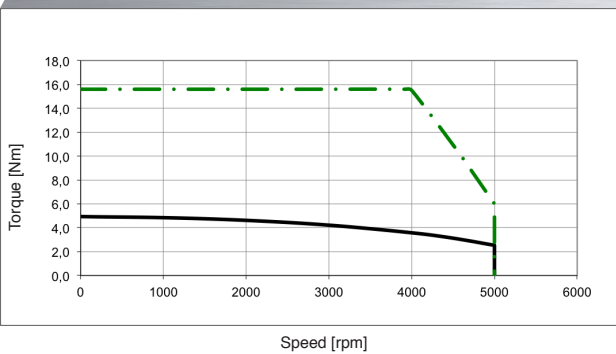
TETRA 115 3 21



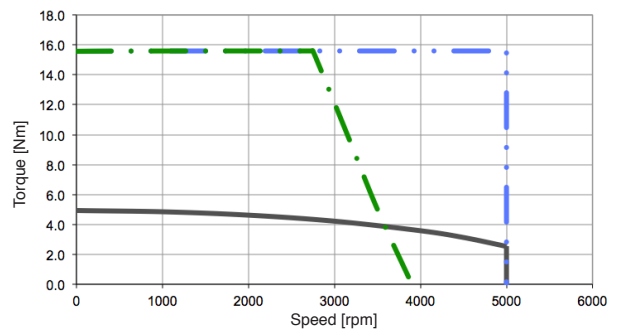
TETRA 115 3 15



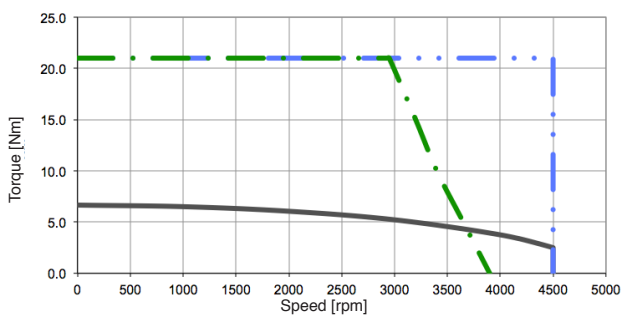
TETRA 115 5,2 14



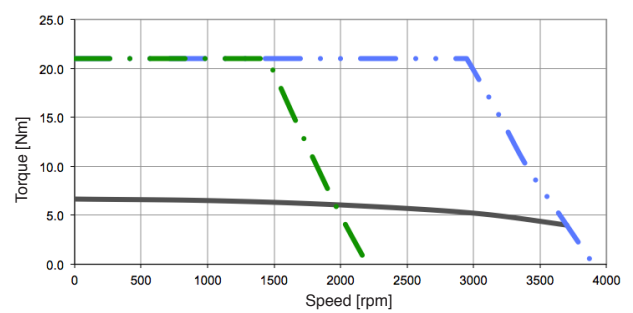
TETRA 115 5,2 15



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	

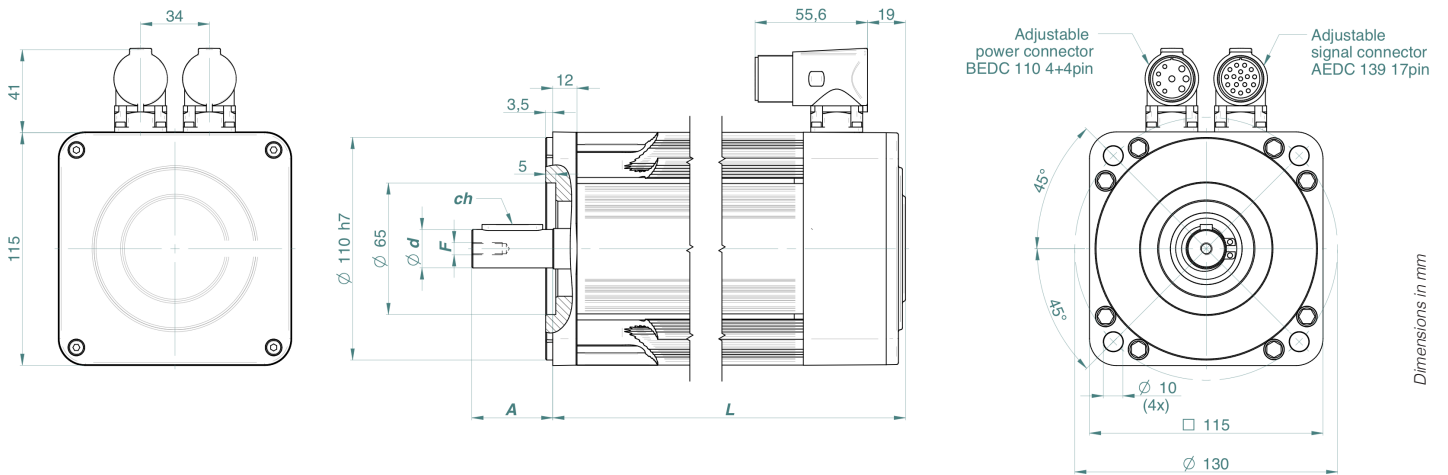
			T115 9,2 15	T115 9,2 17	T115 11 15	T115 11 17
Continuous stall torque	M_0	Nm	8,5	8,5	9,5	9,5
Peak torque	M_{max}	Nm	27,6	27,6	33,0	33,0
Nominal torque	M_n	Nm	6,4	6,4	7,3	7,3
Rated voltage	U_n	Vac	230	400	230	400
Nominal power	P_N	W	2000	2000	2300	2300
Continuous stall current	I_0	Arms	9,3	5,3	10,4	5,9
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

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



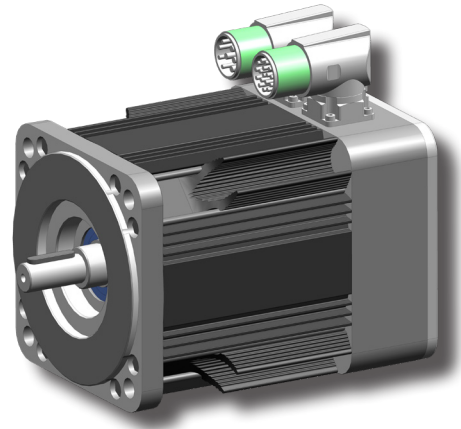
Power connector 4+4 PIN M23 turnable BEDC 110 - Signal connector 17 PIN M23 turnable AEDC 139

Dimensions in mm

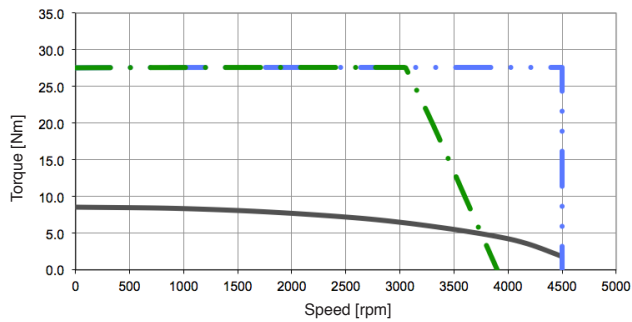
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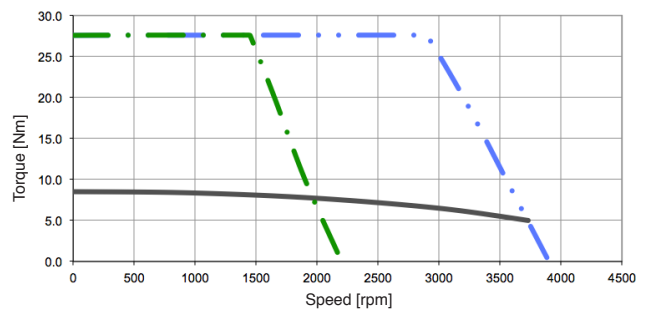
TETRA 115 TORQUE / SPEED CHARTS - Sizes 9,2- 11



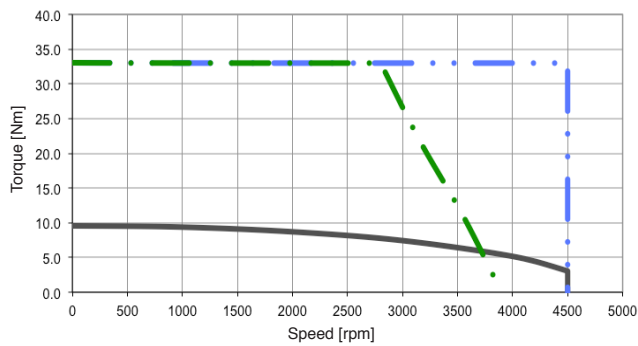
TETRA 115 9,2 15



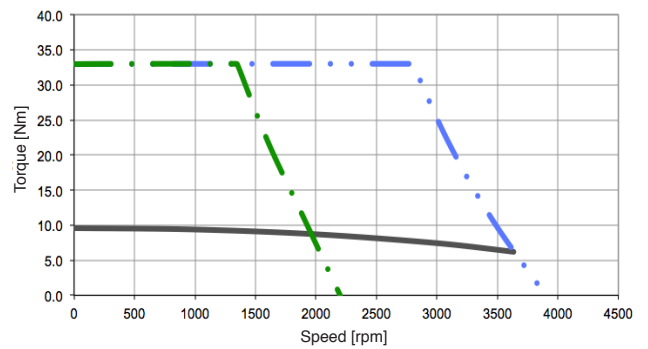
TETRA 115 9,2 17



TETRA 115 11 15



TETRA 115 11 17



SEE IT BEFORE IT HAPPENS



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

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

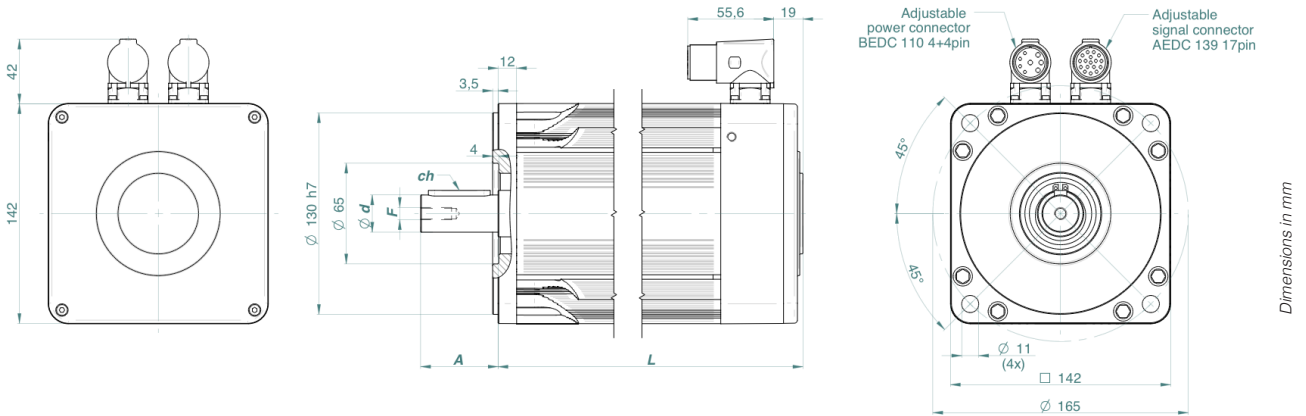
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TETRA 142 DIMENSIONS Sizes 12 - 16,5

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

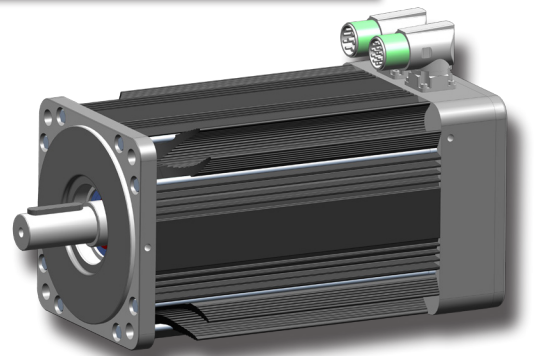


Power connector 4+4 PIN M23 turnable BEDC 110 - Signal connector 17 PIN M23 turnable AEDC 139

Dimensions in mm

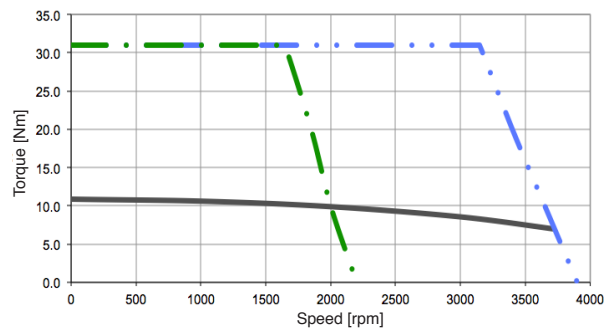
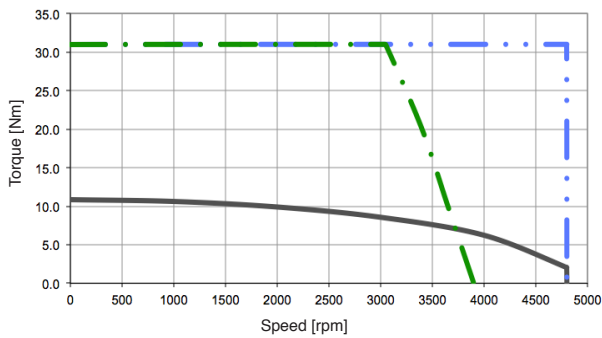
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TETRA 142 TORQUE / SPEED CHARTS Sizes 12 - 16,5



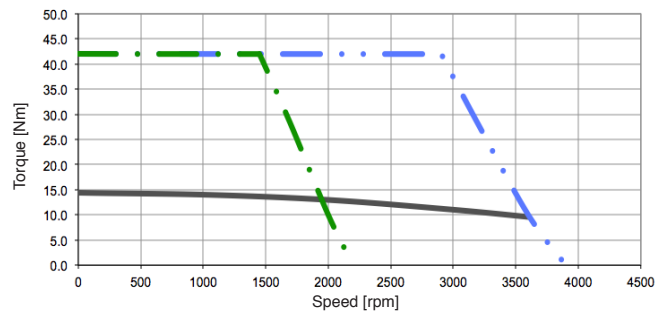
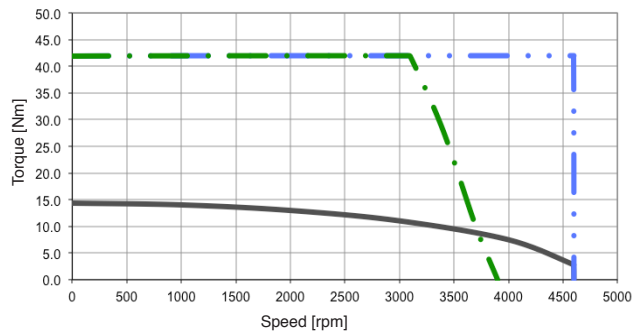
TETRA 142 12 15

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

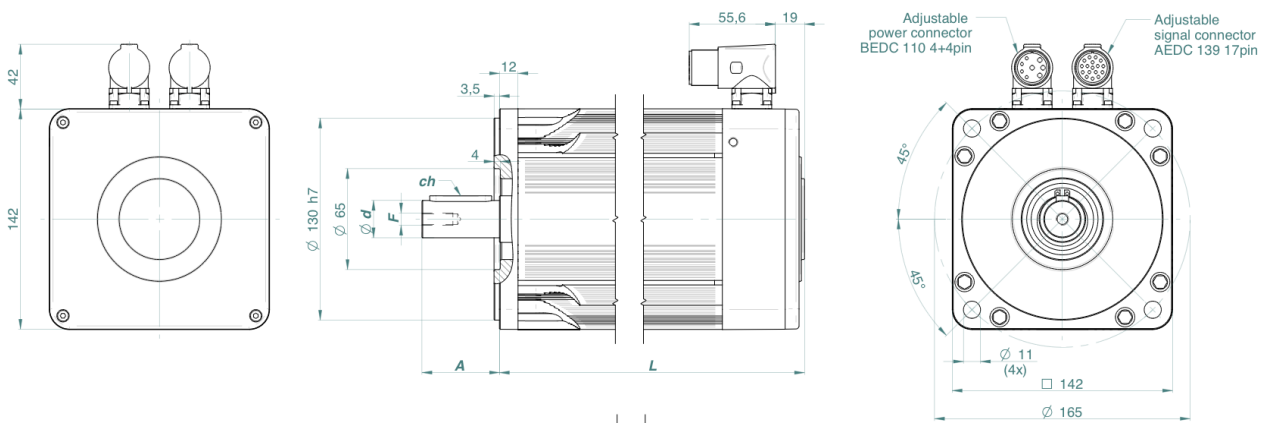
T142 21 15

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



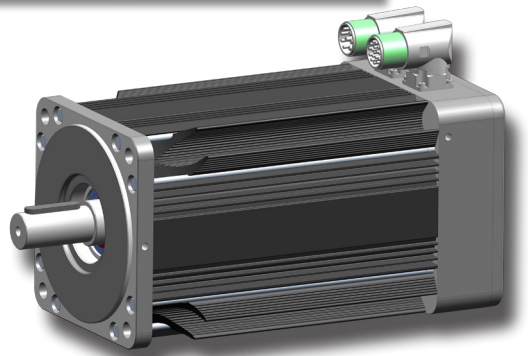
Power connector 4+4 PIN M23 turnable BEDC 110 - Signal connector 17 PIN M23 turnable AEDC 139

Dimensions in mm

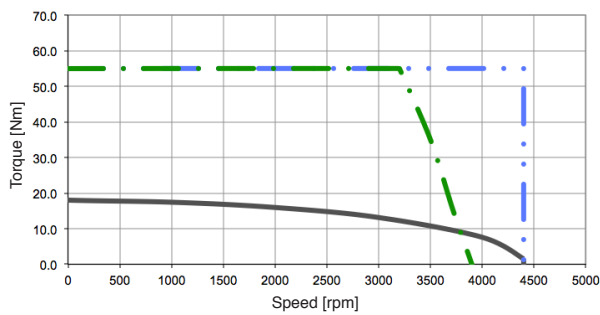
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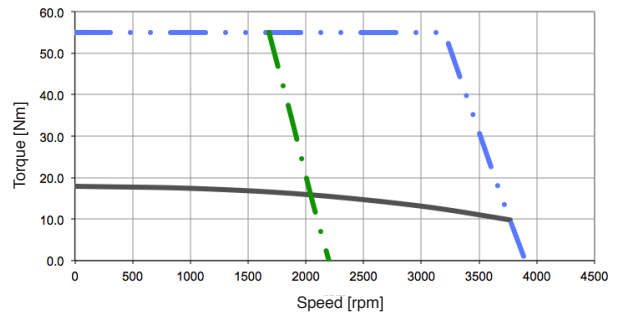
TETRA 142 TORQUE / SPEED CHARTS - Sizes 21 - 25,5



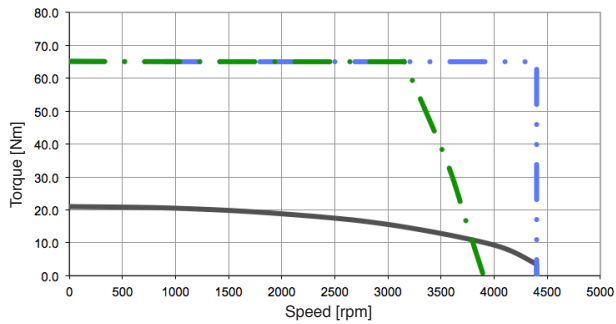
TETRA 142 21 15



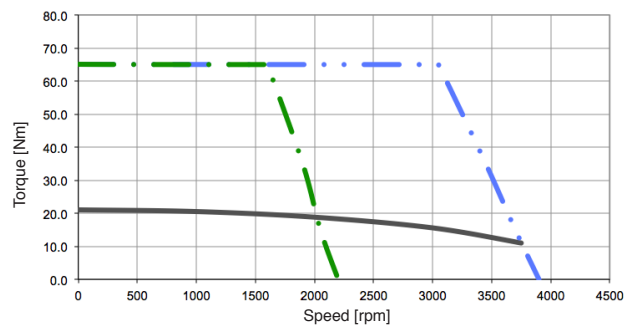
TETRA 142 21 17



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

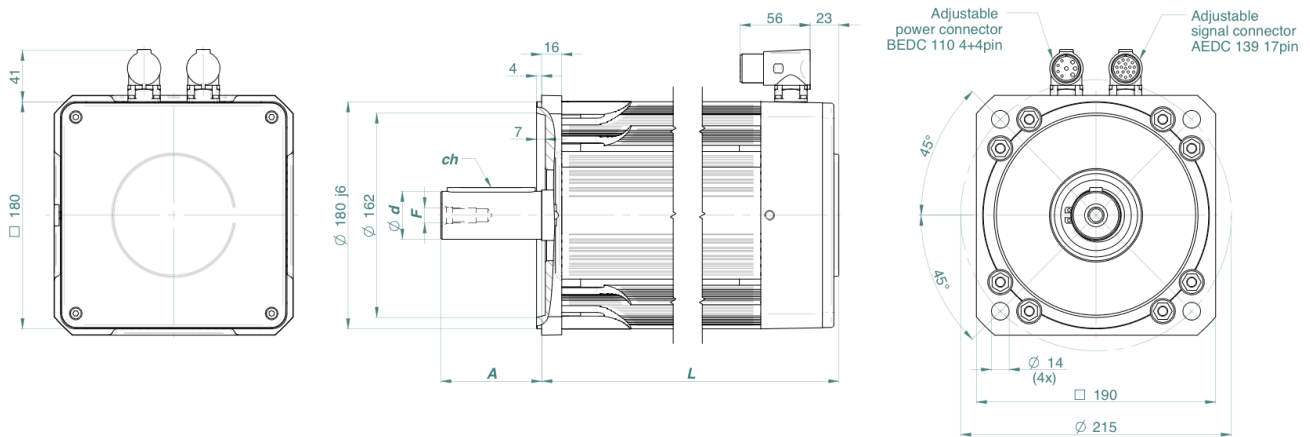
TIME RATING	Continuous	AMBIENT TEMPERATURE	0 to 40 °C
INSULATION CLASS	F	AMBIENT HUMIDITY	5 to 85% (non-condensing)
ENCLOSURE	Totally enclosed. Self-cooled	POLES	6
PROTECTION CLASS	IP 65 standard on the body	THERMAL PROTECTION	PT 1000
INSULATION SYSTEM UL /CSA	cURus , DV155J File nr.:E216686	CE certified	

			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

TETRA 180 RATINGS AND SPECIFICATIONS

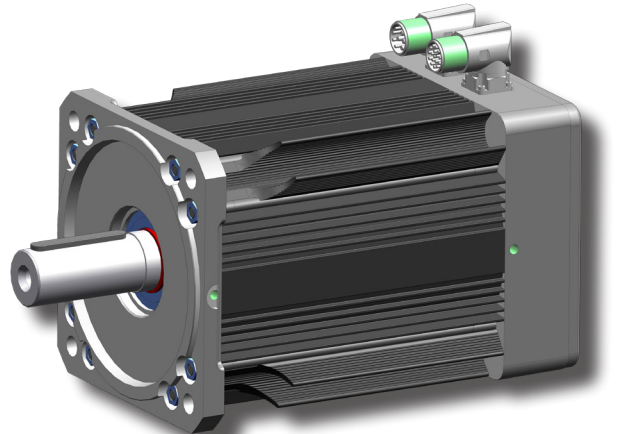
		T180 22,5 17	T180 35 17	T180 47 17
L (Without Brake)	mm	290	350	410
L (With Brake)	mm	350	410	470
A	mm	60	80	80
d	mm	28 (j6)	38 (k6)	38 (k6)
ch	mm	8x7x50	10x8x70	10x8x70
F	mm	M10x22	M12x28	M12x28



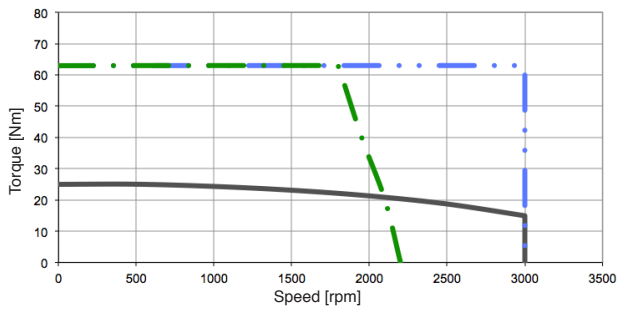
Power connector 4+4 PIN M23 turnable BEDC 110 - Signal connector 17 PIN M23 turnable AEDC 139

Dimensions in mm

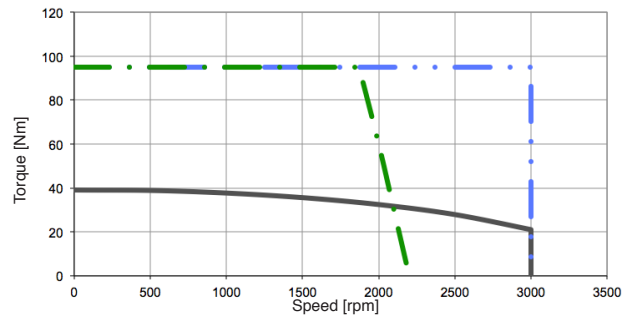
TETRA 180 TORQUE / SPEED CHARTS



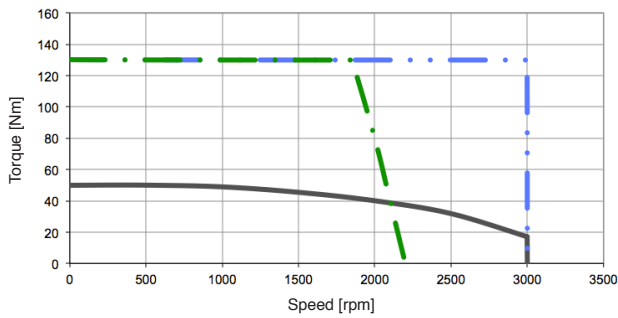
TETRA 180 22,5 17



TETRA 180 35 17



TETRA 180 47 17



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

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

**MOTOR
POWER**
COMPANY

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