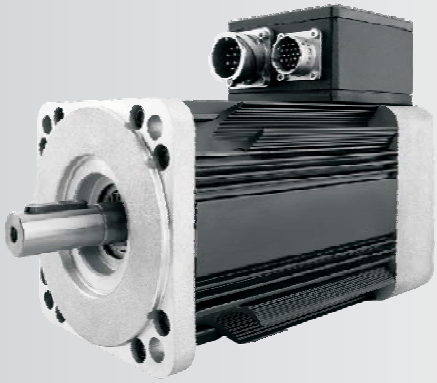
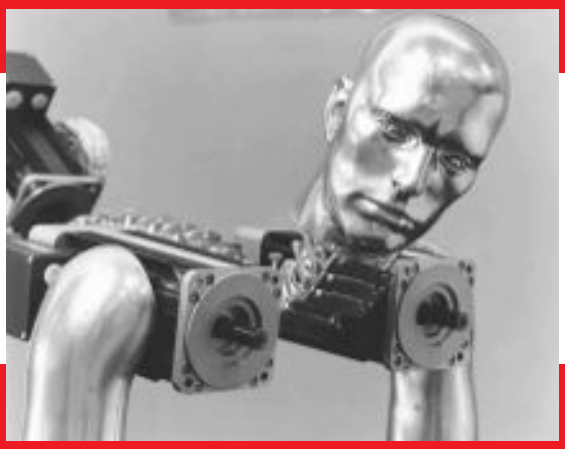
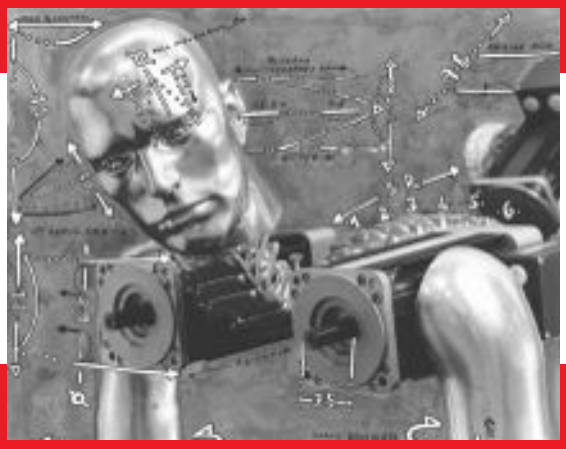
TETRA Sinewave



BRUSHLESS SERVOMOTOR



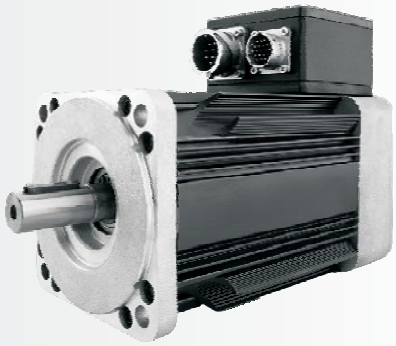


MOTOR POWER COMPANY

www.motorpowerco.com

TETRA

This is an innovative series of electronic commutation synchronous servomotors with NdFeB permanent magnets.A complete series with very compact dimensions which represent the result of the exceptional exploitation of the electromagnetic circuit. The performance is excellent thanks to the constructive system that concurs to reduce the losses of flow.



Brushless Servomotor	*Rated Stall Torque (Nm)*	*Rated Speed (Rpm)*	*Motor Dimensions (mm)*	*Brake Length (mm)*	*Motor Length (mm)*
TETRA 56 0.5	0.5	from 1600 to 3000	56x56	30*	135
TETRA 56 0.9	0.9				165
TETRA 56 1.35	1.35				195
TETRA 85 1.2	1.2	from 1300 to 5200	85x85	30*	166
TETRA 85 2.2	2.2				196
TETRA 85 3.2	3.2				226
TETRA 85 4.2	4.2				256
TETRA 115 3	3	from 1300 to 5200	115x115	50*	164
TETRA 115 5.2	5.2				189
TETRA 115 7	7				214
TETRA 115 9.2	9.2				239
TETRA 115 11	11				264
TETRA 142 12	12	from 1150 to 4000	142x142	60*	245
TETRA 142 16.5	16.5				275
TETRA 142 21	21				305
TETRA 142 25.5	25.5				335
TETRA 180 22.5	22.5	da 1200 a 3000	180x180	60*	290
TETRA 180 35	35				350
TETRA 180 47	47				410
TETRA 180 60	60				470

* The emergency brake increases the motor lenght with value “Brake Lenght”

Sinewave or squarewave form
Sinusoidal drive from 45 to 400 Vac
Trapezoidal drive from 60 to 540 Vdc
IP 65 protection
Class F insulation
Transducers: Resolver, Encoder + Hall Sensors, Hall Sensors
Winding in compliance with UL regulations

SERIES

TETRA 56

HOW TO ORDER A BRUSHLESS SERVOMOTOR SERIES TETRA 56

TETRA	56	SR	0.50	E	L	01	001	A	00.02
SERIES	TYPE	WAVEFORM	NOMINAL STALL TORQUE	TRANSDUCER TYPE	MOMENT OF INERTIA	WINDING CODE	TRANSDUCER MODEL	CONNECTION POSITION	MODEL LIST
TETRA	**56**	**SR** = sinewave **TR** = squarewave	**0.50** **0.9** **1.35**	**E** = Encoder **R** = Resolver **H** = Hall Sensor	**L** = Low	See Data Sheet	**001** = Encoder ∅35 4p 2000 ppr **002** = Encoder ∅35 4p 1000 ppr **401** = Resolver 2p size 15 **008** = Hall Sensor 4p	**A** = Std. **B** = On req. **C** = On req. **D** = On req.	**00** = No prearranged **01** = External Encoder prearranged **02** = With brake **04** = Double connector **05** = Double cable gland on terminal box **08** = Connector + cable gland on terminal box

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BRUSHLESS SERVOMOTORS

SERIES

TETRA 56SR 0.5

TORQUE

0.5 Nm

	SINEWAVE FORM	SYMBOLS	UNITS	TYPE OF WINDING							
				01	02	03	04	08	12	14	15
MOTOR rpm	Vn drive 3phase 45 V ac		[rpm]	6000	5000	4000	3000	2000	1400		
	Vn drive 3phase 95 V ac		[rpm]				6300	4200	3000	2000	1300
	Vn drive 3phase 145 V ac		[rpm]						4500	3000	2000
	Vn drive 3phase 220 V ac		[rpm]							4600	3000
	Vn drive 3phase 380 V ac		[rpm]								5200
SERVOMOTOR	WINDING DATA										
	Poles number	P		4							
	Continuos stall torque (*1)	Cn0	[Nm]	0.5							
	Voltage constant ± 5%	Ke	[V_{rms}/K_{rpm}]	5.7	6.8	8.5	11.3	17.0	24.0	36.0	55.0
	Torque constant ± 5%	Kt	[Nm/A_{rms}]	0.09	0.11	0.14	0.19	0.28	0.40	0.60	0.91
	Stall current	In0	[Arms]	5.33	4.44	3.56	2.67	1.78	1.26	0.84	0.55
	Peak torque	Cmax	[Nm]	1.5							
	Peak current	I cmax	[Arms]	16.0	13.3	10.7	8.0	5.3	3.8	2.5	1.6
	Max current	I max	[Arms]	18.7	15.6	12.4	9.3	6.2	4.4	2.9	1.9
	Ph/ph resistance ±10% at 25°C	Rff	[Ohm]	0.67	1.04	1.66	2.82	6.52	11.63	28.12	67.20
	Phase / phase inductance	Lff	[mH]	0.57	0.89	1.40	2.52	5.62	11.15	25.09	56.86
	Electrical time constant	Te	[ms]	0.85	0.85	0.84	0.89	0.86	0.96	0.89	0.85
	Thermal time constant	Tt	[min]	35							
	Operating temperature	Tr	[°C]	0 + 40							
	Protection degree	IP		65 (*)							
	Insulation class			F							
	MECHANICAL DATA										
	Moment of inertia	Jm	[Kg cm^2]	0.16							
	Max theorethical acceleration	αmax	[rad/s^2]	93750							
	Mechanical time constant	Tm	[ms]	1.98	2.07	2.04	1.88	2.00	1.74	1.87	1.95
	Cogging torque	Tcog	[Nm]	0.015							
	Damping constant at 1000 rpm	Td	[Nm]	0.012							
	Max radial load (at 3000 rpm)	Fr	[N]	240 (applied on the shaft's middle)							
	Max axial load	Fa	[N]	76 (applied on the shaft's middle)							
	Weight	M	[Kg]	1.5							
THERMAL P.	Type of thermal cut - off			N C : normally closed							
	Rated voltage	Vn	[V ac]	250							
	Rated current	In	[A]	2.5							
	Operative temperature	Tn	[°C]	140 °C ± 5%							
	Resetting temperature	Tr	[°C]	100 °C ± 15°C							
	Operative time	[ms]		1							
	Insulation class			F							
BRAKE	Type			STD 2							
	Static torque	Co	[Nm]	2							
	Rated voltage	Vn	[V]	24 Vcc + 6% -10% Stabilized							
	Rated current	In	[A]	0.46							
	Input power	Pn	[W]	11							
	Engaging time	Tr	[ms]	6							
	Release time	Tl	[ms]	25							

(*) with oil seal mounted on the flange (*1) Output continuous ratings with 250 x 250 x20 mm metallic heat sink flange coupling

DATA SHEET N° 1B1102010004

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BRUSHLESS SERVOMOTORS

SERIES

TETRA 56SR0.9

TORQUE

0.9 Nm

	SINEWAVE FORM	SYMBOLS	UNITS	TYPE OF WINDING							
				01	02	03	04	08	12	14	15
MOTOR rpm	Vn drive 3phase 45 V ac		[rpm]	6000	5000	4000	3000	2000	1400		
	Vn drive 3phase 95 V ac		[rpm]				6300	4200	3000	2000	1300
	Vn drive 3phase 145 V ac		[rpm]						4500	3000	2000
	Vn drive 3phase 220 V ac		[rpm]							4600	3000
	Vn drive 3phase 380 V ac		[rpm]								5200
SERVOMOTOR	WINDING DATA										
	Poles number	P		4							
	Continuos stall torque (*1)	Cn0	[Nm]	0.90							
	Voltage constant ± 5%	Ke	[V_{rms}/K_{rpm}]	5.7	6.8	8.5	11.3	17.0	24.0	36.0	55.0
	Torque constant ± 5%	Kt	[Nm/A_{rms}]	0.09	0.11	0.14	0.19	0.28	0.40	0.60	0.91
	Stall current	In0	[Arms]	9.60	8.00	6.40	4.80	3.20	2.27	1.51	0.99
	Peak torque	Cmax	[Nm]	2.7							
	Peak current	I cmax	[Arms]	28.8	24.0	19.2	14.4	9.6	6.8	4.5	3.0
	Max current	I max	[Arms]	33.6	28.0	22.4	16.8	11.2	7.9	5.3	3.5
	Ph/ph resistance ±10% at 25°C	Rff	[Ohm]	0.27	0.50	0.80	1.36	2.93	5.92	13.13	25.07
	Phase / phase inductance	Lff	[mH]	0.36	0.56	0.88	1.62	2.96	7.67	15.44	34.95
	Electrical time constant	Te	[ms]	1.33	1.11	1.10	1.19	1.01	1.30	1.18	1.39
	Thermal time constant	Tt	[min]	40							
	Operating temperature	Tr	[°C]	0 + 40							
	Protection degree	IP		65 (*)							
	Insulation class			F							
	MECHANICAL DATA										
	Moment of inertia	Jm	[Kg cm^2]	0.23							
	Max theorethical acceleration	αmax	[rad/s^2]	117391							
	Mechanical time constant	Tm	[ms]	1.14	1.44	1.40	1.30	1.29	1.28	1.26	1.04
	Cogging torque	Tcog	[Nm]	0.027							
	Damping constant at 1000 rpm	Td	[Nm]	0.024							
	Max radial load (at 3000 rpm)	Fr	[N]	240 (applicato sulla mezzeria dell'albero)							
	Max axial load	Fa	[N]	76 (applicato sulla mezzeria dell'albero)							
	Weight	M	[Kg]	1.8							
THERMAL P.	Type of thermal cut - off			N C : normalmente chiuso							
	Rated voltage	Vn	[V ac]	250							
	Rated current	In	[A]	2.5							
	Operative temperature	Tn	[°C]	140 °C ± 5%							
	Resetting temperature	Tr	[°C]	100 °C ± 15°C							
	Operative time	[ms]		1							
	Insulation class			F							
BRAKE	Type			STD 2							
	Static torque	Co	[Nm]	2							
	Rated voltage	Vn	[V]	24 Vcc + 6% -10% Stabilizzato							
	Rated current	In	[A]	0.46							
	Input power	Pn	[W]	11							
	Engaging time	Tr	[ms]	6							
	Release time	Tl	[ms]	25							

(*) with oil seal mounted on the flange (*1) Output continuous ratings with 250 x 250 x20 mm metallic heat sink flange coupling

DATA SHEET N° 1B1102020004

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BRUSHLESS SERVOMOTORS

SERIES

TETRA 56SR1.35

TORQUE

1.35 Nm

	SINEWAVE FORM	SYMBOLS	UNITS	TYPE OF WINDING							
				01	02	03	04	08	12	14	15
MOTOR rpm	Vn drive 3phase 45 V ac		[rpm]	6000	5000	4000	3000	2000	1400		
	Vn drive 3phase 95 V ac		[rpm]				6300	4200	3000	2000	1300
	Vn drive 3phase 145 V ac		[rpm]						4500	3000	2000
	Vn drive 3phase 220 V ac		[rpm]							4600	3000
	Vn drive 3phase 380 V ac		[rpm]								5200
SERVOMOTOR	WINDING DATA										
	Poles number	P		4							
	Continuos stall torque (*1)	Cn0	[Nm]	1.35							
	Voltage constant ± 5%	Ke	[V_{rms}/K_{rpm}]	5.7	6.8	8.5	11.3	17.0	24.0	36.0	55.0
	Torque constant ± 5%	Kt	[Nm/A_{rms}]	0.09	0.11	0.14	0.19	0.28	0.40	0.60	0.91
	Stall current	In0	[Arms]	14.40	12.00	9.60	7.20	4.80	3.40	2.27	1.48
	Peak torque	Cmax	[Nm]	4.05							
	Peak current	I cmax	[Arms]	43.2	36.0	28.8	21.6	14.4	10.2	6.8	4.5
	Max current	I max	[Arms]	50.4	42.0	33.6	25.2	16.8	11.9	7.9	5.2
	Ph/ph resistance ±10% at 25°C	Rff	[Ohm]	0.30	0.44	0.45	0.72	1.70	2.96	7.20	16.25
	Phase / phase inductance	Lff	[mH]	0.13	0.18	0.27	0.49	1.06	2.12	4.77	9.95
	Electrical time constant	Te	[ms]	0.45	0.41	0.59	0.67	0.63	0.72	0.66	0.61
	Thermal time constant	Tt	[min]	45							
	Operating temperature	Tr	[°C]	0 + 40							
	Protection degree	IP		65 (*)							
	Insulation class			F							
	MECHANICAL DATA										
	Moment of inertia	Jm	[Kg cm^2]	0.37							
	Max theorethical acceleration	αmax	[rad/s^2]	109459							
	Mechanical time constant	Tm	[ms]	2.04	2.02	1.28	1.11	1.20	1.03	1.11	1.09
	Cogging torque	Tcog	[Nm]	0.0405							
	Damping constant at 1000 rpm	Td	[Nm]	0.036							
	Max radial load (at 3000 rpm)	Fr	[N]	240 (applied on the shaft's middle)							
	Max axial load	Fa	[N]	76 (applied on the shaft's middle)							
	Weight	M	[Kg]	2.2							
THERMAL P.	Type of thermal cut - off			N C : normally closed							
	Rated voltage	Vn	[V ac]	250							
	Rated current	In	[A]	2.5							
	Operative temperature	Tn	[°C]	140 °C ± 5%							
	Resetting temperature	Tr	[°C]	100 °C ± 15°C							
	Operative time	[ms]		1							
	Insulation class			F							
BRAKE	Type			STD 2							
	Static torque	Co	[Nm]	2							
	Rated voltage	Vn	[V]	24 Vcc + 6% -10% Stabilized							
	Rated current	In	[A]	0.46							
	Input power	Pn	[W]	11							
	Engaging time	Tr	[ms]	6							
	Release time	Tl	[ms]	25							

(*) with oil seal mounted on the flange (*1) Output continuous ratings with 250 x 250 x20 mm metallic heat sink flange coupling

DATA SHEET N° 1B11020300034

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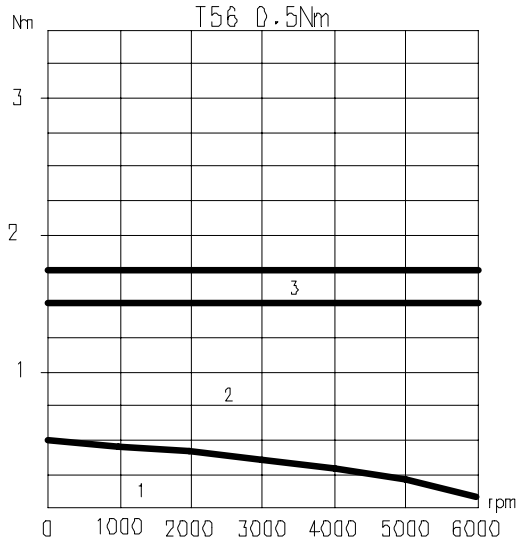
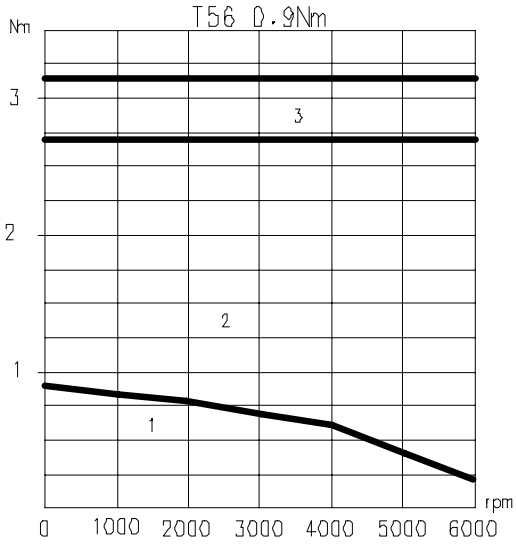
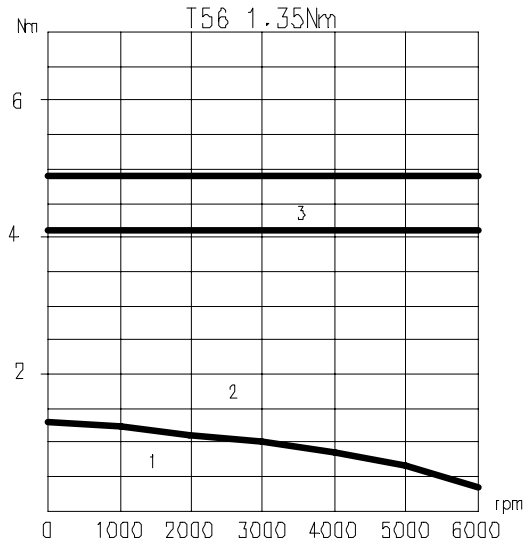
SERIES

TETRA 56

PERFORMANCE CURVES







1 CONTINUOUS DUTY AREA **2** INTERMITTENT DUTY AREA **3** DEMAGNETIZATION LIMIT

DATA SHEET N°4B1002000000

SERIES

TETRA 56

TRANSDUCER SERIES

TRANSDUCERS

E TYPE : ENCODER

RATED VOLTAGE	Vn	[V]	5 ± 5%
RATED CURRENT	In	[mA]	200
FREQUENCY	F	[K Hz]	200
WORKING TEMPERATURE	Tn	[°C]	- 20 ÷ + 100°
ELECTRONIC TYPE			LINE DRIVER AM 26 LS31
ROTATION			BIDIRECTIONAL
ZERO IMPULSE			STANDARD
N° OF PULSES REVOLUTION			1000 - 2000
N° OF COMMUTATION SIGNALS			3 DIFFERENTIAL

R TYPE : RESOLVER

RATED VOLTAGE	Vn	[V rms]	7 ± 5%
RATED CURRENT	In	[mA]	18
PHASE SHIFT			0°
ELECTRIC ERROR			± 10′
MIN. SIN. AMPLITUDE		[mVrms]	20
FREQUENCY	F	[KHz]	10
POLES NUMBER			2
TRASFORMER RATIO			0.5 ± 5%
INPUT INPEDANCE	Zro	[Ohm]	70 + j 100
OUTPUT IMPEDANCE	Zss	[Ohm]	175 + j 257
WORKING TEMPERATURE	Tn	[°C]	- 55 ÷ + 155°

H TYPE : HALL SENSORS

RATED VOLTAGE	Vn	[V]	5 ± 5%
RATED CURRENT	In	[mA]	100
WORKING TEMPERATURE	Tn	[°C]	-20° ÷ +100°
N° OF COMMUTATION SIGNALS			3 DIFFERENTIAL

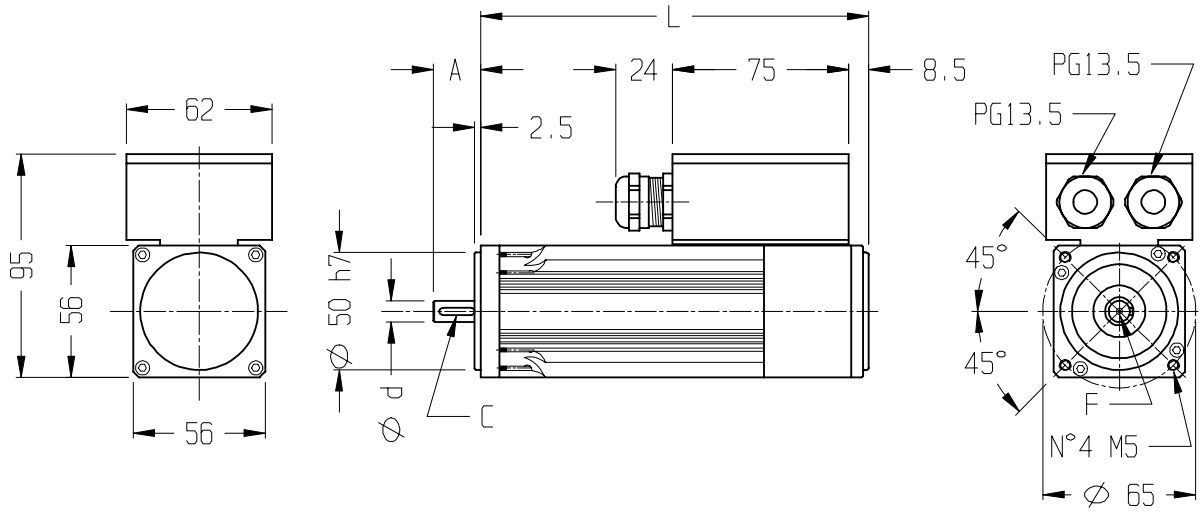
DATA SHEET N° 2B1002000000

SERIES

TETRA 56

DIMENSIONS (mm)

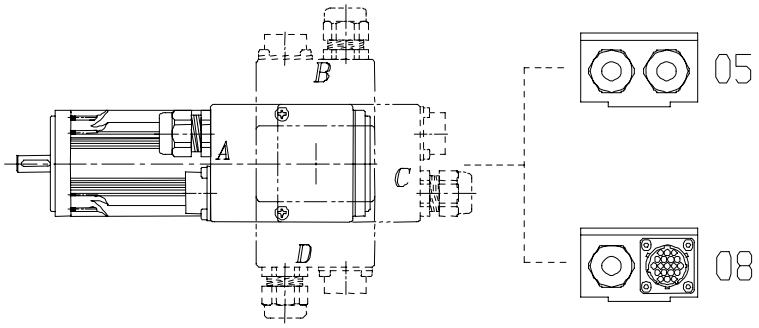
STANDARD



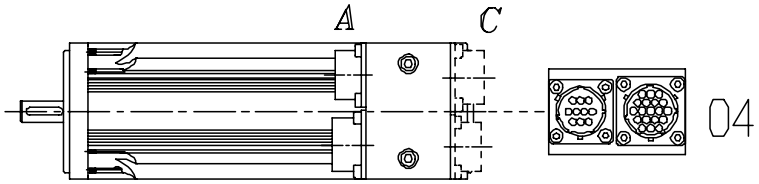
TYPE	0.5	0.9	1.35
A	20	20	23
L	135* - 152**	165* - 182**	195* - 212**
d(j6)	9	9	11
F			M4
C	3x3x15	3x3x15	4x4x18

LENGHT L INCREASED OF 30 MM WITH SAFETY BRAKE MOUNTED.- * LENGHT RESOLVER VERSION - ** LENGHT ENCODER VERSION

CONNECTION POSITIONS



L1	35 mm
L2	56 mm
L3	9,5 mm
Lc	13.5 mm



L1	75 mm
L2	62 mm
L3	8,5 mm
Lc	24 mm

A = Standard Position

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SERIES

TETRA 85

HOW TO ORDER A BRUSHLESS SERVOMOTOR SERIES TETRA 85

TETRA	85	SR	3.2	E	L	01	003	A	00.02
SERIES	TYPE	WAVEFORM	NOMINAL STALL TORQUE	TRANSDUCER TYPE	MOMENT OF INERTIA	WINDING TYPE	TRANSDUCER MODEL	CONNECTION POSITION	MODEL LIST
TETRA	**85**	**SR** = sinewave **TR** = squarewave	**1.2** **2.2** **3.2** **4.2**	**E** = Encoder **R** = Resolver **H** = Hall Sensor	**L** = Low **H** = High	See Data Sheet	**003** = Encoder ∅48 4p 2000 ppr **004** = Encoder ∅48 4p 1000 ppr **501** = Resolver 2p size 19 **008** = Hall Sensor 4p	**A** = Std. **B** = On req. **C** = On req. **D** = On req.	**00** = No prearranged **01** = External Encoder prearranged **02** = With brake **04** = Double connector on terminal box **16** = Double cable gland on terminal box **18** = Connector + cable gland on terminal box

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BRUSHLESS SERVOMOTORS

SERIES

TETRA 85SR1.2

TORQUE

1.2 Nm

	SINEWAVE FORM	SYMBOLS	UNITS	TYPE OF WINDING									
				01	02	03	04	08	12	14	15	17	18
MOTOR rpm	Vn drive 3phase 45 V ac		[rpm]	6000	5000	4000	3000	2000	1400				
	Vn drive 3phase 95 V ac		[rpm]				6300	5500	3000	2000	1300		
	Vn drive 3phase 145 V ac		[rpm]						4500	3000	2000	1150	
	Vn drive 3phase 220 V ac		[rpm]							4600	3000	1700	1150
	Vn drive 3phase 380 V ac		[rpm]								5200	3000	2000
SERVOMOTOR	WINDING DATA												
	Poles number	P		4									
	Continuos stall torque (*1)	Cn0	[Nm]	1.20									
	Voltage constant ± 5%	Ke	[V_{rms}/K_{rpm}]	5.7	6.8	8.5	11.3	17.0	24.0	36.0	55.0	96.7	145.0
	Torque constant ± 5%	Kt	[Nm/A_{rms}]	0.09	0.11	0.14	0.19	0.28	0.40	0.60	0.91	1.60	2.40
	Stall current	In0	[Arms]	12.80	10.67	8.53	6.40	4.27	3.02	2.02	1.32	0.75	0.50
	Peak torque	Cmax	[Nm]	3.60									
	Peak current	I cmax	[Arms]	38.4	32.0	25.6	19.2	12.8	9.1	6.0	4.0	2.3	1.5
	Max current	I max	[Arms]	44.8	37.3	29.9	22.4	14.9	10.6	7.1	4.6	2.6	1.8
	Ph/ph resistance ±10% at 25°C	Rff	[Ohm]	0.20	0.22	0.37	1.01	1.50	2.68	6.28	14.56	39.87	102.98
	Phase / phase inductance	Lff	[mH]	0.27	0.40	0.65	1.20	2.60	5.31	11.95	25.71	74.70	192.83
	Electrical time constant	Te	[ms]	1.35	1.84	1.78	1.18	1.74	1.98	1.90	1.77	1.87	1.87
	Thermal time constant	Tt	[min]	15									
	Operating temperature	Tr	[°C]	0 + 40									
	Protection degree	IP		65 (*)									
	Insulation class			F									
	MECHANICAL DATA												
	Moment of inertia h/l	Jm	[Kg cm^2]	1.3/0.9									
	Max theorethical acceleration	αmax	[rad/s^2]	27692/38710									
	Mechanical time constant h/l	Tm	[ms]	3.3/4.8	2.4/3.5	2.5/3.6	3.8/5.4	2.5/3.7	2.2/3.2	2.3/3.4	2.3/3.4	2.1/3	2.4/3.5
	Cogging torque	Tcog	[Nm]	0.036									
	Damping constant at 1000 rpm	Td	[Nm]	0.018									
	Max radial load (at 3000 rpm)	Fr	[N]	330 (applied on the shaft's middle)									
	Max axial load	Fa	[N]	105 (applied on the shaft's middle)									
	Weight	M	[Kg]	3.2									
THERMAL P.	Type of thermal cut - off			N C : normally closed									
	Rated voltage	Vn	[V ac]	250									
	Rated current	In	[A]	2.5									
	Operative temperature	Tn	[°C]	140 °C ± 5%									
	Resetting temperature	Tr	[°C]	100 °C ± 15°C									
	Operative time	[ms]		1									
	Insulation class			F									
BRAKE	Type			STD 4.5									
	Static torque	Co	[Nm]	4.5									
	Rated voltage	Vn	[V]	24 Vcc +6% -10% Stabilized									
	Rated current	In	[A]	0.5									
	Input power	Pn	[W]	12									
	Engaging time	Tr	[ms]	7									
	Release time	Tl	[ms]	35									

(*) with oil seal mounted on the flange (*1) Output continuous ratings with 250 x 250 x20 mm metallic heat sink flange coupling

DATA SHEET N° 1B1104010005

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BRUSHLESS SERVOMOTORS

SERIES

TETRA 85SR2.2

TORQUE

2.2 Nm

	SINEWAVE FORM	SYMBOLS	UNITS	TYPE OF WINDING									
				01	02	03	04	08	12	14	15	17	18
MOTOR rpm	Vn drive 3phase 45 V ac		[rpm]	6000	5000	4000	3000	2000	1400				
	Vn drive 3phase 95 V ac		[rpm]				6300	4200	3000	2000	1300		
	Vn drive 3phase 145 V ac		[rpm]						4500	3000	2000	1150	
	Vn drive 3phase 220 V ac		[rpm]							4600	3000	1700	1150
	Vn drive 3phase 380 V ac		[rpm]								5200	3000	2000
SERVOMOTOR	WINDING DATA												
	Poles number	P		4									
	Continuos stall torque (*1)	Cn0	[Nm]	2.20									
	Voltage constant ± 5%	Ke	[V_{rms}/K_{rpm}]	5.7	6.8	8.5	11.3	17.0	24.0	36.0	55.0	96.7	145.0
	Torque constant ± 5%	Kt	[Nm/A_{rms}]	0.09	0.11	0.14	0.19	0.28	0.40	0.60	0.91	1.60	2.40
	Stall current	In0	[Arms]	23.47	19.56	15.65	11.73	7.82	5.54	3.69	2.42	1.38	0.92
	Peak torque	Cmax	[Nm]	6.60									
	Peak current	I cmax	[Arms]	70.4	58.7	46.9	35.2	23.5	16.6	11.1	7.3	4.1	2.8
	Max current	I max	[Arms]	82.1	68.5	54.8	41.1	27.4	19.4	12.9	8.5	4.8	3.2
	Ph/ph resistance ±10% at 25°C	Rff	[Ohm]	0.11	0.12	0.19	0.49	1.10	1.35	3.07	5.57	19.76	76.28
	Phase / phase inductance	Lff	[mH]	0.16	0.23	0.41	0.64	1.44	3.11	6.57	15.41	48.59	108.50
	Electrical time constant	Te	[ms]	1.41	1.88	2.14	1.31	1.31	2.30	2.14	2.77	2.46	1.42
	Thermal time constant	Tt	[min]	20									
	Operating temperature	Tr	[°C]	0 + 40									
	Protection degree	IP		65 (*)									
	Insulation class			F									
	MECHANICAL DATA												
	Moment of inertia h/l	Jm	[$Kg\ cm^2$]	1.8/1.4									
	Max theorethical acceleration	αmax	[rad/s^2]	36666/48529									
	Mechanical time constant h/l	Tm	[ms]	2.9/3.8	2.1/2.7	2/2.6	2.8/3.6	2.9/3.8	1.7/2.2	1.8/2.3	1.4/1.8	1.6/2	2.7/3.5
	Cogging torque	Tcog	[Nm]	0.066									
	Damping constant at 1000 rpm	Td	[Nm]	0.035									
	Max radial load (at 3000 rpm)	Fr	[N]	330 (applied on the shaft's middle)									
	Max axial load	Fa	[N]	105 (applied on the shaft's middle)									
	Weight	M	[Kg]	4.2									
THERMAL P.	Type of thermal cut - off			N C : normally closed									
	Rated voltage	Vn	[V ac]	250									
	Rated current	In	[A]	2.5									
	Operative temperature	Tn	[°C]	140 °C ± 5%									
	Resetting temperature	Tr	[°C]	100 °C ± 15°C									
	Operative time	[ms]		1									
	Insulation class			F									
BRAKE	Type			STD 4.5									
	Static torque	Co	[Nm]	4.5									
	Rated voltage	Vn	[V]	24 Vcc +6% -10% Stabilized									
	Rated current	In	[A]	0.5									
	Input power	Pn	[W]	12									
	Engaging time	Tr	[ms]	7									
	Release time	Tl	[ms]	35									

(*) with oil seal mounted on the flange (*1) Output continuous ratings with 250 x 250 x20 mm metallic heat sink flange coupling

DATA SHEET N° 1B1104010006

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BRUSHLESS SERVOMOTORS

SERIES

TETRA 85SR3.2

TORQUE

3.2 Nm

	SINEWAVE FORM	SYMBOLS	UNITS	TYPE OF WINDING							
				06	09	12	14	15	16	17	18
MOTOR rpm	Vn drive 3phase 45 V ac		[rpm]	2600		1400					
	Vn drive 3phase 95 V ac		[rpm]	5500	4000	3000	2000	1300			
	Vn drive 3phase 145 V ac		[rpm]		6100	4500	3000	2000	1500	1150	
	Vn drive 3phase 220 V ac		[rpm]				4600	3000	2300	1700	1150
	Vn drive 3phase 380 V ac		[rpm]					5200	4000	3000	2000
SERVOMOTOR	WINDING DATA										
	Poles number	P		4							
	Continuos stall torque (*1)	Cn0	[Nm]	3.20							
	Voltage constant ± 5%	Ke	[V_{rms}/K_{rpm}]	13.1	18.0	24.0	36.0	55.0	72.5	96.7	145.0
	Torque constant ± 5%	Kt	[Nm/A_{rms}]	0.22	0.30	0.40	0.60	0.91	1.20	1.60	2.40
	Stall current	In0	[Arms]	14.79	10.75	8.06	5.37	3.52	2.67	2.00	1.33
	Peak torque	Cmax	[Nm]	9.60							
	Peak current	I cmax	[Arms]	44.4	32.2	24.2	16.1	10.6	8.0	6.0	4.0
	Max current	I max	[Arms]	51.8	37.6	28.2	18.8	12.3	9.3	7.0	4.7
	Ph/ph resistance ±10% at 25°C	Rff	[Ohm]	0.25	0.47	0.75	1.64	3.58	6.21	10.91	24.55
	Phase / phase inductance	Lff	[mH]	0.72	1.28	2.28	4.32	9.13	17.27	30.01	67.52
	Electrical time constant	Te	[ms]	2.89	2.76	3.03	2.63	2.55	2.78	2.75	2.75
	Thermal time constant	Tt	[min]	30							
	Operating temperature	Tr	[°C]	0 + 40							
	Protection degree	IP		65 (*)							
	Insulation class			F							
	MECHANICAL DATA										
	Moment of inertia h/l	Jm	[Kg cm^2]	2.9/2.2							
	Max theorethical acceleration	αmax	[rad/s^2]	33103/43439							
	Mechanical time constant h/l	Tm	[ms]	1.7/2.3	1.7/2.2	1.5/2	1.5/1.9	1.4/1.8	1.4/1.8	1.4/1.8	1.4/1.8
	Cogging torque	Tcog	[Nm]	0.096							
	Damping constant at 1000 rpm	Td	[Nm]	0.053							
	Max radial load (at 3000 rpm)	Fr	[N]	330 (applied on the shaft's middle)							
	Max axial load	Fa	[N]	105 (applied on the shaft's middle)							
	Weight	M	[Kg]	5.4							
THERMAL P.	Type of thermal cut - off			N C : normally closed							
	Rated voltage	Vn	[V ac]	250							
	Rated current	In	[A]	2.5							
	Operative temperature	Tn	[°C]	140 °C ± 5%							
	Resetting temperature	Tr	[°C]	100 °C ± 15°C							
	Operative time	[ms]		1							
	Insulation class			F							
BRAKE	Type			STD 4.5							
	Static torque	Co	[Nm]	4.5							
	Rated voltage	Vn	[V]	24 Vcc +6% -10% Stabilized							
	Rated current	In	[A]	0.5							
	Input power	Pn	[W]	12							
	Engaging time	Tr	[ms]	7							
	Release time	Tl	[ms]	35							

(*) with oil seal mounted on the flange (*1) Output continuous ratings with 250 x 250 x20 mm metallic heat sink flange coupling)

DATA SHEET N° 1B1104030005

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BRUSHLESS SERVOMOTORS

SERIES

TETRA 85SR4.2

TORQUE

4.2 Nm

	SINEWAVE FORM	SYMBOLS	UNITS	TYPE OF WINDING							
				06	09	12	14	15	16	17	18
MOTOR rpm	Vn drive 3phase 45 V ac		[rpm]	2600		1400					
	Vn drive 3phase 95 V ac		[rpm]	5500	4000	3000	2000	1300			
	Vn drive 3phase 145 V ac		[rpm]		6100	4500	3000	2000	1500	1150	
	Vn drive 3phase 220 V ac		[rpm]				4600	3000	2300	1700	1150
	Vn drive 3phase 380 V ac		[rpm]					5200	4000	3000	2000
SERVOMOTOR	WINDING DATA										
	Poles number	P		4							
	Continuos stall torque (*1)	Cn0	[Nm]	4.20							
	Voltage constant ± 5%	Ke	[V_{rms}/K_{rpm}]	13,1	18.0	24.0	36.0	55.0	72.5	96.7	145.0
	Torque constant ± 5%	Kt	[Nm/A_{rms}]	0.22	0.3	0,4	0.60	0,91	1.20	1.60	2.40
	Stall current	In0	[Arms]	19.42	14.11	10,58	7.05	4,62	3.50	2.63	1.75
	Peak torque	Cmax	[Nm]	12.60							
	Peak current	I cmax	[Arms]	58.2	42.3	31,7	21.2	13,8	10.5	7.9	5.3
	Max current	I max	[Arms]	68	49.4	37	24.7	16,2	12.3	9.2	6.1
	Ph/ph resistance ±10% at 25°C	Rff	[Ohm]	0.13	0.30	0.43	1.12	2.30	5.40	7.20	17.62
	Phase / phase inductance	Lff	[mH]	0.41	0.92	1.37	3.28	7.68	12.37	21.99	51.00
	Electrical time constant	Te	[ms]	3.11	3.08	3.18	2.94	3.34	2.29	3.05	2.89
	Thermal time constant	Tt	[min]	40							
	Operating temperature	Tr	[°C]	0 + 40							
	Protection degree	IP		65 (*)							
	Insulation class			F							
	MECHANICAL DATA										
	Moment of inertia h/l	Jm	[Kg cm^2]	3.5/2.6							
	Max theorethical acceleration	αmax	[rad/s^2]	36000/47727							
	Mechanical time constant h/l	Tm	[ms]	1.1/1.4	1.3/1.7	1/1.4	1.2/1.6	1/1.4	1.4/1.9	1.1/1.4	1.2/1.6
	Cogging torque	Tcog	[Nm]	0.126							
	Damping constant at 1000 rpm	Td	[Nm]	0.07							
	Max radial load (at 3000 rpm)	Fr	[N]	330 (applied on the shaft's middle)							
	Max axial load	Fa	[N]	105 (applied on the shaft's middle)							
	Weight	M	[Kg]	6.3							
THERMAL P.	Type of thermal cut - off			N C : normally closed							
	Rated voltage	Vn	[V ac]	250							
	Rated current	In	[A]	2.5							
	Operative temperature	Tn	[°C]	140 °C ± 5%							
	Resetting temperature	Tr	[°C]	100 °C ± 15°C							
	Operative time	[ms]		1							
	Insulation class			F							
BRAKE	Type			STD 4.5							
	Static torque	Co	[Nm]	4.5							
	Rated voltage	Vn	[V]	24 Vcc +6% -10% Stabilized							
	Rated current	In	[A]	0.5							
	Input power	Pn	[W]	12							
	Engaging time	Tr	[ms]	7							
	Release time	Tl	[ms]	35							

(*) with oil seal mounted on the flange (*1) Output continuous ratings with 250 x 250 x20 mm metallic heat sink flange coupling)

DATA SHEET N° 1B1104040005

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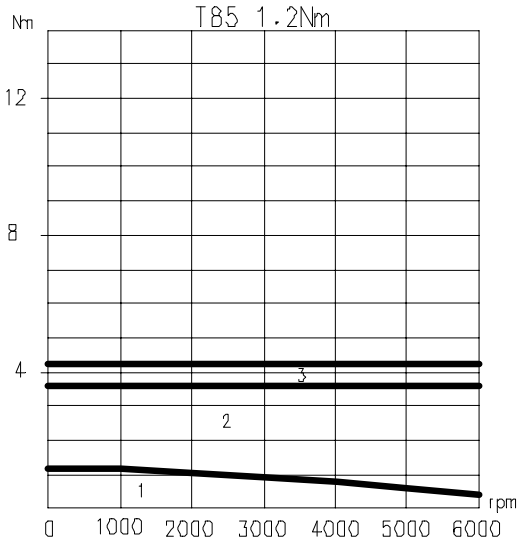
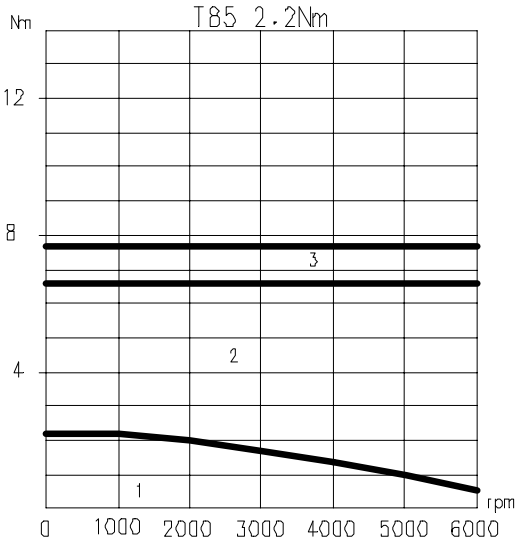
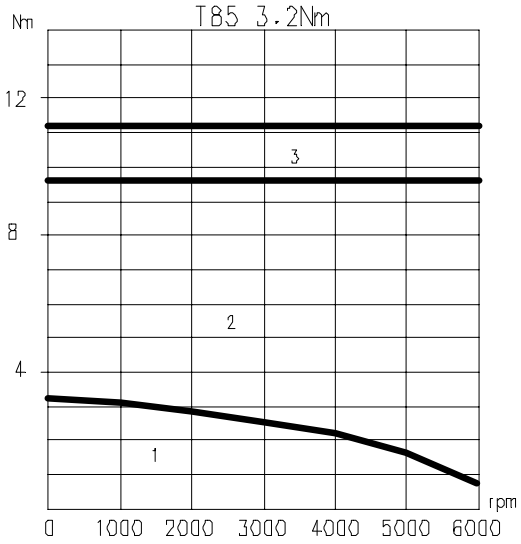
SERIES

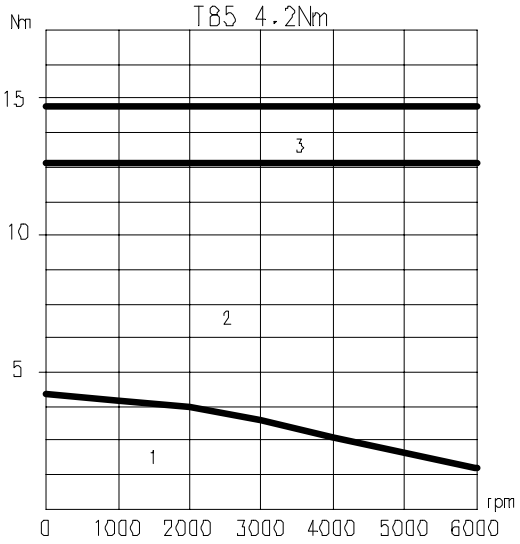
TETRA 85

PERFORMANCE CURVES









1 CONTINUOUS DUTY AREA **2** INTERMITTENT DUTY AREA **3** DEMAGNETIZATION LIMIT

DATA SHEET N°4B1004000000

BRUSHLESS SERVOMOTORS

SERIES

TETRA 85

TRANSDUCER SERIES

TRANSDUCERS

E TYPE : ENCODER

RATED VOLTAGE	Vn	[V]	5 ± 5%
RATED CURRENT	In	[mA]	200
FREQUENCY	F	[K Hz]	200
WORKING TEMPERATURE	Tn	[°C]	- 20 ÷ + 100°
ELECTRONIC TYPE			LINE DRIVER AM 26 LS31
ROTATION			BIDIRECTIONAL
ZERO IMPULSE			STANDARD
N° OF PULSES REVOLUTION			1000 - 2000
N° OF COMMUTATION SIGNALS			3 DIFFERENTIAL

R TYPE : RESOLVER

RATED VOLTAGE	Vn	[V rms]	7 ± 5%
RATED CURRENT	In	[mA]	18
PHASE SHIFT			- 5°
ELECTRIC ERROR			± 10′
MIN. SIN. AMPLITUDE		[mVrms]	25
FREQUENCY	F	[KHz]	10
POLES NUMBER			2
TRASFORMER RATIO			0.5 ± 5%
INPUT INPEDANCE	Zro	[Ohm]	110 + j 140
OUTPUT IMPEDANCE	Zss	[Ohm]	130 + j 240
WORKING TEMPERATURE	Tn	[°C]	- 55 ÷ + 155°

H TYPE : HALL SENSORS

RATED VOLTAGE	Vn	[V]	5 ± 5%
RATED CURRENT	In	[mA]	100
WORKING TEMPERATURE	Tn	[°C]	-20° ÷ +100°
N° OF COMMUTATION SIGNALS			3 DIFFERENTIAL

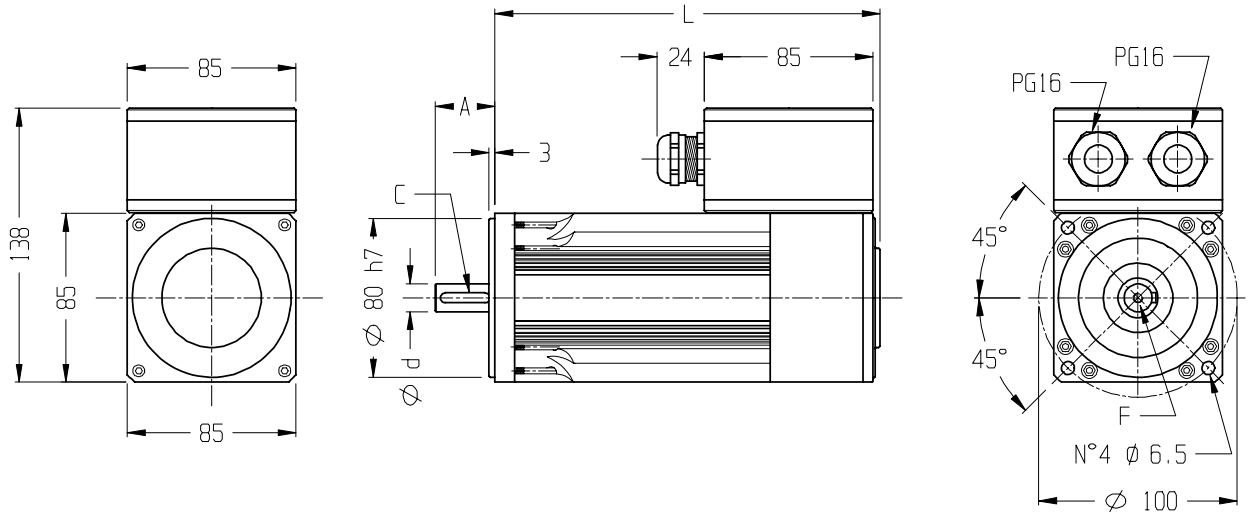
DATA SHEET N° 2B1004000000

SERIES

TETRA 85

DIMENSIONS (mm)

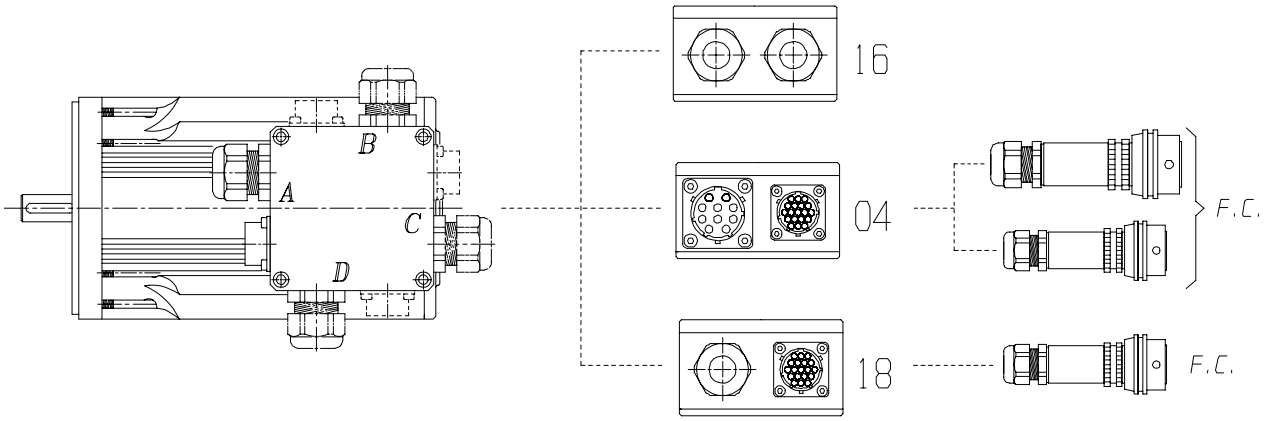
STANDARD



TYPE	1.2	2.2	3.2	4.2
A	30	30	40	40
L	166	196	226	256
d(j6)	14	14	19	19
F	M5	M5	M6	M6
C	5*5*25	5*5*25	6*6*30	6*6*30

LENGHT L INCREASED OF 30 MM WITH SAFETY BRAKE MOUNTED.

CONNECTION POSITIONS



A = Standard Position

DATA SHEET N° 7B10040001AA

SERIES

TETRA 115

HOW TO ORDER A BRUSHLESS SERVOMOTOR SERIES TETRA 115

TETRA	115	SR	3	E	L	01	001	A	00.02
SERIES	TYPE	WAVEFORM	NOMINAL STALL TORQUE	TRANSDUCER TYPE	MOMENT OF INERTIA	WINDING TYPE	TRANSDUCER MODEL	CONNECTION POSITION	MODEL LIST
TETRA	**115**	**SR** = sinewave **TR** = squarewave	**3** **5.2** **7** **9.2** **11**	**E** = Encoder **R** = Resolver **H** = Hall Sensor	**L** = Low **H** = High	See Data Sheet	**101** = Encoder ∅48 6p 2000 ppr **102** = Encoder ∅48 6p 1000 ppr **501** = Resolver 2p size 19 **107** = Hall Sensor 6p	**A** = Std. **B** = On req. **C** = On req. **D** = On req.	**00** = No prearranged **01** = External Encoder prearranged **02** = With brake **04** = Double connector on terminal box **16** = Double cable gland on terminal box **18** = Connector + cable gland on terminal box

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BRUSHLESS SERVOMOTORS

SERIES

TETRA 115SR3

TORQUE

3 Nm

	SINEWAVE FORM	SYMBOLS	UNITS	TYPE OF WINDING						
				09	12	14	15	16	17	18
MOTOR rpm	Vn drive 3phase 45 V ac		[rpm]		1400					
	Vn drive 3phase 95 V ac		[rpm]	4000	3000	2000	1300			
	Vn drive 3phase 145 V ac		[rpm]	6100	4500	3000	2000	1500	1150	
	Vn drive 3phase 220 V ac		[rpm]			4600	3000	2300	1700	1150
	Vn drive 3phase 380 V ac		[rpm]				5200	4000	3000	2000
SERVOMOTOR	WINDING DATA									
	Poles number	P					6			
	Continuos stall torque (*1)	Cn0	[Nm]				3.00			
	Voltage constant ± 5%	Ke	[V_{rms}/K_{rpm}]	18.0	24.0	36.0	55.0	72.5	96.7	145.0
	Torque constant ± 5%	Kt	[Nm/A_{rms}]	0.30	0.40	0.60	0.91	1.20	1.60	2.40
	Stall current	In0	[Arms]	10.08	7.56	5.04	3.30	2.50	1.88	1.25
	Peak torque	Cmax	[Nm]				9.00			
	Peak current	I cmax	[A rms]	30.2	22.7	15.1	9.9	7.5	5.6	3.8
	Max current	I max	[Arms]	35.3	26.4	17.6	11.5	8.8	6.6	4.4
	Ph/ph resistance ±10% at 25°C	Rff	[Ohm]	0.39	0.78	1.96	3.97	6.52	15.42	25.79
	Phase / phase inductance	Lff	[mH]	0.91	1.74	4.52	9.03	15.08	33.51	61.48
	Electrical time constant	Te	[ms]	2.32	2.23	2.31	2.27	2.31	2.17	2.38
	Thermal time constant	Tt	[min]				20			
	Operating temperature	Tr	[°C]				0 + 40			
	Protection degree	IP					65 (*)			
	Insulation class						F			
	MECHANICAL DATA									
	Moment of inertia h/l	Jm	[Kg cm^2]				7.3/4.7			
	Max theorethical acceleration	αmax	[rad/s^2]				12328/19149			
	Mechanical time constant h/l	Tm	[ms]	3./4.7	3.4/5.3	3.8/5.9	3.3/5.2	3.2/4.9	4.2/6.6	3.1/4.9
	Cogging torque	Tcog	[Nm]				0.09			
	Damping constant at 1000 rpm	Td	[Nm]				0.028			
	Max radial load (at 3000 rpm)	Fr	[N]				600 (applied on the shaft's middle)			
	Max axial load	Fa	[N]				180 (applied on the shaft's middle)			
	Weight	M	[Kg]				4.7			
THERMAL P.	Type of thermal cut - off						N C : normally closed			
	Rated voltage	Vn	[V ac]				250			
	Rated current	In	[A]				2.5			
	Operative temperature	Tn	[°C]				140 °C ± 5%			
	Resetting temperature	Tr	[°C]				100 °C ± 15°C			
	Operative time	[ms]					1			
	Insulation class						F			
BRAKE	Type						STD 9			
	Static torque	Co	[Nm]				9			
	Rated voltage	Vn	[V]				24 Vcc +6% -10% Stabilized			
	Rated current	In	[A]				0.75			
	Input power	Pn	[W]				18			
	Engaging time	Tr	[ms]				7			
	Release time	Tl	[ms]				40			

(*) with oil seal mounted on the flange (*1) Output continuous ratings with 350 x 350 x20 mm metallic heat sink flange coupling)

DATA SHEET N° 1B1106010004

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BRUSHLESS SERVOMOTORS

SERIES

TETRA 115SR5.2

TORQUE

5.2 Nm

	SINEWAVE FORM	SYMBOLS	UNITS	TYPE OF WINDING							
				09	12	14	15	16	17	18	19
MOTOR rpm	Vn drive 3phase 45 V ac		[rpm]		1400						
	Vn drive 3phase 95 V ac		[rpm]	4000	3000	2000	1300				
	Vn drive 3phase 145 V ac		[rpm]	6100	4500	3000	2000	1500	1150		
	Vn drive 3phase 220 V ac		[rpm]			4600	3000	2300	1700	1150	
	Vn drive 3phase 380 V ac		[rpm]				5200	4000	3000	2000	1200
SERVOMOTOR	WINDING DATA										
	Poles number	P		6							
	Continuos stall torque (*1)	Cn0	[Nm]	5.20							
	Voltage constant ± 5%	Ke	[V_{rms}/K_{rpm}]	18.0	24.0	36.0	55.0	72.5	96.7	145.0	241.7
	Torque constant ± 5%	Kt	[Nm/A_{rms}]	0.30	0.40	0.60	0.91	1.20	1.60	2.40	4.00
	Stall current	In0	[Arms]	17.46	13.10	8.73	5.72	4.34	3.25	2.17	1.30
	Peak torque	Cmax	[Nm]	15.60							
	Peak current	I cmax	[Arms]	52.4	39.3	26.2	17.1	13.0	9.8	6.5	3.9
	Max current	I max	[Arms]	61.1	45.8	30.6	20.0	15.2	11.4	7.6	4.6
	Ph/ph resistance ±10% at 25°C	Rff	[Ohm]	0.25	0.37	0.93	2.09	3.43	7.14	13.45	39.98
	Phase / phase inductance	Lff	[mH]	0.67	1.00	2.40	6.05	10.17	18.33	40.67	113.62
	Electrical time constant	Te	[ms]	2.73	2.68	2.58	2.89	2.96	2.57	3.02	2.84
	Thermal time constant	Tt	[min]	25							
	Operating temperature	Tr	[°C]	0 + 40							
	Protection degree	IP		65 (*)							
	Insulation class			F							
	MECHANICAL DATA										
	Moment of inertia h/l	Jm	[Kg cm^2]	10.6/6.8							
	Max theorethical acceleration	αmax	[rad/s^2]	14716/22941							
	Mechanical time constant h/l	Tm	[ms]	2.8/4.3	2.4/3.7	2.6/4.1	2.5/4	2.4/3.8	2.8/4.4	2.3/3.7	3.8/5.9
	Cogging torque	Tcog	[Nm]	0.156							
	Damping constant at 1000 rpm	Td	[Nm]	0.055							
	Max radial load (at 3000 rpm)	Fr	[N]	600 (applied on the shaft's middle)							
	Max axial load	Fa	[N]	180 (applied on the shaft's middle)							
	Weight	M	[Kg]	6.2							
THERMAL P.	Type of thermal cut - off			N C : normally closed							
	Rated voltage	Vn	[V ac]	250							
	Rated current	In	[A]	2.5							
	Operative temperature	Tn	[°C]	140 °C ± 5%							
	Resetting temperature	Tr	[°C]	100 °C ± 15°C							
	Operative time	[ms]		1							
	Insulation class			F							
BRAKE	Type			STD 9							
	Static torque	Co	[Nm]	9							
	Rated voltage	Vn	[V]	24 Vcc +6% -10% Stabilized							
	Rated current	In	[A]	0.75							
	Input power	Pn	[W]	18							
	Engaging time	Tr	[ms]	7							
	Release time	Tl	[ms]	40							

(*) with oil seal mounted on the flange (*1) Output continuous ratings with 350 x 350 x20 mm metallic heat sink flange coupling)

DATA SHEET N° 1B1106020004

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BRUSHLESS SERVOMOTORS

SERIES

TETRA 115SR7

TORQUE

7 Nm

	SINEWAVE FORM	SYMBOLS	UNITS	TYPE OF WINDING						
				12	14	15	16	17	18	19
MOTOR rpm	Vn drive 3phase 45 V ac		[rpm]	1400						
	Vn drive 3phase 95 V ac		[rpm]	3000	2000	1300				
	Vn drive 3phase 145 V ac		[rpm]	4500	3000	2000	1500	1150		
	Vn drive 3phase 220 V ac		[rpm]		4600	3000	2300	1700	1150	
	Vn drive 3phase 380 V ac		[rpm]			5200	4000	3000	2000	1200
SERVOMOTOR	WINDING DATA									
	Poles number	P		6						
	Continuos stall torque (*1)	Cn0	[Nm]	7.00						
	Voltage constant ± 5%	Ke	[V_{rms}/K_{rpm}]	24.0	36.0	55.0	72.5	96.7	145.0	241.7
	Torque constant ± 5%	Kt	[Nm/A_{rms}]	0.40	0.60	0.91	1.20	1.60	2.40	4.00
	Stall current	In0	[Arms]	17.63	11.75	7.694	5.84	4.38	2.92	1.75
	Peak torque	Cmax	[Nm]	21.00						
	Peak current	I cmax	[Arms]	52.9	35.3	23.1	17.5	13.1	8.8	5.3
	Max current	I max	[Arms]	61.7	41.1	26.9	20.4	15.3	10.2	6.1
	Ph/ph resistance ±10% at 25°C	Rff	[Ohm]	0.25	0.53	1.20	2.17	3.71	8.70	23.40
	Phase / phase inductance	Lff	[mH]	0.80	1.80	4.05	6.61	12.01	27.61	76.05
	Electrical time constant	Te	[ms]	3.24	3.38	3.38	3.04	3.24	3.17	3.25
	Thermal time constant	Tt	[min]	30						
	Operating temperature	Tr	[°C]	0 + 40						
	Protection degree	IP		65 (*)						
	Insulation class			F						
	MECHANICAL DATA									
	Moment of inertia h/l	Jm	[Kg cm^2]	14.1/8.8						
	Max theorethical acceleration	αmax	[rad/s^2]	14883/23864						
	Mechanical time constant h/l	Tm	[ms]	2/3.2	1.9/3.1	1.9/3	2/3.2	1.9/3	2/3.2	2.9/4.6
	Cogging torque	Tcog	[Nm]	0.21						
	Damping constant at 1000 rpm	Td	[Nm]	0.083						
	Max radial load (at 3000 rpm)	Fr	[N]	600 (applied on the shaft's middle)						
	Max axial load	Fa	[N]	180 (applied on the shaft's middle)						
	Weight	M	[Kg]	7.5						
THERMAL P.	Type of thermal cut - off			N C : normally closed						
	Rated voltage	Vn	[V ac]	250						
	Rated current	In	[A]	2.5						
	Operative temperature	Tn	[°C]	140 °C ± 5%						
	Resetting temperature	Tr	[°C]	100 °C ± 15°C						
	Operative time	[ms]		1						
	Insulation class			F						
BRAKE	Type			STD 9						
	Static torque	Co	[Nm]	9						
	Rated voltage	Vn	[V]	24 Vcc +6% -10% Stabilized						
	Rated current	In	[A]	0.75						
	Input power	Pn	[W]	18						
	Engaging time	Tr	[ms]	7						
	Release time	Tl	[ms]	40						

(*) with oil seal mounted on the flange (*1) Output continuous ratings with 350 x 350 x20 mm metallic heat sink flange coupling)

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BRUSHLESS SERVOMOTORS

SERIES

TETRA 115SR9.2

TORQUE

9.2 Nm

	SINEWAVE FORM	SYMBOLS	UNITS	TYPE OF WINDING					
				14	15	16	17	18	19
MOTOR rpm	Vn drive 3phase 45 V ac		[rpm]						
	Vn drive 3phase 95 V ac		[rpm]	2000	1300				
	Vn drive 3phase 145 V ac		[rpm]	3000	2000	1500	1150		
	Vn drive 3phase 220 V ac		[rpm]	4600	3000	2300	1700	1150	
	Vn drive 3phase 380 V ac		[rpm]		5200	4000	3000	2000	1200
SERVOMOTOR	WINDING DATA								
	Poles number	P		6					
	Continuos stall torque (*1)	Cn0	[Nm]	9.20					
	Voltage constant ± 5%	Ke	[V_{rms}/K_{rpm}]	36.0	55.0	72.5	96.7	145.0	241.7
	Torque constant ± 5%	Kt	[Nm/A_{rms}]	0.60	0.91	1.20	1.60	2.40	4.00
	Stall current	In0	[Arms]	15.45	10.11	7.67	5.75	3.84	2.30
	Peak torque	Cmax	[Nm]	27.60					
	Peak current	I cmax	[Arms]	46.3	30.3	23.0	17.3	11.5	6.9
	Max current	I max	[Arms]	54.1	35.4	26.8	20.1	13.4	8.1
	Ph/ph resistance ±10% at 25°C	Rff	[Ohm]	0.36	0.87	1.60	2.83	6.66	17.44
	Phase / phase inductance	Lff	[mH]	1.30	3.14	5.78	10.00	21.90	61.50
	Electrical time constant	Te	[ms]	3.60	3.60	3.60	3.53	3.29	3.53
	Thermal time constant	Tt	[min]	35					
	Operating temperature	Tr	[°C]	0 + 40					
	Protection degree	IP		65 (*)					
	Insulation class			F					
	MECHANICAL DATA								
	Moment of inertia h/l	Jm	[Kg cm^2]	17.5/10.9					
	Max theorethical acceleration	αmax	[rad/s^2]	16235/25321					
	Mechanical time constant h/l	Tm	[ms]	1.6/2.6	1.7/2.7	1.8/2.9	1.8/2.9	1.9/3	1.7/2.8
	Cogging torque	Tcog	[Nm]	0.276					
	Damping constant at 1000 rpm	Td	[Nm]	0.11					
	Max radial load (at 3000 rpm)	Fr	[N]	600 (applied on the shaft's middle)					
	Max axial load	Fa	[N]	180 (applied on the shaft's middle)					
	Weight	M	[Kg]	8.8					
THERMAL P.	Type of thermal cut - off			N C : normally closed					
	Rated voltage	Vn	[V ac]	250					
	Rated current	In	[A]	2.5					
	Operative temperature	Tn	[°C]	140 °C ± 5%					
	Resetting temperature	Tr	[°C]	100 °C ± 15°C					
	Operative time	[ms]		1					
	Insulation class			F					
BRAKE	Type			STD 9					
	Static torque	Co	[Nm]	9					
	Rated voltage	Vn	[V]	24 Vcc +6% -10% Stabilized					
	Rated current	In	[A]	0.75					
	Input power	Pn	[W]	18					
	Engaging time	Tr	[ms]	7					
	Release time	Tl	[ms]	40					

(*) with oil seal mounted on the flange (*1) Output continuous ratings with 350 x 350 x20 mm metallic heat sink flange coupling)

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BRUSHLESS SERVOMOTORS

SERIES

TETRA 115SR11

TORQUE

11 Nm

	SINEWAVE FORM	SYMBOLS	UNITS	TYPE OF WINDING						
				13	14	15	16	17	18	19
MOTOR rpm	Vn drive 3phase 45 V ac		[rpm]							
	Vn drive 3phase 95 V ac		[rpm]		2000	1300				
	Vn drive 3phase 145 V ac		[rpm]	4000	3000	2000	1500	1150		
	Vn drive 3phase 220 V ac		[rpm]	6000	4600	3000	2300	1700	1150	
	Vn drive 3phase 380 V ac		[rpm]			5200	4000	3000	2000	1200
SERVOMOTOR	WINDING DATA									
	Poles number	P					6			
	Continuos stall torque (*1)	Cn0	[Nm]				11.00			
	Voltage constant ± 5%	Ke	[V_{rms}/K_{rpm}]	27.5	36.0	55.0	72.5	96.7	145.0	241.7
	Torque constant ± 5%	Kt	[Nm/A_{rms}]	0.45	0.60	0.91	1.20	1.60	2.40	4.00
	Stall current	In0	[Arms]	24.18	18.47	12.09	9.17	6.88	4.59	2.75
	Peak torque	Cmax	[Nm]				33.00			
	Peak current	I cmax	[Arms]	72.5	55.4	36.3	27.5	20.6	13.8	8.3
	Max current	I max	[Arms]	84.6	64.6	42.3	32.1	24.1	16.1	9.6
	Ph/ph resistance ±10% at 25°C	Rff	[Ohm]	0.23	0.43	0.92	1.52	2.90	6.43	16.69
	Phase / phase inductance	Lff	[mH]	0.70	1.24	2.80	4.37	8.57	18.68	52.57
	Electrical time constant	Te	[ms]	3.02	2.91	3.03	2.87	2.95	2.91	3.15
	Thermal time constant	Tt	[min]				40			
	Operating temperature	Tr	[°C]				0 + 40			
	Protection degree	IP					65(*)			
	Insulation class						F			
	MECHANICAL DATA									
	Moment of inertia h/l	Jm	[Kg cm^2]				20.8/13			
	Max theorethical acceleration	αmax	[rad/s^2]				15865/25385			
	Mechanical time constant h/l	Tm	[ms]	2.2/3.5	2.3/3.7	2.1/3.4	2/3.3	2.2/3.5	2.1/3.4	2/3.2
	Cogging torque	Tcog	[Nm]				0.33			
	Damping constant at 1000 rpm	Td	[Nm]				0.138			
	Max radial load (at 3000 rpm)	Fr	[N]				600 (applied on the shaft's middle)			
	Max axial load	Fa	[N]				180 (applied on the shaft's middle)			
	Weight	M	[Kg]				9.9			
THERMAL P.	Type of thermal cut - off						N C : normally closed			
	Rated voltage	Vn	[V ac]				250			
	Rated current	In	[A]				2.5			
	Operative temperature	Tn	[°C]				140 °C ± 5%			
	Resetting temperature	Tr	[°C]				100 °C ± 15°C			
	Operative time	[ms]					1			
	Insulation class						F			
BRAKE	Type						STD 18			
	Static torque	Co	[Nm]				18			
	Rated voltage	Vn	[V]				24 Vcc +6% -10% Stabilized			
	Rated current	In	[A]				1			
	Input power	Pn	[W]				24			
	Engaging time	Tr	[ms]				10			
	Release time	Tl	[ms]				50			

(*) with oil seal mounted on the flange (*1) Output continuous ratings with 350 x 350 x20 mm metallic heat sink flange coupling)

DATA SHEET N° 1B1106050004

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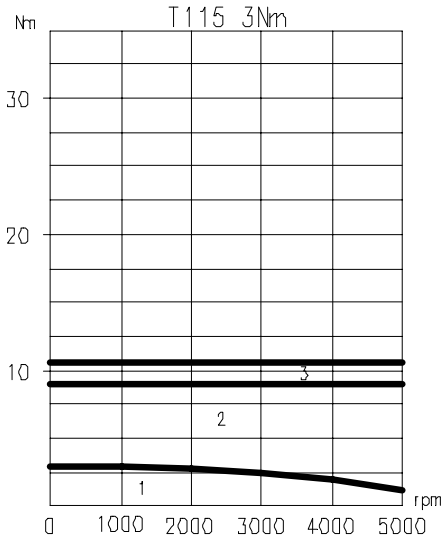
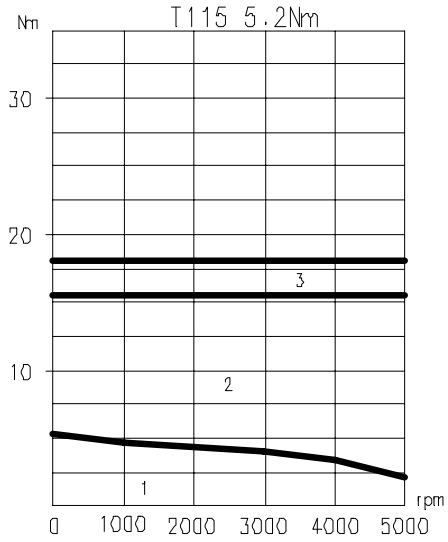
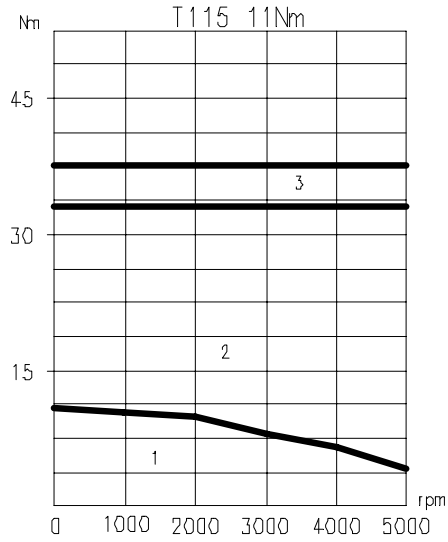
SERIES

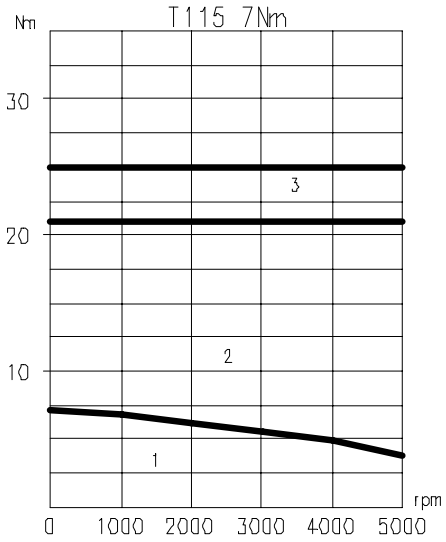
TETRA 115

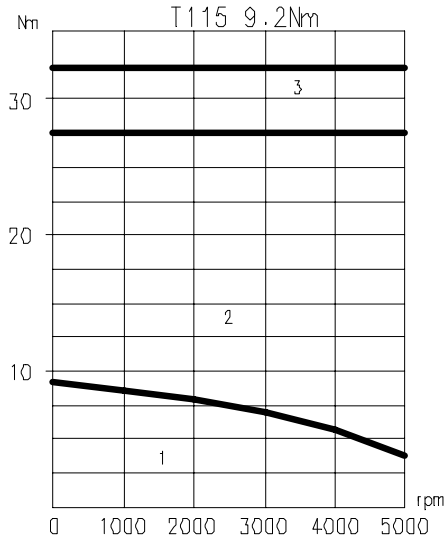
PERFORMANCE CURVES











1 CONTINUOUS DUTY AREA **2** INTERMITTENT DUTY AREA **3** DEMAGNETIZATION LIMIT

DATA SHEET N°4B1006000001

SERIES

TETRA 115

TRANSDUCER SERIES

TRANSDUCERS

E TYPE : ENCODER

RATED VOLTAGE	Vn	[V]	5 ± 5%
RATED CURRENT	In	[mA]	200
FREQUENCY	F	[K Hz]	200
WORKING TEMPERATURE	Tn	[°C]	- 20 ÷ + 100°
ELECTRONIC TYPE			LINE DRIVER AM 26 LS31
ROTATION			BIDIRECTIONAL
ZERO IMPULSE			STANDARD
N° OF PULSES REVOLUTION			1000 - 2000
N° OF COMMUTATION SIGNALS			3 DIFFERENTIAL

R TYPE : RESOLVER

RATED VOLTAGE	Vn	[V rms]	7 ± 5%
RATED CURRENT	In	[mA]	18
PHASE SHIFT			- 5°
ELECTRIC ERROR			± 10′
MIN. SIN. AMPLITUDE		[mVrms]	25
FREQUENCY	F	[KHz]	10
POLES NUMBER			2
TRASFORMER RATIO			0.5 ± 5%
INPUT INPEDANCE	Zro	[Ohm]	110 + j 140
OUTPUT IMPEDANCE	Zss	[Ohm]	130 + j 240
WORKING TEMPERATURE	Tn	[°C]	- 55 ÷ + 155°

H TYPE : HALL SENSORS

RATED VOLTAGE	Vn	[V]	5 ± 5%
RATED CURRENT	In	[mA]	100
WORKING TEMPERATURE	Tn	[°C]	-20° ÷ +100°
N° OF COMMUTATION SIGNALS			3 DIFFERENTIAL

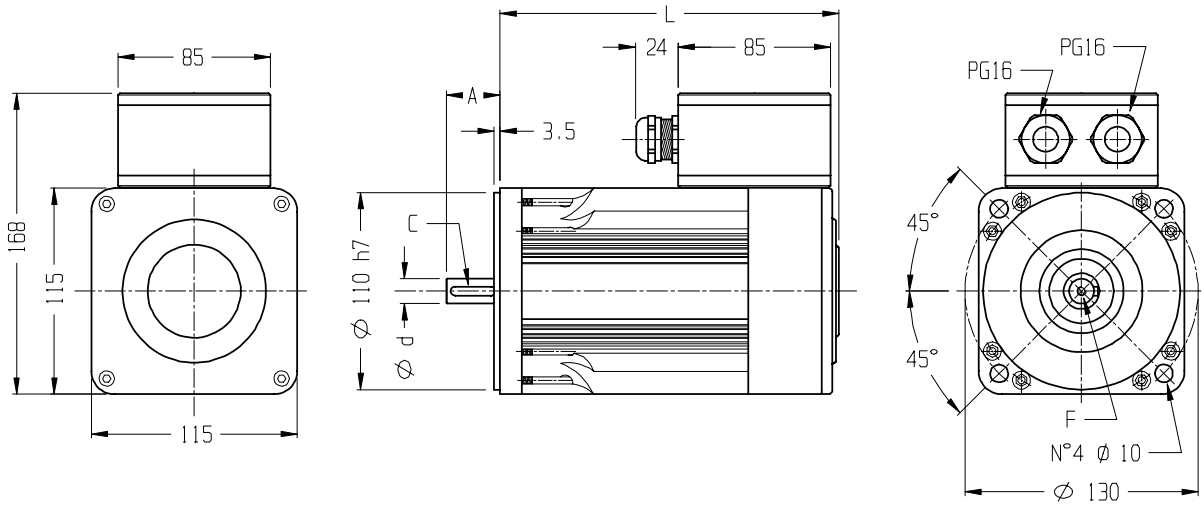
DATA SHEET N° 2B1006000001

SERIES

TETRA 115

DIMENSIONS (MM)

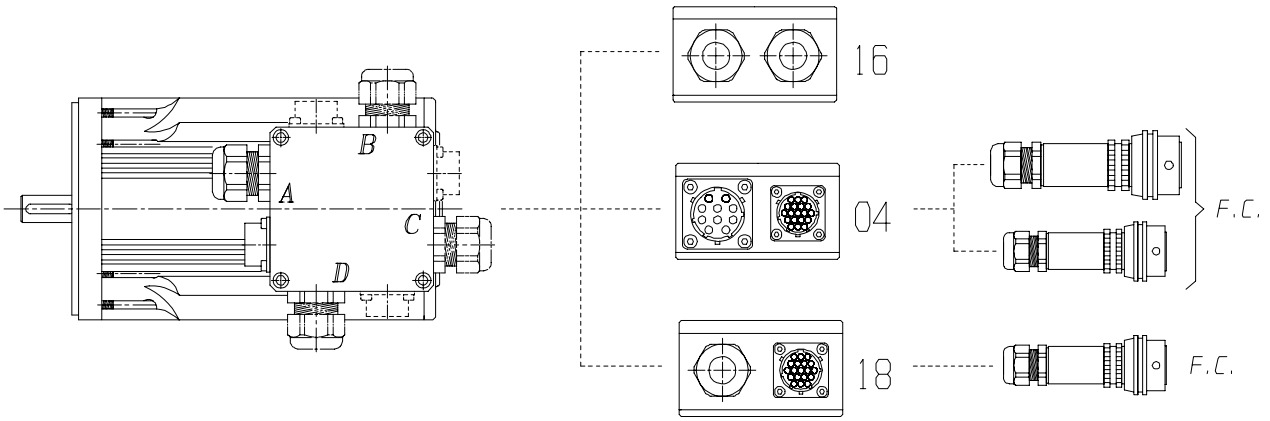
STANDARD



TYPE	3.0	5.2	7.0	9.2	11	
A	30	40	40	40	40	(50)
L	164	189	214	239	264	(264)
d(j6)	14	19	19	19	19	(24)
F	M5	M6	M6	M6	M6	(M8)
C	5*5*25	6*6*30	6*6*30	6*6*30	6*6*30	(8*7*40)

LENGHT L INCREASED OF 50 MM WITH SAFETY BRAKE MOUNTED.
( ) = ON REQUEST

CONNECTION POSITIONS



A = Standard Position

DATA SHEET N°7B10060001AA

SERIES

TETRA 142

HOW TO ORDER A BRUSHLESS SERVOMOTOR SERIES TETRA 142

TETRA	142	SR	21	E	L	01	001	A	00.02
SERIES	TYPE	WAVEFORM	NOMINAL STALL TORQUE	TRANSDUCER TYPE	MOMENT OF INERTIA	WINDING TYPE	TRANSDUCER MODEL	CONNECTION POSITION	MODEL LIST
TETRA	**142**	**SR** = sinewave **TR** = squarewave	**12** **16.5** **21** **25.5**	**E** = Encoder **R** = Resolver **H** = Hall Sensor	**L** = Low **H** = High	See Data Sheet	**101** = Encoder ∅48 6p 2000 ppr **102** = Encoder ∅48 6p 1000 ppr **501** = Resolver 2p size 19 **107** = Hall Sensor 6p	**A** = Std. **B** = On req. **C** = On req. **D** = On req.	**00** = No prearranged **01** = External Encoder prearranged **02** = With brake **04** = Double connector on terminal box **16** = Double cable gland on terminal box **18** = Connector + cable gland on terminal box

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BRUSHLESS SERVOMOTORS

SERIES

TETRA 142SR12

TORQUE

12 Nm

	SINEWAVE FORM	SYMBOLS	UNITS	TYPE OF WINDING					
				14	15	16	17	18	19
MOTOR rpm	Vn drive 3phase 45 V ac		[rpm]						
	Vn drive 3phase 95 V ac		[rpm]	2000	1300				
	Vn drive 3phase 145 V ac		[rpm]	3000	2000	1500	1150		
	Vn drive 3phase 220 V ac		[rpm]	4600	3000	2300	1700	1150	
	Vn drive 3phase 380 V ac		[rpm]		5200	4000	3000	2000	1200
SERVOMOTOR	WINDING DATA								
	Poles number	P		6					
	Continuos stall torque (*1)	Cn0	[Nm]	12.00					
	Voltage constant ± 5%	Ke	[V_{rms}/K_{rpm}]	36.0	55.0	72.5	96.7	145.0	241.7
	Torque constant ± 5%	Kt	[Nm/A_{rms}]	0.61	0.91	1.20	1.60	2.40	4.00
	Stall current	In0	[Arms]	19.78	13.19	10.01	7.50	5.00	3.00
	Peak torque	Cmax	[Nm]	36.00					
	Peak current	I cmax	[Arms]	59.4	39.6	30.0	22.5	15.0	9.0
	Max current	I max	[Arms]	69.2	46.2	35.0	26.3	17.5	10.5
	Ph/ph resistance ±10% at 25°C	Rff	[Ohm]	0.24	0.60	1.00	1.64	3.92	10.38
	Phase / phase inductance	Lff	[mH]	1.04	2.76	4.72	7.90	17.77	51.18
	Electrical time constant	Te	[ms]	4.40	4.58	4.71	4.80	4.54	4.93
	Thermal time constant	Tt	[min]	35					
	Operating temperature	Tr	[°C]	0 + 40					
	Protection degree	IP		65 (*)					
	Insulation class			F					
	MECHANICAL DATA								
	Moment of inertia h/l	Jm	[Kg cm^2]	38.4/23					
	Max theorethical acceleration	αmax	[rad/s^2]	9375/15652					
	Mechanical time constant h/l	Tm	[ms]	2.2/3.8	2.5/4.2	2.4/4	2.2/3.7	2.3/3.9	2.2/3.7
	Cogging torque	Tcog	[Nm]	0.36					
	Damping constant at 1000 rpm	Td	[Nm]	0.15					
	Max radial load (at 3000 rpm)	Fr	[N]	800 (applied on the shaft's middle)					
	Max axial load	Fa	[N]	240 (applied on the shaft's middle)					
	Weight	M	[Kg]	13.5					
THERMAL P.	Type of thermal cut - off			N C : normally closed					
	Rated voltage	Vn	[V ac]	250					
	Rated current	In	[A]	2.5					
	Operative temperature	Tn	[°C]	140 °C ± 5%					
	Resetting temperature	Tr	[°C]	100 °C ± 15°C					
	Operative time	[ms]		1					
	Insulation class			F					
BRAKE	Type			STD 18					
	Static torque	Co	[Nm]	18					
	Rated voltage	Vn	[V]	24 Vcc +6% -10% Stabilized					
	Rated current	In	[A]	1					
	Input power	Pn	[W]	24					
	Engaging time	Tr	[ms]	10					
	Release time	Tl	[ms]	50					

(*) with oil seal mounted on the flange (*1) Output continuous ratings with 350 x 350 x20 mm metallic heat sink flange coupling)

DATA SHEET N° 1B1108010004

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BRUSHLESS SERVOMOTORS

SERIES

TETRA 142SR16.5

TORQUE

16.5 Nm

	SINEWAVE FORM	SYMBOLS	UNITS	TYPE OF WINDING				
				15	16	17	18	19
MOTOR rpm	Vn drive 3phase 45 V ac		[rpm]					
	Vn drive 3phase 95 V ac		[rpm]	1300				
	Vn drive 3phase 145 V ac		[rpm]	2000	1500	1150		
	Vn drive 3phase 220 V ac		[rpm]	3000	2300	1700	1150	
	Vn drive 3phase 380 V ac		[rpm]	5200	4000	3000	2000	1200
SERVOMOTOR	WINDING DATA							
	Poles number	P		6				
	Continuos stall torque (*1)	Cn0	[Nm]	16.50				
	Voltage constant ± 5%	Ke	[V_{rms}/K_{rpm}]	55	72.5	96.7	145.0	241.7
	Torque constant ± 5%	Kt	[Nm/A_{rms}]	0.91	1.20	1.60	2.40	4.00
	Stall current	In0	[Arms]	18.14	13.76	10.32	6.88	4.13
	Peak torque	Cmax	[Nm]	49.50				
	Peak current	I cmax	[Arms]	54.4	41.3	31.0	20.6	12.4
	Max current	I max	[Arms]	63.5	48.2	36.1	24.1	14.4
	Ph/ph resistance ±10% at 25°C	Rff	[Ohm]	0.41	0.72	1.32	3.03	7.82
	Phase / phase inductance	Lff	[mH]	2.13	3.60	6.90	15.53	43.13
	Electrical time constant	Te	[ms]	5.16	5.03	5.25	5.12	5.51
	Thermal time constant	Tt	[min]	40				
	Operating temperature	Tr	[°C]	0 + 40				
	Protection degree	IP		65 (*)				
	Insulation class			F				
	MECHANICAL DATA							
	Moment of inertia h/l	Jm	[$Kg\ cm^2$]	45.9/27				
	Max theorethical acceleration	αmax	[rad/s^2]	10784/18333				
	Mechanical time constant h/l	Tm	[ms]	2/3.4	2/3.4	2/3.5	2.1/3.6	1.9/3.3
	Cogging torque	Tcog	[Nm]	0.495				
	Damping constant at 1000 rpm	Td	[Nm]	0.20				
	Max radial load (at 3000 rpm)	Fr	[N]	800 (applied on the shaft's middle)				
	Max axial load	Fa	[N]	240 (applied on the shaft's middle)				
	Weight	M	[Kg]	15.5				
THERMAL P.	Type of thermal cut - off			N C : normally closed				
	Rated voltage	Vn	[V ac]	250				
	Rated current	In	[A]	2.5				
	Operative temperature	Tn	[°C]	140 °C ± 5%				
	Resetting temperature	Tr	[°C]	100 °C ± 15°C				
	Operative time	[ms]		1				
	Insulation class			F				
BRAKE	Type			STD 18				
	Static torque	Co	[Nm]	18				
	Rated voltage	Vn	[V]	24 Vcc +6% -10% Stabilized				
	Rated current	In	[A]	1				
	Input power	Pn	[W]	24				
	Engaging time	Tr	[ms]	10				
	Release time	Tl	[ms]	50				

(*) with oil seal mounted on the flange (*1) Output continuous ratings with 350 x 350 x20 mm metallic heat sink flange coupling)

DATA SHEET N° 1B1108020005

BRUSHLESS SERVOMOTORS

SERIES

TETRA 142SR21

TORQUE

21 Nm

	SINEWAVE FORM	SYMBOLS	UNITS	TYPE OF WINDING				
				15	16	17	18	19
MOTOR rpm	Vn drive 3phase 45 V ac		[rpm]					
	Vn drive 3phase 95 V ac		[rpm]	1300				
	Vn drive 3phase 145 V ac		[rpm]	2000	1500	1150		
	Vn drive 3phase 220 V ac		[rpm]	3000	2300	1700	1150	
	Vn drive 3phase 380 V ac		[rpm]	5200	4000	3000	2000	1200
SERVOMOTOR	WINDING DATA							
	Poles number	P		6				
	Continuos stall torque (*1)	Cn0	[Nm]	21.00				
	Voltage constant ± 5%	Ke	[V_{rms}/K_{rpm}]	55	72.5	96.7	145.0	241.7
	Torque constant ± 5%	Kt	[Nm/A_{rms}]	0.91	1.20	1.60	2.40	4.00
	Stall current	In0	[Arms]	23.08	17.51	13.13	8.75	5.25
	Peak torque	Cmax	[Nm]	63.00				
	Peak current	I cmax	[Arms]	69.2	52.5	39.4	26.3	15.8
	Max current	I max	[Arms]	80.8	61.3	46.0	30.6	18.4
	Ph/ph resistance ±10% at 25°C	Rff	[Ohm]	0.23	0.47	0.81	1.88	5.28
	Phase / phase inductance	Lff	[mH]	1.30	2.66	4.50	10.64	28.97
	Electrical time constant	Te	[ms]	5.61	5.67	5.53	5.67	5.49
	Thermal time constant	Tt	[min]	45				
	Operating temperature	Tr	[°C]	0 + 40				
	Protection degree	IP		65 (*)				
	Insulation class			F				
	MECHANICAL DATA							
	Moment of inertia h/l	Jm	[$Kg\ cm^2$]	61.2/36.1				
	Max theorethical acceleration	αmax	[rad/s^2]	10289/17500				
	Mechanical time constant h/l	Tm	[ms]	1.5/2.5	1.7/3	1.7/2.9	1.7/3	1.8/3
	Cogging torque	Tcog	[Nm]	0.63				
	Damping constant at 1000 rpm	Td	[Nm]	0.25				
	Max radial load (at 3000 rpm)	Fr	[N]	800 (applied on the shaft's middle)				
	Max axial load	Fa	[N]	240 (applied on the shaft's middle)				
	Weight	M	[Kg]	18.5				
THERMAL P.	Type of thermal cut - off			N C : normally closed				
	Rated voltage	Vn	[V ac]	250				
	Rated current	In	[A]	2.5				
	Operative temperature	Tn	[°C]	140 °C ± 5%				
	Resetting temperature	Tr	[°C]	100 °C ± 15°C				
	Operative time	[ms]		1				
	Insulation class			F				
BRAKE	Type			STD 36				
	Static torque	Co	[Nm]	36				
	Rated voltage	Vn	[V]	24 Vcc +6% -10% Stabilized				
	Rated current	In	[A]	1.08				
	Input power	Pn	[W]	26				
	Engaging time	Tr	[ms]	22				
	Release time	Tl	[ms]	90				

(*) with oil seal mounted on the flange (*1) Output continuous ratings with 350 x 350 x20 mm metallic heat sink flange coupling)

DATA SHEET N° 1B1108030005

BRUSHLESS SERVOMOTORS

SERIES

TETRA 142SR25.5

TORQUE

25.5 Nm

	SINEWAVE FORM	SYMBOLS	UNITS	TYPE OF WINDING			
				16	17	18	19
MOTOR rpm	Vn drive 3phase 45 V ac		[rpm]				
	Vn drive 3phase 95 V ac		[rpm]				
	Vn drive 3phase 145 V ac		[rpm]	1500	1150		
	Vn drive 3phase 220 V ac		[rpm]	2300	1700	1150	
	Vn drive 3phase 380 V ac		[rpm]	4000	3000	2000	1200
SERVOMOTOR	WINDING DATA						
	Poles number	P		6			
	Continuos stall torque (*1)	Cn0	[Nm]	25.50			
	Voltage constant ± 5%	Ke	[V_{rms}/K_{rpm}]	72.5	96.7	145.0	241.7
	Torque constant ± 5%	Kt	[Nm/A_{rms}]	1.20	1.60	2.40	4.00
	Stall current	In0	[Arms]	21.26	15.95	10.63	6.38
	Peak torque	Cmax	[Nm]	76.50			
	Peak current	I cmax	[Arms]	63.8	47.8	31.9	19.1
	Max current	I max	[Arms]	74.4	55.8	37.2	22.3
	Ph/ph resistance ±10% at 25°C	Rff	[Ohm]	0.43	0.77	1.64	4.00
	Phase / phase inductance	Lff	[mH]	2.55	4.54	9.10	26.49
	Electrical time constant	Te	[ms]	5.89	5.89	5.57	6.63
	Thermal time constant	Tt	[min]	50			
	Operating temperature	Tr	[°C]	0 + 40			
	Protection degree	IP		65 (*)			
	Insulation class			F			
	MECHANICAL DATA						
	Moment of inertia h/l	Jm	[$Kg\ cm^2$]	68.9/40.5			
	Max theorethical acceleration	αmax	[rad/s^2]	11103/18889			
	Mechanical time constant h/l	Tm	[ms]	1.6/2.7	1.6/2.7	1.5/2.6	1.3/2.3
	Cogging torque	Tcog	[Nm]	0.765			
	Damping constant at 1000 rpm	Td	[Nm]	0.30			
	Max radial load (at 3000 rpm)	Fr	[N]	800 (applied on the shaft's middle)			
	Max axial load	Fa	[N]	240 (applied on the shaft's middle)			
	Weight	M	[Kg]	20.5			
THERMAL P.	Type of thermal cut - off			N C : normally closed			
	Rated voltage	Vn	[V ac]	250			
	Rated current	In	[A]	2.5			
	Operative temperature	Tn	[°C]	140 °C ± 5%			
	Resetting temperature	Tr	[°C]	100 °C ± 15°C			
	Operative time	[ms]		1			
	Insulation class			F			
BRAKE	Type			STD 36			
	Static torque	Co	[Nm]	36			
	Rated voltage	Vn	[V]	24 Vcc +6% -10% Stabilized			
	Rated current	In	[A]	1.08			
	Input power	Pn	[W]	26			
	Engaging time	Tr	[ms]	22			
	Release time	Tl	[ms]	90			

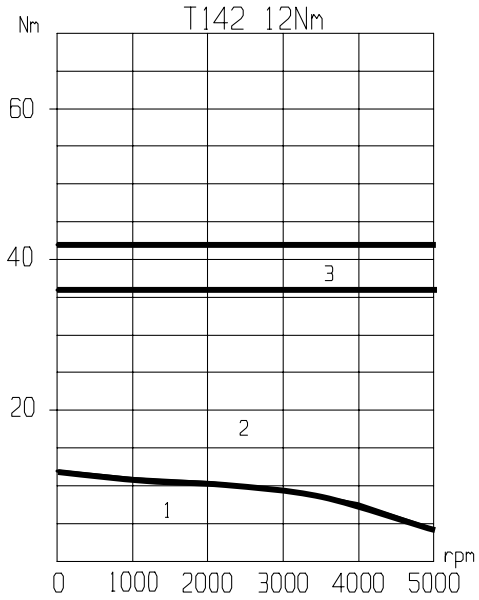
(*) with oil seal mounted on the flange (*1) Output continuous ratings with 350 x 350 x20 mm metallic heat sink flange coupling)

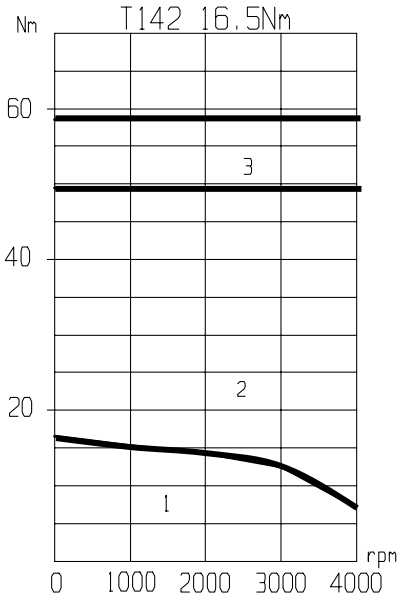
DATA SHEET N° 1B1108040004

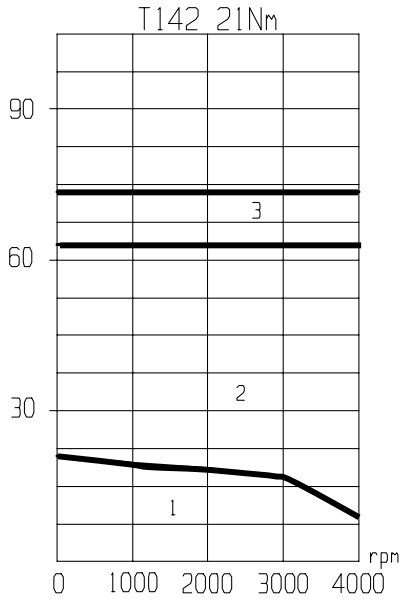
SERIES

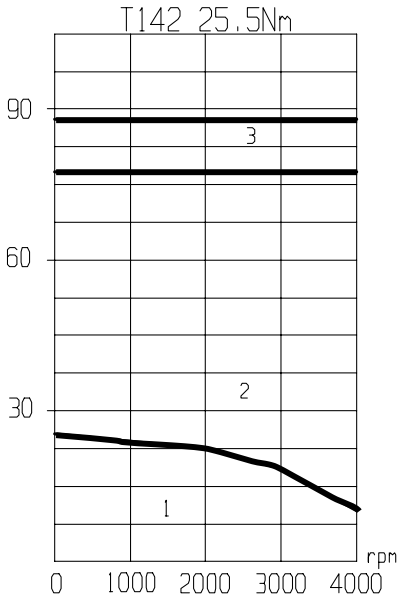
TETRA 142

PERFORMANCE CURVES









1 CONTINUOUS DUTY AREA **2** INTERMITTENT DUTY AREA **3** DEMAGNETIZATION LIMIT

DATA SHEET N°4B1008000001

SERIES

TETRA 142

TRANSDUCER SERIES

TRANSDUCERS

E TYPE :ENCODER

RATED VOLTAGE	Vn	[V]	5 ± 5%
RATED CURRENT	In	[mA]	200
FREQUENCY	F	[K Hz]	200
WORKING TEMPERATURE	Tn	[°C]	- 20 ÷ + 100°
ELECTRONIC TYPE			LINE DRIVER AM 26 LS31
ROTATION			BIDIRECTIONAL
ZERO IMPULSE			STANDARD
N° OF PULSES REVOLUTION			1000 - 2000
N° OF COMMUTATION SIGNALS			3 DIFFERENTIAL

R TYPE : RESOLVER

RATED VOLTAGE	Vn	[V rms]	7 ± 5%
RATED CURRENT	In	[mA]	18
PHASE SHIFT			- 5°
ELECTRIC ERROR			± 10′
MIN. SIN. AMPLITUDE		[mVrms]	25
FREQUENCY	F	[KHz]	10
POLES NUMBER			2
TRASFORMER RATIO			0.5 ± 5%
INPUT INPEDANCE	Zro	[Ohm]	110 + j 140
OUTPUT IMPEDANCE	Zss	[Ohm]	130 + j 240
WORKING TEMPERATURE	Tn	[°C]	- 55 ÷ + 155°

H TYPE : HALL SENSORS

RATED VOLTAGE	Vn	[V]	5 ± 5%
RATED CURRENT	In	[mA]	100
WORKING TEMPERATURE	Tn	[°C]	-20° ÷ +100°
N° OF COMMUTATION SIGNALS			3 DIFFERENTIAL

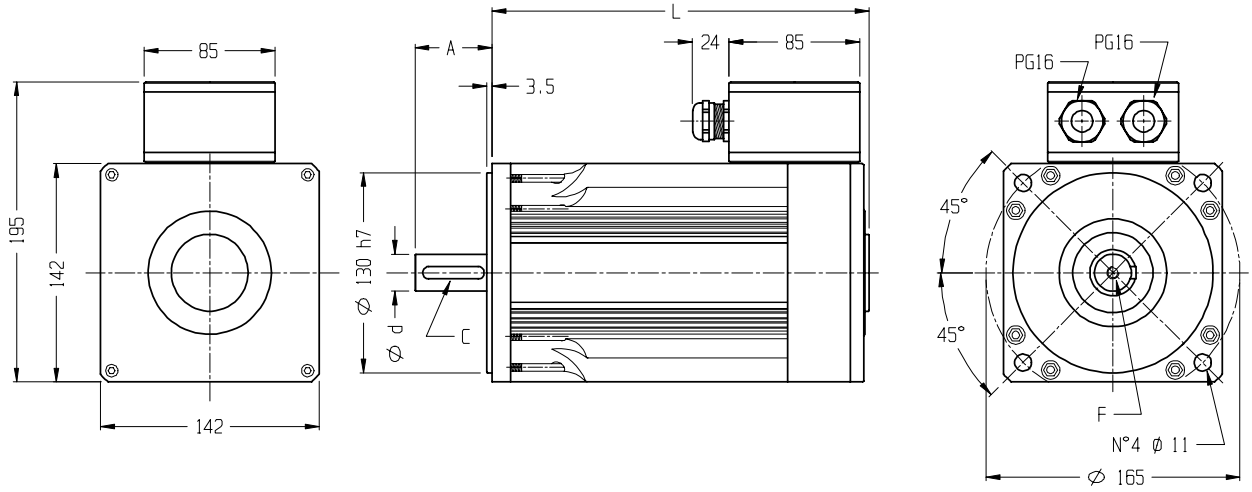
DATA SHEET N° 2B1008000000

SERIES

TETRA 142

DIMENSIONS (MM)

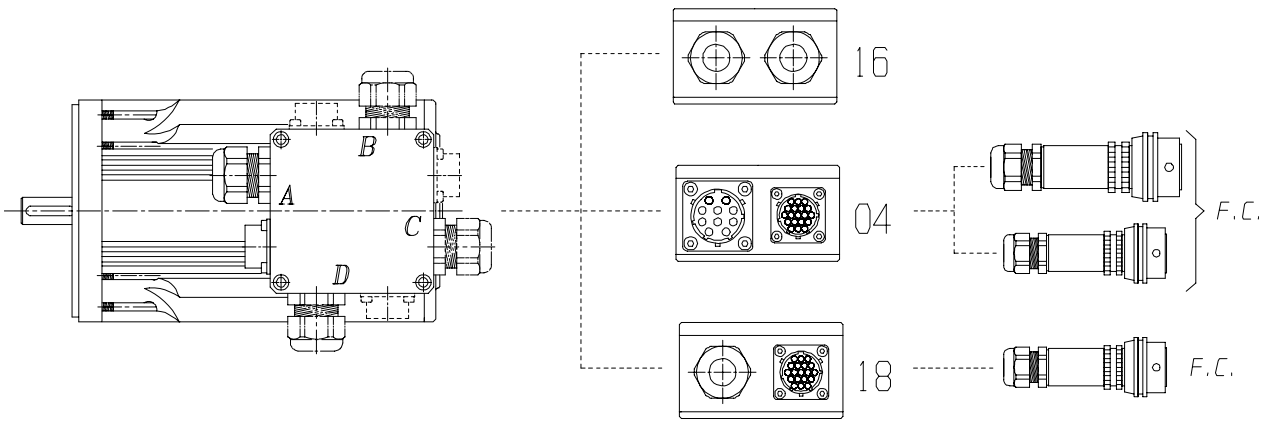
STANDARD



TYPE	12	16.5	21	25.5	
A	50	50	50	50	(60)
L	245	275	305	335	(335)
d(j6)	24	24	24	24	(28)
F	M8	M8	M8	M8	(M10)
C	8*7*40	8*7*40	8*7*40	8*7*40	(8*7*50)

LENGHT L INCREASED OF 60 MM WITH SAFETY BRAKE MOUNTED.
( ) = ON REQUEST

CONNECTION POSITIONS



A = Standard Position

DATA SHEET N° 7B10080001AA

SERIES

TETRA 180

HOW TO ORDER A BRUSHLESS SERVOMOTOR SERIES TETRA 180

TETRA	180	SR	35	E	L	01	101	A	00.02
SERIES	TYPE	WAVEFORM	NOMINAL STALL TORQUE	TRANSDUCER TYPE	MOMENT OF INERZIA	WINDING TYPE	TRANSDUCER MODEL	CONNECTION POSITION	MODEL LIST
TETRA	**180**	**SR** = sinusoidal	**22.5** **35** **47** **60**	**E** = Encoder **R** = Resolver **H** = Hall sensors	**L** = Low Inerzia **H** = High Inerzia	See Data Sheet	**101** = Encoder ∅48 6p 2000 imp/rpm **102** = Encoder ∅48 6p 1000 imp/rpm **501** = Resolver 2p SIZE 19 **107** = HALL SENSORS 6p	**A** = Std. **B** = ON REQ. **C** = ON REQ. **D** = ON REQ.	**00** = No prearranged **01** = External Encoder prearranged **02** = With brake **04** = Double connector on terminal box **16** = Double cable gland on terminal box **18** = Connector + cable gland on terminal box

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BRUSHLESS SERVOMOTORS

SERIES

TETRA 180SR22.5

TORQUE

22.5 Nm

	SINEWAVE FORM	SYMBOLS	UNITS	TYPE OF WINDING		
				17	18	19
MOTOR rpm	Vn drive 3phase 380 V ac		[rpm]	3000	2000	1200
SERVOMOTOR	WINDING DATA					
	Poles number	P		6		
	Continuos stall torque (*1)	Cn0	[Nm]	22.5		
	Voltage constant ± 5%	Ke	[V_{rms}/K_{rpm}]	96.7	145.0	241.7
	Torque constant ± 5%	Kt	[Nm/A_{rms}]	1.60	2.40	4.00
	Stall current	In0	[Arms]	14.1	9.38	5.63
	Peak torque	Cmax	[Nm]	85		
	Peak current	I cmax	[Arms]	53.1	35.4	21.3
	Max current	I max	[Arms]	58.4	38.9	23.4
	Phase/phase resistance ±10% at 25°C	Rff	[Ohm]	0.53	1.19	3.30
	Phase / phase inductance	Lff	[mH]	3.06	6.87	19.1
	Electrical time constant	Te	[ms]	5.8	5.7	5.8
	Thermal time constant	Tt	[min]	50		
	Operating temperature	Tr	[°C]	0 + 40		
	Protection degree	IP		65 (*)		
	Insulation class			F		
	MECHANICAL DATA					
	Moment of inertia h/l	Jm	[$Kg\ cm^2$]	69.5/95		
	Max theorethical acceleration	αmax	[rad/s^2]	9330/13000		
	Mechanical time constant	Tm	[ms]	2.8/2.0	2.8/2.0	2.8/2.0
	Cogging torque	Tcog	[Nm]	0.67		
	Damping constant at 1000 rpm	Td	[Nm]	0.28		
	Max radial load (at 3000 rpm)	Fr	[N]	1700 (applied on the shaft's middle)		
	Max axial load	Fa	[N]	510 (applied on the shaft's middle)		
	Weight	M	[Kg]	29		
THERMAL P.	Type of thermal cut - off			N C : normally closed		
	Rated voltage	Vn	[V ac]	250		
	Rated current	In	[A]	2.5		
	Operative temperature	Tn	[°C]	140 °C ± 5%		
	Resetting temperature	Tr	[°C]	100 °C ± 15°C		
	Operative time	[ms]		1		
	Insulation class			F		
BRAKE	Type			STD 72		
	Static torque	Co	[Nm]	72		
	Rated voltage	Vn	[V]	24 Vcc +6% -10% Stabilized		
	Rated current	In	[A]	1.66		
	Input power	Pn	[W]	40		
	Release time	Tr	[ms]	25		
	Locking time	Tl	[ms]	140		

(*) with oil seal mounted on the flange (*1) Output continuous ratings with 500 x 500 x20 mm metallic heat sink flange coupling)

DATA SHEET N° REV 1B1116010005

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BRUSHLESS SERVOMOTORS

SERIES

TETRA 180SR35

TORQUE

35 Nm

	SINEWAVE FORM	SYMBOLS	UNITS	TYPE OF WINDING		
				17	18	19
MOTOR rpm	Vn drive 3phase 380 V ac		[rpm]	3000	2000	1200
SERVOMOTOR	WINDING DATA					
	Poles number	P		6		
	Continuos stall torque (*1)	Cn0	[Nm]	35		
	Voltage constant ± 5%	Ke	[V_{rms}/K_{rpm}]	96.7	145.0	241.7
	Torque constant ± 5%	Kt	[Nm/A_{rms}]	1.6	2.40	4.00
	Stall current	In0	[Arms]	21.9	14.6	8.75
	Peak torque	Cmax	[Nm]	128		
	Peak current	I cmax	[Arms]	80.0	53.3	32.0
	Max current	I max	[Arms]	88.0	58.6	35.2
	Phase/phase resistance ±10% at 25°C	Rff	[Ohm]	0.28	0.64	1.78
	Phase / phase inductance	Lff	[mH]	1.84	4.13	11.48
	Electrical time constant	Te	[ms]	6.57	6.45	6.45
	Thermal time constant	Tt	[min]	60		
	Operating temperature	Tr	[°C]	0 + 40		
	Protection degree	IP		65 (*)		
	Insulation class			F		
	MECHANICAL DATA					
	Moment of inertia h/l	Jm	[$Kg\ cm^2$]	102.5/141		
	Max theorethical acceleration	αmax	[rad/s^2]	9490/13280		
	Mechanical time constant	Tm	[ms]	2.2/1.6	2.3/1.6	2.3/1.6
	Cogging torque	Tcog	[Nm]	1.05		
	Damping constant at 1000 rpm	Td	[Nm]	0.44		
	Max radial load (at 3000 rpm)	Fr	[N]	1700 (applied on the shaft's middle)		
	Max axial load	Fa	[N]	510 (applied on the shaft's middle)		
	Weight	M	[Kg]	36		
THERMAL P.	Type of thermal cut - off			N C : normally closed		
	Rated voltage	Vn	[V ac]	250		
	Rated current	In	[A]	2.5		
	Operative temperature	Tn	[°C]	140 °C ± 5%		
	Resetting temperature	Tr	[°C]	100 °C ± 15°C		
	Operative time	[ms]		1		
	Insulation class			F		
BRAKE	Type			STD 72		
	Static torque	Co	[Nm]	72		
	Rated voltage	Vn	[V]	24 Vcc +6% -10% Stabilized		
	Rated current	In	[A]	1.66		
	Input power	Pn	[W]	40		
	Release time	Tr	[ms]	25		
	Locking time	Tl	[ms]	140		

(*) with oil seal mounted on the flange (*1) Output continuous ratings with 500 x 500 x20 mm metallic heat sink flange coupling)

DATA SHEET N° REV 1B1116020005

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BRUSHLESS SERVOMOTORS

SERIES

TETRA 180SR47

TORQUE

47 Nm

	SINEWAVE FORM	SYMBOLS	UNITS	TYPE OF WINDING 18	19
MOTOR rpm	Vn drive 3phase 380 V ac		[rpm]	2000	1200
SERVOMOTOR	Poles number	P		6	
	Continuos stall torque (*1)	Cn0	[Nm]	47	
	Voltage constant ± 5%	Ke	[V_{rms}/K_{rpm}]	145.0	241.7
	Torque constant ± 5%	Kt	[Nm/A_{rms}]	2.40	4.00
	Stall current	In0	[Arms]	19.6	11.8
	Peak torque	Cmax	[Nm]	172	
	Peak current	I cmax	[Arms]	71.7	43.0
	Max current	I max	[Arms]	78.9	47.3
	Phase/phase resistance ±10% at 25°C	Rff	[Ohm]	0.42	1.18
	Phase / phase inductance	Lff	[mH]	3.14	8.73
	Electrical time constant	Te	[ms]	7.5	7.4
	Thermal time constant	Tt	[min]	70	
	Operating temperature	Tr	[°C]	0 + 40	
	Protection degree	IP		65 (*)	
	Insulation class			F	
	MECHANICAL DATA				
	Moment of inertia h/l	Jm	[$Kg\ cm^2$]	135.5/186.7	
	Max theorethical acceleration	αmax	[rad/s^2]	9630/13500	
	Mechanical time constant	Tm	[ms]	2.0/1.4	2.0/1.4
	Cogging torque	Tcog	[Nm]	1.41	
	Damping constant at 1000 rpm	Td	[Nm]	0.59	
	Max radial load (at 3000 rpm)	Fr	[N]	1700 (applied on the shaft's middle)	
	Max axial load	Fa	[N]	510 (applied on the shaft's middle)	
	Weight	M	[Kg]	45	
THERMAL P.	Type of thermal cut - off			N C : normally closed	
	Rated voltage	Vn	[V ac]	250	
	Rated current	In	[A]	2.5	
	Operative temperature	Tn	[°C]	140 °C ± 5%	
	Resetting temperature	Tr	[°C]	100 °C ± 15°C	
	Operative time	[ms]		1	
	Insulation class			F	
BRAKE	Type			STD 72	
	Static torque	Co	[Nm]	72	
	Rated voltage	Vn	[V]	24 Vcc +6% -10% Stabilized	
	Rated current	In	[A]	1.66	
	Input power	Pn	[W]	40	
	Release time	Tr	[ms]	25	
	Locking time	Tl	[ms]	140	

(*) with oil seal mounted on the flange (*1) Output continuous ratings with 500 x 500 x20 mm metallic heat sink flange coupling)

DATA SHEET N° REV 1B1116030006

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BRUSHLESS SERVOMOTORS

SERIES

TETRA 180SR60

TORQUE

60 Nm

	SINEWAVE FORM	SYMBOLS	UNITS	TYPE OF WINDING 18	19
MOTOR rpm	Vn drive 3phase 380 V ac		[rpm]	2000	1200
SERVOMOTOR	Poles number	P		6	
	Continuos stall torque (*1)	Cn0	[Nm]	60	
	Voltage constant ± 5%	Ke	[V_{rms}/K_{rpm}]	145.0	241.7
	Torque constant ± 5%	Kt	[Nm/A_{rms}]	2.40	4.00
	Stall current	In0	[Arms]	25.0	15.0
	Peak torque	Cmax	[Nm]	215	
	Peak current	I cmax	[Arms]	89.6	53.8
	Max current	I max	[Arms]	98.6	59.2
	Phase/phase resistance ±10% at 25°C	Rff	[Ohm]	0.31	0.87
	Phase / phase inductance	Lff	[mH]	2.54	7.09
	Electrical time constant	Te	[ms]	8.1	8.1
	Thermal time constant	Tt	[min]	75	
	Operating temperature	Tr	[°C]	0 + 40	
	Protection degree	IP		65 (*)	
	Insulation class			F	
	MECHANICAL DATA				
	Moment of inertia h/l	Jm	[$Kg\ cm^2$]	168.5/232	
	Max theorethical acceleration	αmax	[rad/s^2]	9660/13570	
	Mechanical time constant	Tm	[ms]	1.8/1.3	1.8/1.3
	Cogging torque	Tcog	[Nm]	1.80	
	Damping constant at 1000 rpm	Td	[Nm]	0.75	
	Max radial load (at 3000 rpm)	Fr	[N]	1700 (applied on the shaft's middle)	
	Max axial load	Fa	[N]	510 (applied on the shaft's middle)	
	Weight	M	[Kg]	45	
THERMAL P.	Type of thermal cut - off			N C : normally closed	
	Rated voltage	Vn	[V ac]	250	
	Rated current	In	[A]	2.5	
	Operative temperature	Tn	[°C]	140 °C ± 5%	
	Resetting temperature	Tr	[°C]	100 °C ± 15°C	
	Operative time	[ms]		1	
	Insulation class			F	
BRAKE	Type			STD 72	
	Static torque	Co	[Nm]	72	
	Rated voltage	Vn	[V]	24 Vcc +6% -10% Stabilized	
	Rated current	In	[A]	1.66	
	Input power	Pn	[W]	40	
	Release time	Tr	[ms]	25	
	Locking time	Tl	[ms]	140	

(*) with oil seal mounted on the flange (*1) Output continuous ratings with 500 x 500 x20 mm metallic heat sink flange coupling)

DATA SHEET N° REV 1B1116040006

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SERIES

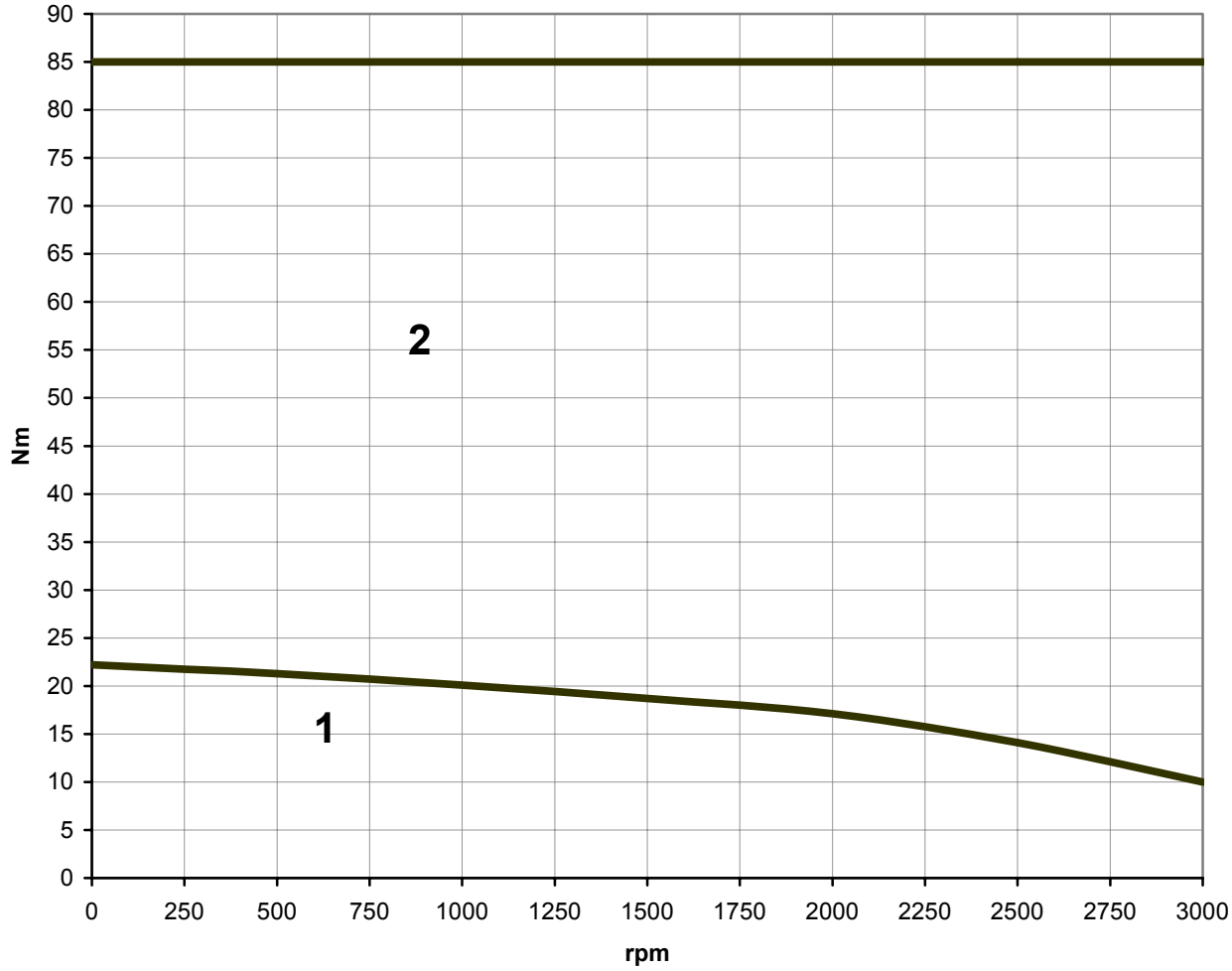
TETRA 180

PERFORMANCE CURVES

Torque

22,5 Nm

T180.22,5



1 CONTINUOUS DUTY AREA

2 INTERMITTENT DUTY AREA

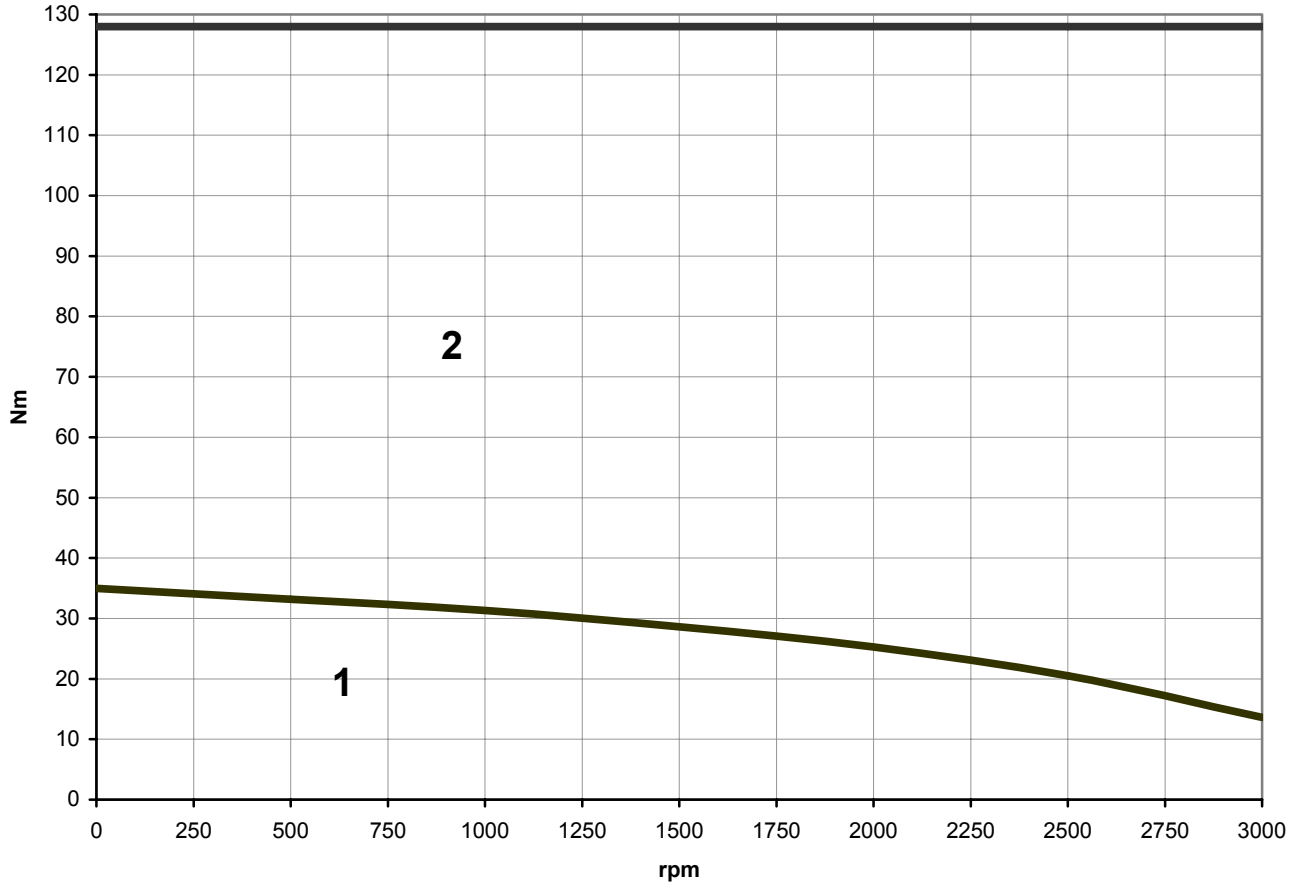
DATA SHEET N° T180-200610-00

SERIES

TETRA 180

PERFORMANCE CURVES
Torque
35 Nm

T180.35



1 CONTINUOUS DUTY AREA

2 INTERMITTENT DUTY AREA

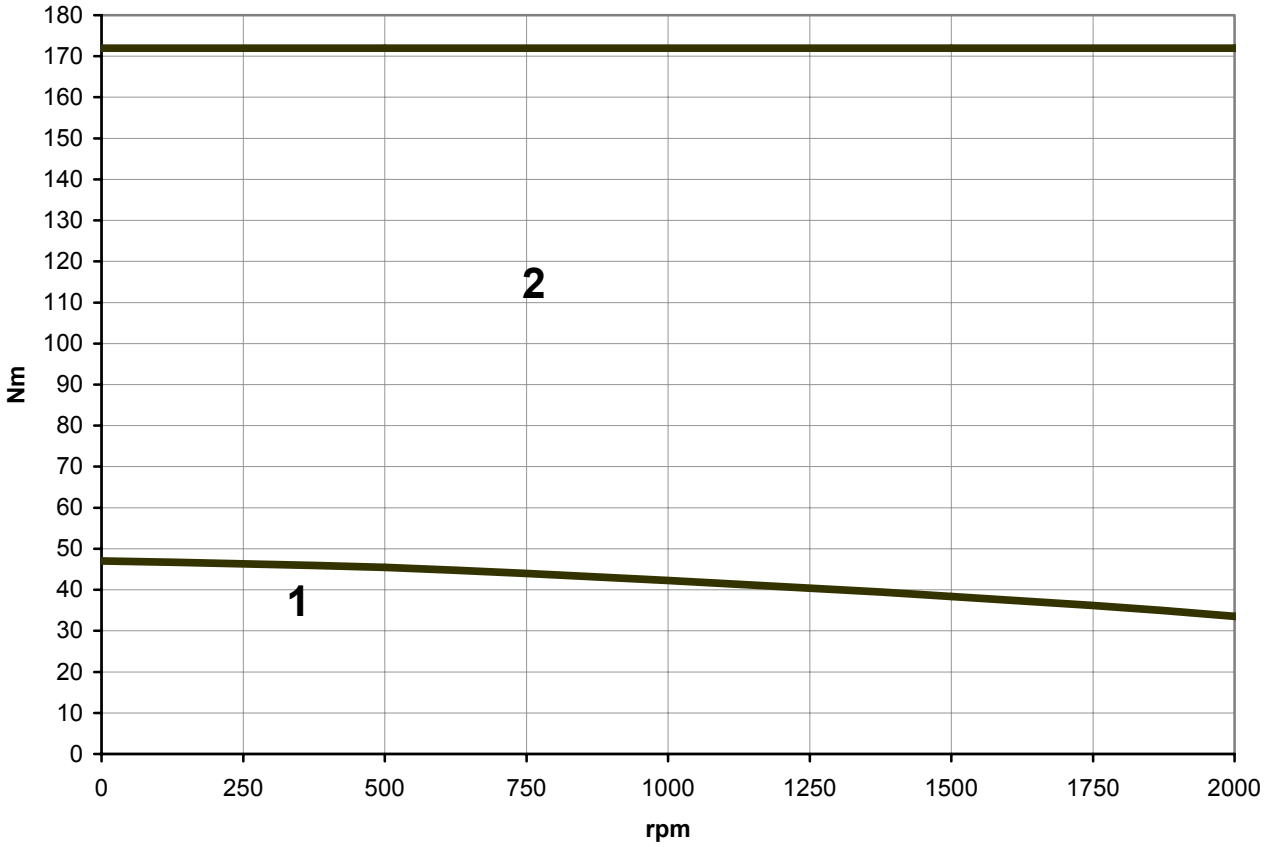
DATA SHEET N° T180-200610-00

SERIES

TETRA 180

PERFORMANCE CURVES
Torque
47 Nm

T180.47



1 CONTINUOUS DUTY AREA **2** INTERMITTENT DUTY AREA

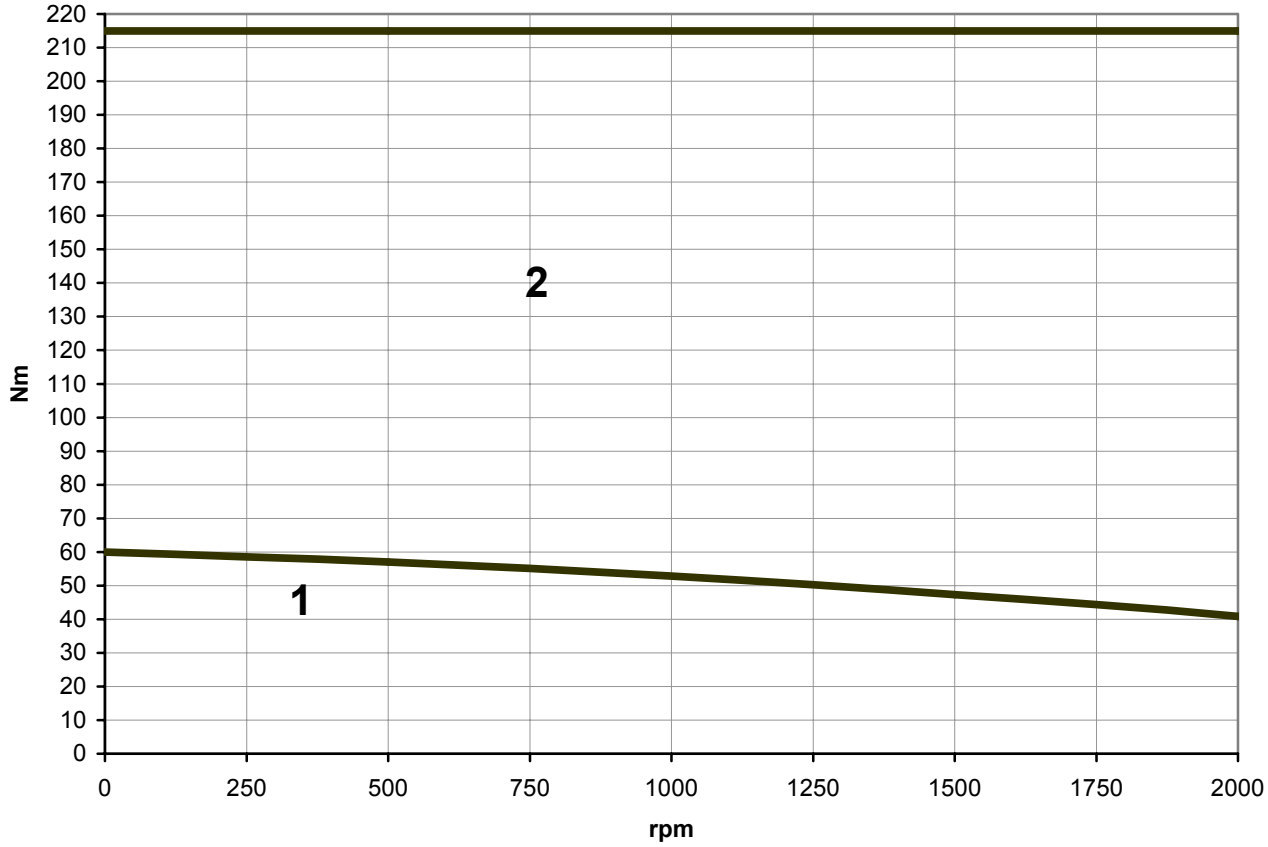
DATA SHEET N° T180-200610-00

SERIES

TETRA 180

PERFORMANCE CURVES
Torque
60 Nm

T180.60



1 CONTINUOUS DUTY AREA **2** INTERMITTENT DUTY AREA

DATA SHEET N° T180-200610-00

SERIES

TETRA 180

TRANSDUCER SERIES

TRANSDUCERS

E TYPE : ENCODER

RATED VOLTAGE	Vn	[V]	5 ± 5%
RATED CURRENT	In	[mA]	200
FREQUENCY	F	[K Hz]	200
WORKING TEMPERATURE	Tn	[°C]	- 20 ÷ + 100°
ELECTRONIC TYPE			LINE DRIVER AM 26 LS31
ROTATION			BIDIRECTIONAL
ZERO IMPULSE			STANDARD
N° OF PULSES REVOLUTION			1000 - 2000
N° OF COMMUTATION SIGNALS			3 DIFFERENTIAL

R TYPE : RESOLVER

RATED VOLTAGE	Vn	[V rms]	7 ± 5%
RATED CURRENT	In	[mA]	18
PHASE SHIFT			- 5°
ELECTRIC ERROR			± 10′
MIN. SIN. AMPLITUDE		[mVrms]	25
FREQUENCY	F	[KHz]	10
POLES NUMBER			2
TRASFORMER RATIO			0.5 ± 5%
INPUT INPEDANCE	Zro	[Ohm]	110 + j 140
OUTPUT IMPEDANCE	Zss	[Ohm]	130 + j 240
WORKING TEMPERATURE	Tn	[°C]	- 55 ÷ + 155°

H TYPE : HALL SENSORS

RATED VOLTAGE	Vn	[V]	5 ± 5%
RATED CURRENT	In	[mA]	100
WORKING TEMPERATURE	Tn	[°C]	-20° ÷ +100°
N° OF COMMUTATION SIGNALS			3 DIFFERENTIAL

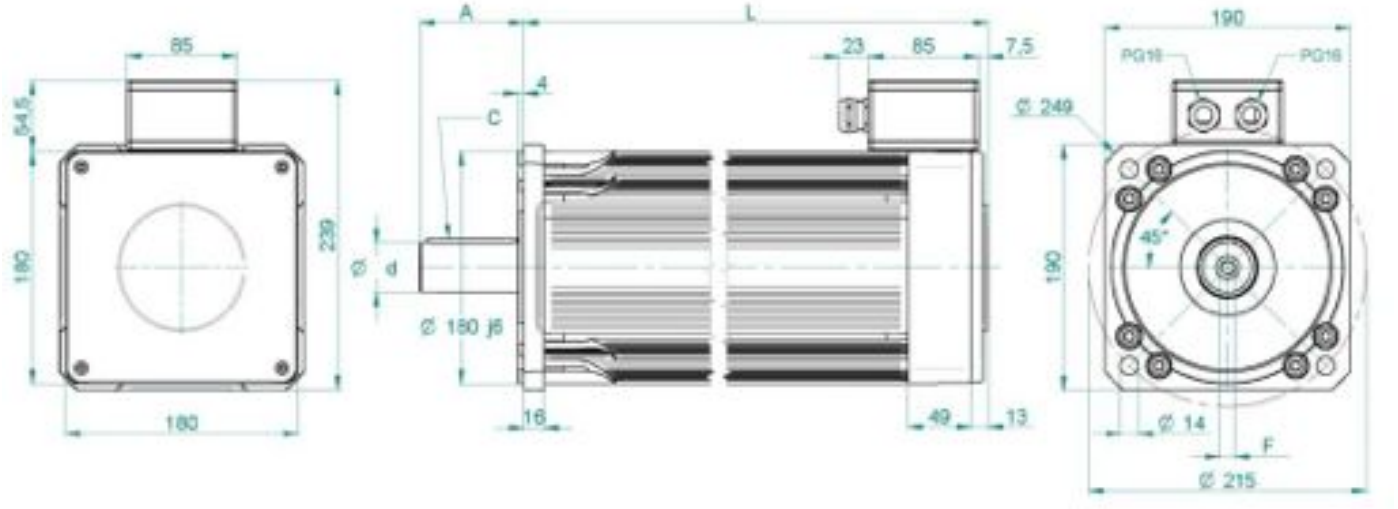
DATA SHEET N° 2B1006000001

SERIES

TETRA 180

DIMENSIONS (mm)

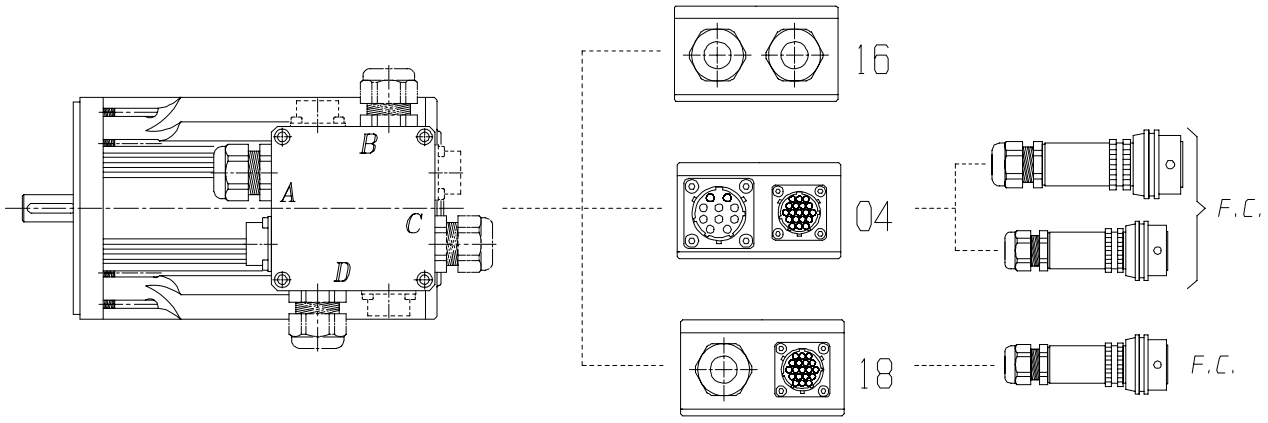
STANDARD



TYPE	*22.5*	*35*	*47*	*60*
L	290	350	410	470
A	60	80	80	80
d	28 (j6)	38 (k6)	38 (k6)	38 (k6)
F*prof.	M10*22	M12*28	M12*28	M12*28
C	8*7*50	10*8*70	10*8*70	10*8*70
Cn (Nm)	22.5	35	47	60

LENGHT L INCREASED OF 30 MM WITH SAFETY BRAKE MOUNTED

CONNECTION POSITIONS



FOR CONNECTORS TYPE PLEASE REFER TO OUR TECHNICAL DEPARTMENT

A = Standard Position

DATA SHEET N° 7B70040001AA

TETRA

HOW TO ORDER THE SIGNAL CABLES FOR TETRA SERIES

SELECT THE CABLE ACCORDING TO THE TRANSDUCER TYPE:

CABLE TYPE	MOTOR TYPE	TRASDUCER TYPE
S 08	**T56 - T85 - T 115 – T 142**	**Resolver – Hall sensor**
S 16	**T56 - T85 - T 115 – T 142**	**Encoder - Encoder sin - cos**

Example:

CV S08	08	01	R	04	AA	01
CABLE	**CABLE LENGTH**	**CONNECTION OUTPUT SERVOMOTOR SIDE**	**TRANSD.**	**CONNECTION OUTPUT DRIVE SIDE**	**VERSION**	**OUTPUT CONN. CODE**
S08 **S16**	Standard (m)	**01** Signal cable For terminal box (flying cable)	**R** Resolver	**00** Flying cable	**AA** Dynamic laying *(standard)*	**01** Standard
	05	**02** Signal cable for connector	**E** Encoder	**01** Female plug D 9p		
	10			**02** Male plug D 9p		
				03 Female plug D 15p high density		
				04 Male plug D 15p high density (resolver)		
				05 Female plug D 25p (encoder)		
				06 Male plug D 25p		

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TETRA

HOW TO ORDER THE POWER CABLES FOR TETRA SERIES

SELECT THE CABLE ACCORDING TO THE MOTOR TYPE AND THE WINDING:

MOTOR TYPE	TYPE OF WINDING	CABLE		MOTOR TYPE	TYPE OF WINDING	CABLE
T56 0.5	15-14-12-8-4-3-2-1	P1008		T115 7	19-18-17-16-15-14	P1508
T56 0.9	15-14-12-8-4-3- 2*-1*	P1008		T115 7	12	P2508
T56 1.35	15-14-12-8-4-3*	P1008		T115 9.2	19-18-17-16-15-14	P1508
T56 1.35	2*-1*	P1508		T115 11	19-18-17-16-15	P1508
T85 1.2	18-17-16-15-14-12-8-4-3-2-1	P1508		T115 11	14-13	P2508
T85 2.2	18-17-15-14-12-8-4	P1508		T142 12	19-18-17-16-15	P1508
T85 2.2	3-2-1	P2508		T142 12	14	P2508
T85 3.2	18-17-16-15-14-12-9-6	P1508		T142 16.5	19-18-17-16	P1508
T85 4.2	18-17-16-15-14-12-9	P1508		T142 16.5	15	P2508
T85 4.2	6	P2508		T142 21	19-18-17	P1508
T115 3	18-17-16-15-14-12-9	P1508		T142 21	16-15	P2508
T115 5.2	19-18-17-16-15-14-12	P1508		T142 25.5	19-18	P1508
T115 5.2	9	P2508		T142 25.5	17-16	P2508

*** double connector not available**

Example:

CV P1008	08	01	00	AA	01
CABLE	CABLE LENGHT	CONNECTION OUTPUT SERVOMOTOR SIDE	CONNECTION OUTPUT DRIVE SIDE	VERSION	OUTPUT CONN. CODE
P1008 P1508 P2508	Standard (m) 05 10 On request Optional length min.1m	01 Power cable for terminal box (flying cable) 03 Power cable for connector	00 Flying cable	AA Dynamic laying (standard)	01 Standard

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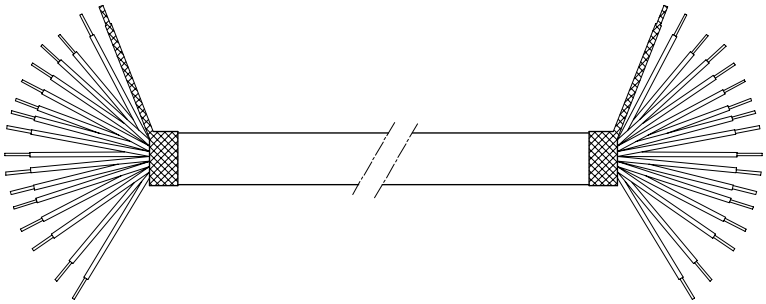
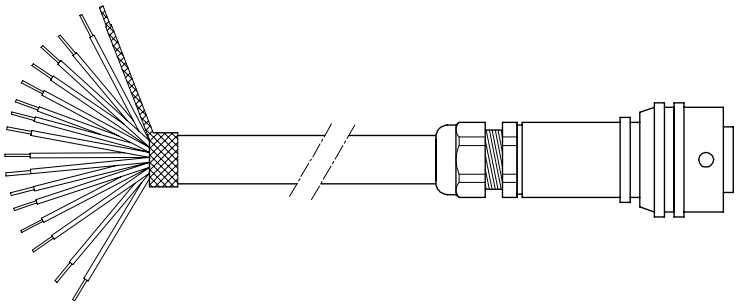
SIGNAL CABLES FOR ENCODER S16

FLYING CABLE



CABLE + CONNECTOR MOTOR SIDE



GENERAL FEATURES

Movement speed……..180 m/min
Maximum acceleration ……..…….5 m/s^2
Working temperature……..……..-20°C +60°C
Storage temperature……..……..-50°C +80°C
Max pulling strength……..50 N/mm^2
Voltage……..……30 V
External diameter…… Nom. D: 7.80mm toll. +/- 0.4mm
Taping……Soft tape

Dielectric strength…..……500 V
Insulation…..……PP style UL 1589 and CSA
Jacket……..……Thk 0.8
Min. bending radius……..85 mm
Conductor……..……..……..Tinned copper
Shield……..Total: tinned copper braid coverage ≥80%
Insulation Resistance…… >1000 Mohm. Km
Capacitance……..90pF/m +/-30pFm

UL- CSA HOMOLOGATION
Rote U = 30 V (UL Style 21126/CSA C22.2 No 210.2-M90)

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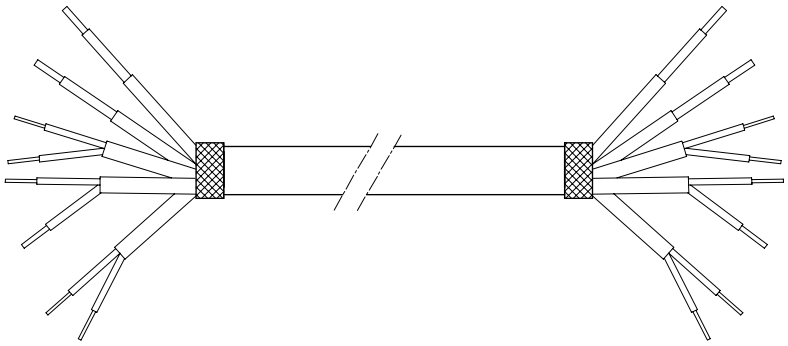
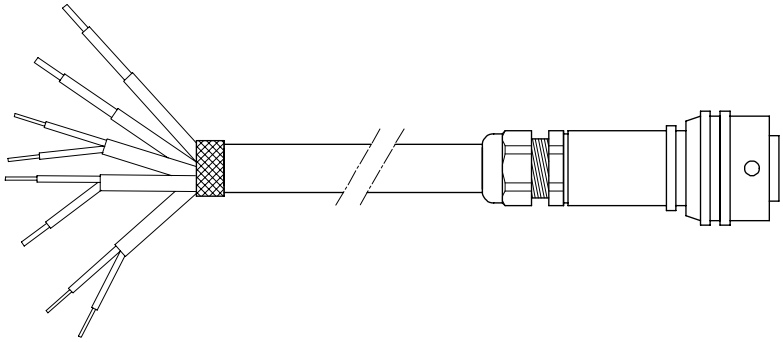
SIGNAL CABLES FOR RESOLVER S08

FLYING CABLE



CABLE + CONNECTOR MOTOR SIDE



GENERAL FEATURES

Movement speed……..180 m/min
Maximum acceleration ……..…7 m/s^2
Oil resistance……..……VDE 0472 part 803 A/B
Working temperature……..-10°C +80°C
Storage temperature……..……-40°C +80°C
Max pulling strength……...50 N/mm^2
Voltage……..……..250 V
External diameter……..Nom. D: 10.2mm toll. +/- 0.25mm

Dielectric strength……1500 V
Insulation…..……..PE-LA
Jacket……Polyurethane colour orange RAL 2003
Primary jacket ……PVC on the single shielded elements
Min. bending radius……10*dia (dia=10.2)
Conductor……Flexible
Shield……
Single on the tinned copper braid couple coverage ≥85%
Insulation resistance……>2500 Mohm. Km
Capacitance……..COND/COND = 100 pF/m
……COND/SHIELD = 168 pF/m

UL – CSA HOMOLOGATION
UL Style 20233/1973 CSA C22.2 N.210-M90

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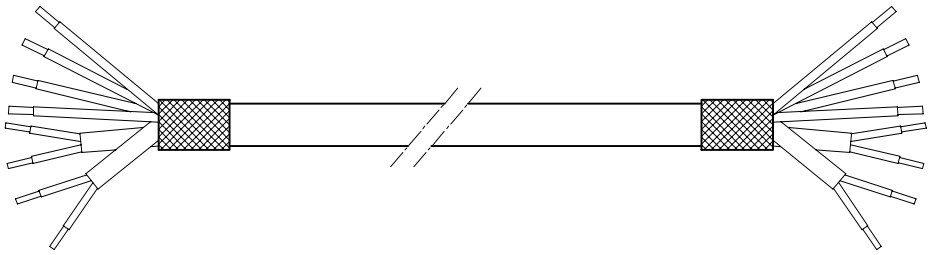
BRUSHLESS SERVOMOTORS

SERIES

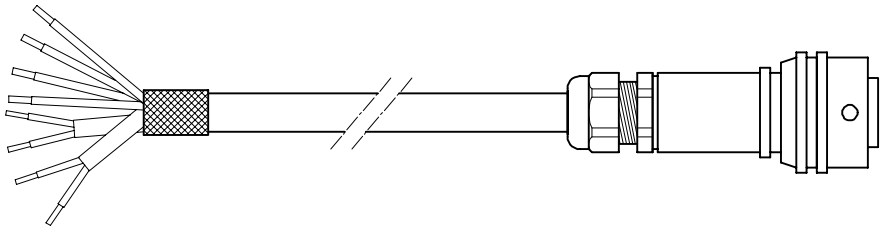
TETRA

POWER CABLES

FLYING CABLE



CABLE + CONNECTOR MOTOR SIDE



GENERAL FEATURES

Movement speed……..180 m/min
Maximum acceleration ……..…7 m/s²
Oil resistance……..……..VDE 0472 part 803 A/B
UL 1581-VDE 0282 TEIL 10 HD 22.10 S1
Working temperature…..……-30°C +80°C
Storage temperature……..……-50°C +90°C
Max pulling strength…….50 N/mm²
Voltage……..……power 600/1000 V
signals 300 V
External diameter……Nom. D: 12mm toll. +/- 0.3mm
Flame resistance……..CEI 20-35, VDE 0472-804/A,
NFC 32070 C1/1, IEC
332.1

Dielectric strength……...power 4000 V, signals 2000 V
Insulation……..……TPE-E
Jacket…….
special compound of PVC with low friction degree
Min. bending radius……..10*dia (dia=12-12.2-15.5)
Conductor……..flexible complying with NFC 32012 class 6
CEI 20-29 class 6, IEC 228 class 6, VDE 0295 class 6
Shield ……Total: tinned copper braid coverage ≥85%
Signal: tinned copper braid coverage
≥85% + All./Polyesthere cov.≥100%
Insulation resistance…….. Power: ≥20 Mohm. Km
UL HOMOLOGATION
UL-Style 20234/10258 80°C 1000V CSA C22.2 N.2107 M90

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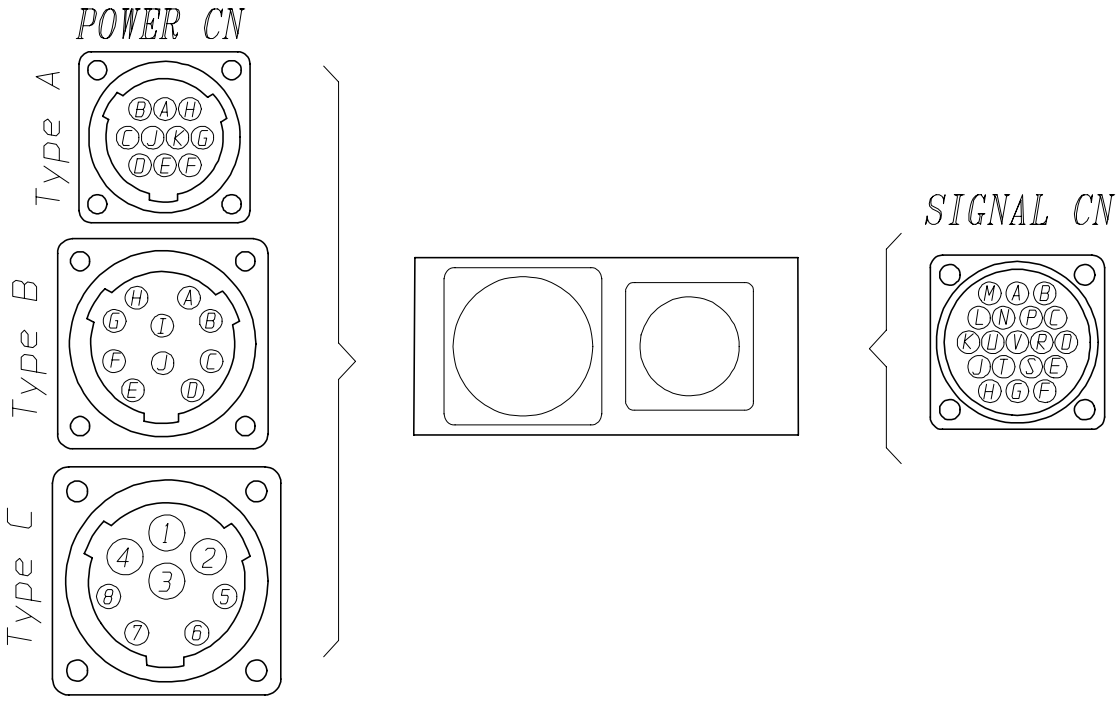
CONNECTIONS FOR DOUBLE CONNECTOR



Type *A* – Type *B*

POWER CONNECTOR	
N° PIN	**FUNCTION**
A	PHASE U
B	PHASE V
C	PHASE W
D	BRAKE -
E	BRAKE +
F	THERMAL PROTECTOR
G	THERMAL PROTECTOR
H	EARTH
I	
J	

Type *C*

POWER CONNECTOR	
N° PIN	**FUNCTION**
1	PHASE U
2	PHASE V
3	EARTH
4	PHASE W
5	BRAKE -
6	BRAKE +
7	THERMAL PROTECTOR
8	THERMAL PROTECTOR

CONNECTOR SIGNAL		
N° PIN	**FUNCTION** *ENCODER*	*RESOLVER*
A	+ 5 V	
B	/B	
C	0 V	Cos – (S4)
D	SHIELD	Cos (S2)
E		
F	HALL W	Sin – (S3)
G	HALLV	Sin (S1)
H	HALL U	
J		7 VRMS f=10KHz
K	HALL /U	0 V
L	/Z	
M	A	
N	/A	
P	B	
R	Z	
S		
T		
U	HALL /W	
V	HALL /V	

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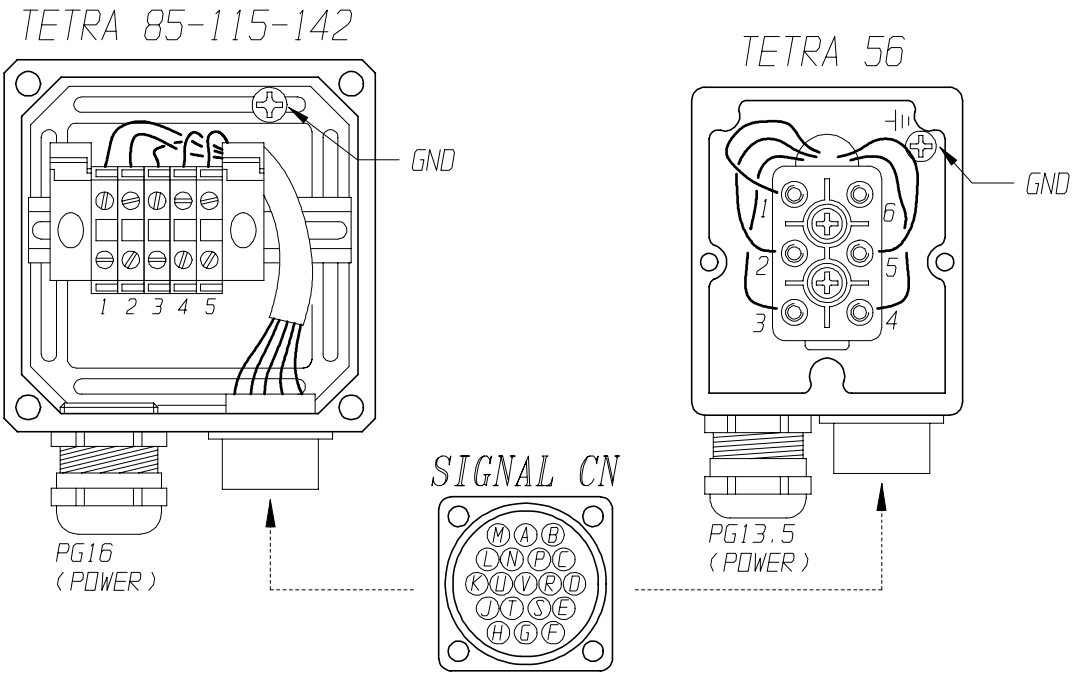
CONNECTIONS FOR CABLE GLAND + CONNECTOR



POWER CABLE GLAND	
N° PIN	**FUNCTION**
1	PHASE U
2	PHASE V
3	PHASE W
4	THERMAL PROTECTOR
5	THERMAL PROTECTOR

CONNECTOR SIGNAL		
N° PIN	**FUNCTION**	
	ENCODER	***RESOLVER***
A	+ 5 V	
B	/B	
C	0 V	Cos – (S4)
D	SHIELD	Cos (S2)
E		
F	HALL W	Sin – (S3)
G	HALLV	Sin (S1)
H	HALL U	
J		7 VRMS f=10KHz
K	HALL /U	0 V
L	/Z	
M	A	
N	/A	
P	B	
R	Z	
S		
T		
U	HALL /W	
V	HALL /V	

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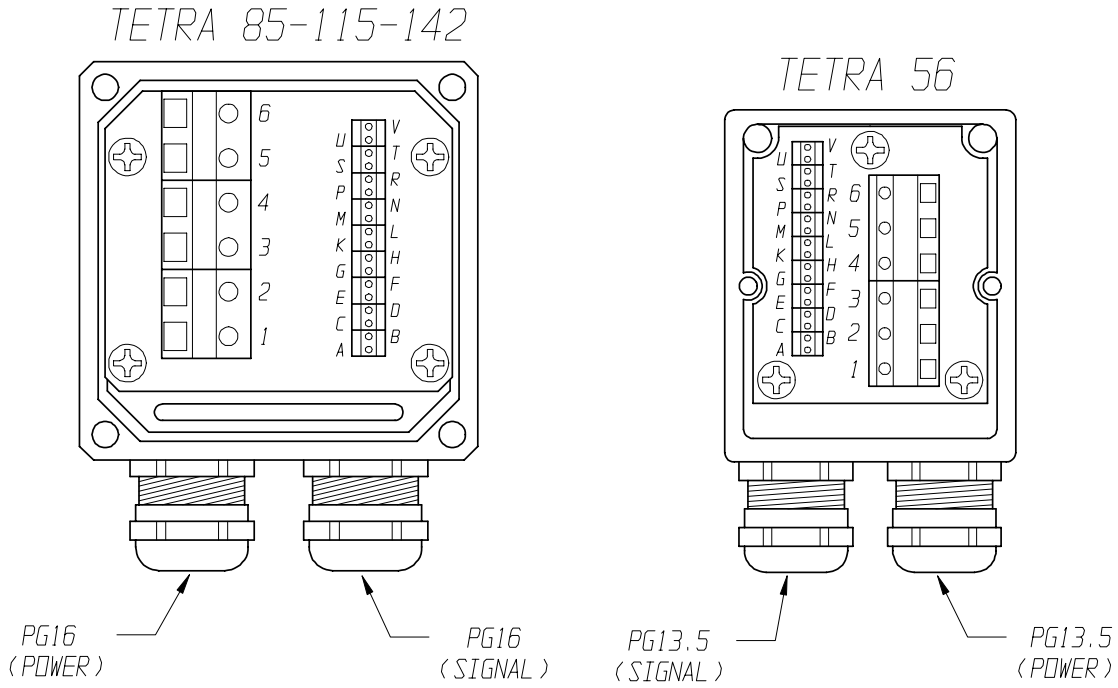
CONNECTIONS FOR DOUBLE CABLE GLAND



POWER CABLE GLAND	
N° PIN	**FUNCTION**
1	PHASE U
2	PHASE V
3	PHASE W
4	BRAKE -
5	BRAKE +
6	EARTH

SIGNAL CABLE GLAND		
N° PIN	**FUNCTION** *ENCODER*	*RESOLVER*
A	+ 5 V	
B	/B	
C	0 V	Cos – (S4)
D	SHIELD	Cos (S2)
E		
F	HALL W	Sin – (S3)
G	HALLV	Sin (S1)
H	HALL U	
J		7 VRMS f=10KHz
K	HALL /U	0 V
L	/Z	
M	A	
N	/A	
P	B	
R	Z	
S		
T		
U	HALL /W	
V	HALL /V	

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