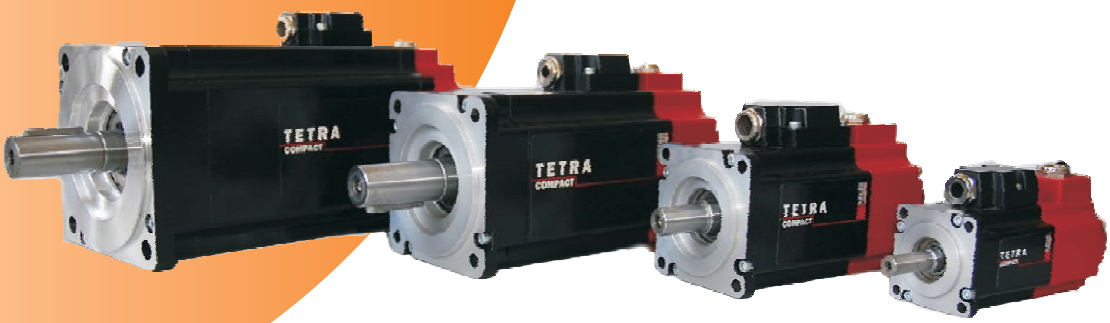
TETRA COMPACT

Brushless servomotors



MOTOR POWER COMPANY

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MOTOR POWER COMPANY

TETRA COMPACT
Brushless servomotors

Low power bracket brushless servomotors line with extremely compact dimensions thanks to a dedicated design along with a modern approach to industrialization, that makes TETRA COMPACT extraordinary when it comes to the compact shape/performances ratio.

TETRA COMPACT meets any project request thanks to the customization by the different windings and feedback, with encoders, resolvers and Hall Sensors for better adaptation to the technical requirements of the final application.

These servomotors guarantee high performances and high standards of reliability, efficiency of the system, long life of the motor and electromagnetic immunity. These servomotors are ideal for a vast range of applications, such as automatic machines for working iron, wood, plastic, glass, textiles and ceramic, as well as machines for packaging, sorting, robotics, handling, laser processes, for the medical sector and for many other uses.

A series of accessories is available to complete the range, amongst which power and signal connection cables for both permanent and mobile installation, safety brakes of the permanent magnet type and a set of specially designed planetary gearboxes which get the most out of the gearmotor combination.

- Sinusoidal wave form
- 8 poles motor with magnets in NdFeB
- IP 65 protection
- Class F insulation
- Feedback: Resolver, Sin-Cos encoder , TTL encoder, Hall sensors, absolute encoder
- Nominal speed: 3000 Rpm
- Maximum speed:6000 Rpm
- Safety brake with permanent magnets
- Insulation system UL /CSA : cURus , DV155J File nr.:E216686

CE c UL us

	Rated stall torque * (Nm)	Rated speed (Rpm)	Motor dimensions (mm)	Motor length (mm)	Brake length ** (mm)
TETRA COMPACT 40 0.16	0.16	From 5000 to 6000	40	91	31
TETRA COMPACT 40 0.32	0.32	From 5000 to 6000	60	40	31
TETRA COMPACT 60 0.65	0.65	From 1500 to 6000	60	111	37
TETRA COMPACT 60 1.3	1.3	From 1500 to 6000	60	136	37
TETRA COMPACT 80 1.5	1.5	From 1500 to 6000	80	128	42
TETRA COMPACT 80 2.8	2.8	From 1500 to 6000	80	153	42
TETRA COMPACT 100 3.5	3.5	From 1500 to 5000	100	145	50
TETRA COMPACT 100 6.0	6.0	From 1500 to 5000	100	175	50
TETRA COMPACT 100 8.5	8.5	From 1500 to 5000	100	205	50

* Output continuous ratings with 250x250x6mm heat sink flange coupling (300x300x6mm for Tetra Compact 100)
** The safety brake increases the motor length with value "Brake length"

MOTOR POWER COMPANY

How to order TETRA COMPACT

TC	040.016	03	E	001	D0	00
Product name	Model	Winding code	Feedback	Feedback Model	Connection	Optional

Product name
- TETRA COMPACT

Model
- 40 0.16
- 40 0.32
- 60 0.65
- 60 1.3
- 80 1.5
- 80 2.8
- 100 3.5
- 100 6.0
- 100 8.5

Winding code
- See data sheet

Preferred code 03 -07 -21

Feedback
- E Encoder
- R Resolver
- H Hall Sensors

Feedback Model
- 001 2000 ppr encoder 8 poles
- 002 1000 ppr encoder 8 poles
- 003 1024 ppr encoder 8 poles
- 004 2500 ppr encoder 8 poles
- 005 2048 ppr encoder 8 poles
- 006 4096 ppr encoder 8 poles
- 008 Hall sensor 8p
- 017 1024 ppr encoder 1Vpp
- 020 Encoder ABS EnDat 2.1/01 Multi-turn
- 021 Encoder ABS HIPERFACE Multi-turn
- 022 Encoder ABS HIPERFACE Single-turn
- 025 Encoder ABS EnDat 2.1/01 Single-turn
- 027 2048 ppr encoder 1Vpp
- 028 3600 ppr encoder 1Vpp
- 401 Resolver 2p

Connection
- D0 cable 300mm with mating connector Amp 4 -15 pin
- C0 Double connector M23, 8-17 pin
- C5 Double connector M23, 8-17 pin 90° out

Optional
- 00 no optional
- 02 safety brake
- 23 PT 130°C
- 24 PTC 130°C
- 25 KTY84
- 53 Shaft oil seal

BRUSHLESS SERVOMOTORS

SERIES

TETRA COMPACT 40

TORQUE [Nm]

0.16 **0.32**

SINEWAVE FORM		SIMBOLS	UNITS	WINDING CODE									
				TETRA COMPACT **0.16**					TETRA COMPACT **0.32**				
				01	**03**	**07**			01	**03**	**07**	**21**	
MOTOR SPEED	Vn drive 60 Vdc		[rpm]	**5000**	---	---			**5000**	---	---	---	
	Vn drive 100 Vdc		[rpm]		**5000**	---				**5000**	---	---	
	Vn drive 200 Vdc		[rpm]			**6000**					**6000**	---	
	Vn drive 230 Vac 1/3phase		[rpm]									**5000**	
	Vn drive 400 Vac 3phase		[rpm]										
SERVOMOTOR	WINDING DATA												
	Poles number	P				8					8		
	Continuous stall torque (*1)	Cn0	[Nm]			0.16					0.32		
	Rated power at 3000 rpm (*1)	P	[W]			50					100		
	Voltage constant ± 5%	Ke	[V_{rms}/K_{rpm}]	5.7	8.5	15			5.7	8.5	15	31.8	
	Torque constant ± 5%	Kt	[Nm/A_{rms}]	0.094	0.141	0.248			0.094	0.141	0.248	0.526	
	Stall current	In0	[Arms]	1.7	1.15	0.65			3.4	2.3	1.3	0.6	
	Peak torque	Cmax	[Nm]			0.48					0.96		
	Peak current	I cmax	[Arms]	5.6	3.8	2.1			11.2	7.5	4.25	2	
	Ph/ph resistance ±10% at 25°C	Rff	[Ohm]	2.2	5.36	16.7			0.99	2.4	7.46	33.84	
	Phase/phase inductance	Lff	[mH]	2.5	5.6	17.4			1.42	3.16	9.88	44.47	
	Electrical time constant	Te	[ms]	1.13	1.05	1.05			1.43	1.32	1.32		
	Thermal time constant	Tt	[min]			35					35		
	Operating temperature	Tr	[°C]			0 + 40					0 + 40		
	Protection degree	IP				65 (*)					65 (*)		
	Insulation class					F					F		
	MECHANICAL DATA												
	Moment of inertia	Jm	[$Kg\ cm^2$]			0.026					0.046		
	Max theorethical acceleration	αmax	[rad/s^2]			184600					208700		
	Mechanical time constant Tm	Tm	[ms]			0.9					0.7		
	Cogging torque	Tcog	[Nm]			$4.8 *10^{-3}$					$9.6 *10^{-3}$		
	Damping constant at 1000 rpm	Td	[Nm]			$3.2 *10^{-3}$					$4.8 *10^{-3}$		
	Max radial load (at 3000 rpm)	Fr	[N]			180 (applied on the shaft's middle)					180 (applied on the shaft's middle)		
	Max axial load	Fa	[N]			30 (applied on the shaft's middle)					30 (applied on the shaft's middle)		
	Weight	M	[Kg]			0.4					0.54		
THERMAL P.						SEE THERMAL PROTECTION DATA SHEET							
BRAKE	Type					STD 0.4							
	Static torque	Co	[Nm]			0.4							
	Rated voltage	Vn	[V]			24 Vcc + 6% -10% Stabilized							
	Rated current	In	[A]			0.34							
	Input power	Pn	[W]			8							
	Engaging time	Tr	[ms]			6							
	Release time	Tl	[ms]			10							

(*) with oil seal mounted on the flange; (*1) Output continuous ratings with 250 x 250 x 6 mm metallic heat sink flange coupling

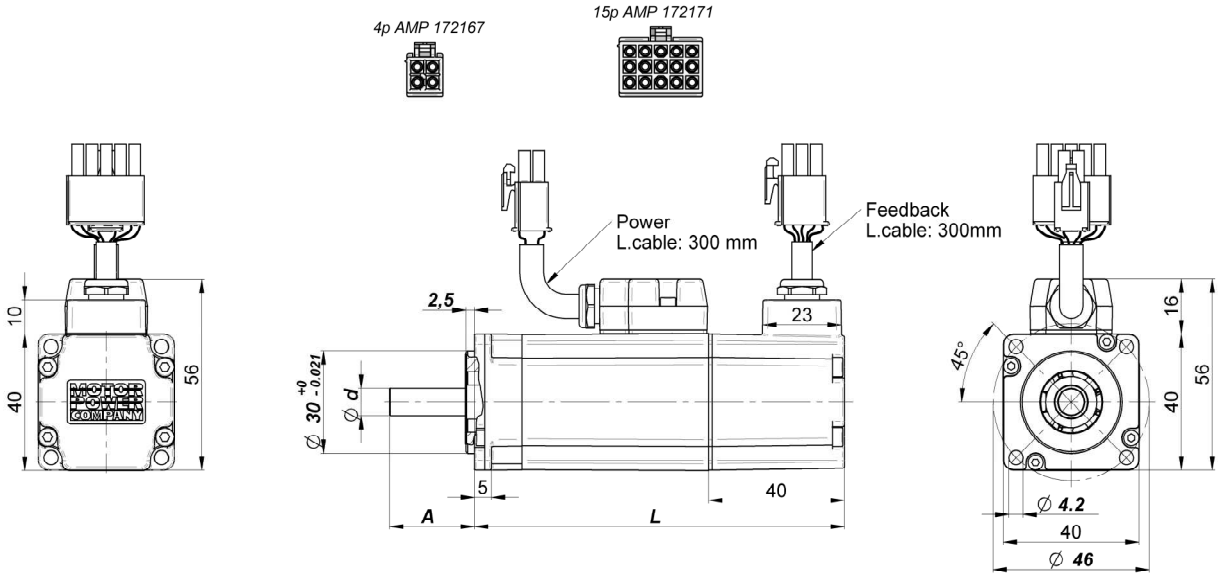
DATA SHEET N° TC-200901-00GB

SERIES

TETRA COMPACT 40

DIMENSIONS (mm)

TC 40 D0



TYPE	L	ϕd	A	F	C
0.16	91	8 (h7)	25	-	-
0.32	109	8 (h7)	25	-	-

Safety brake mounting increase lenght L: 31mm
TC40 D0 + Brake: the connector type 2P AMP 172165 is requested

Thermal protection: the connector type 6P AMP 172168 is requested

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BRUSHLESS SERVOMOTORS

SERIES

TETRA COMPACT 60

TORQUE [Nm]

0.65 **1.3**

	SINEWAVE FORM	SIMBOLS	UNITS	WINDING CODE								
				TETRA COMPACT **0.65**					TETRA COMPACT **1.3**			
				01	**03**	**07**	**21**		**07**	**21**	15	
MOTOR SPEED	Vn drive 60 Vdc		[rpm]	**5000**	3000	-			1700			
	Vn drive 100 Vdc		[rpm]		**5000**	3000	1500		3000	1500		
	Vn drive 200 Vdc		[rpm]			**6000**	3000		**6000**	3000	1700	
	Vn drive 230 Vac 1/3phase		[rpm]				**5000**			**5000**	3000	
	Vn drive 400 Vac 3phase		[rpm]								**5000**	
SERVOMOTOR	WINDING DATA											
	Poles number	P		8					8			
	Continuous stall torque (*1)	Cn0	[Nm]	0.65					1.3			
	Rated power at 3000 rpm (*1)	P	[W]	200					400			
	Voltage constant ± 5%	Ke	[V_{rms}/K_{rpm}]	5.7	8.5	15	31.8		15	31.8	55	
	Torque constant ± 5%	Kt	[Nm/A_{rms}]	0.094	0.141	0.248	0.526		0.248	0.526	0.91	
	Stall current	In0	[Arms]	6.9	4.6	2.62	1.25		5.25	2.5	1.24	
	Peak torque	Cmax	[Nm]	1.95					3.9			
	Peak current	I cmax	[Arms]	22.75	15.25	8.65	4.1		17.3	8.15	4.7	
	Ph/ph resistance ±10% at 25°C	Rff	[Ohm]	0.33	0.76	2.37	10.6		0.97	4.38	13	
	Phase/phase inductance	Lff	[mH]	0.90	1.9	5.9	26.5		3.11	14.9	41.8	
	Electrical time constant	Te	[ms]	2.7	2.5	2.48	2.5		3.2	3.39	3.22	
	Thermal time constant	Tt	[min]	30					30			
	Operating temperature	Tr	[°C]	0 + 40					0 + 40			
	Protection degree	IP		65 (*)					65 (*)			
	Insulation class			F					F			
	MECHANICAL DATA											
	Moment of inertia	Jm	[$Kg\ cm^2$]	0.15					0.24			
	Max theorethical acceleration	αmax	[rad/s^2]	130000					162500			
	Mechanical time constant Tm	Tm	[ms]	0.94					0.54			
	Cogging torque	Tcog	[Nm]	$1.95 *10^{-2}$					$3.9 *10^{-2}$			
	Damping constant at 1000 rpm	Td	[Nm]	$1.3*10^{-2}$					$2.5 *10^{-2}$			
	Max radial load (at 3000 rpm)	Fr	[N]	220 (applied on the shaft's middle)					220 (applied on the shaft's middle)			
	Max axial load	Fa	[N]	70 (applied on the shaft's middle)					70 (applied on the shaft's middle)			
	Weight	M	[Kg]	0.85					1.25			
THERMAL P.				SEE THERMAL PROTECTION DATA SHEET								
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 x 6 mm metallic heat sink flange coupling

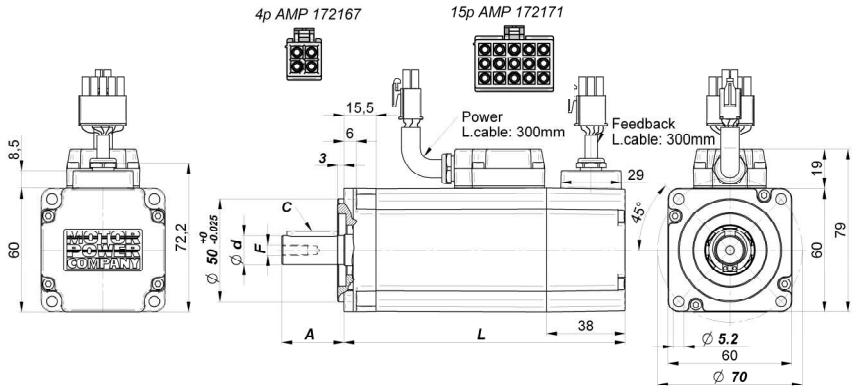
DATA SHEET N° TC-200901-00GB

SERIES

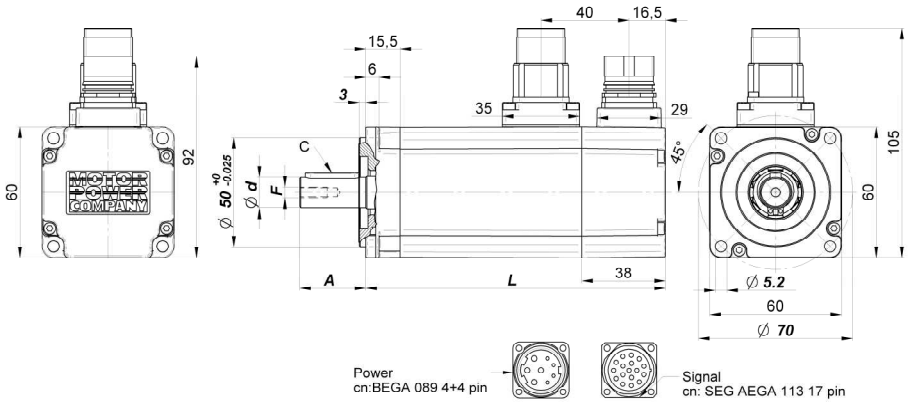
TETRA COMPACT 60

DIMENSIONS (mm)

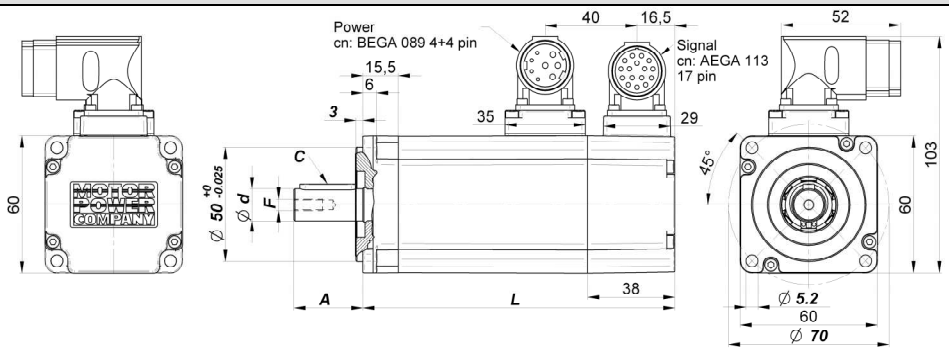
TC 60 D0



TC 60 C0



TC 60 C5



TYPE	L	ϕd	A	F	C
0.65	111	11 (h6)	23	M4	4*4*18
1.3	136	14 (h6)	30	M5	5*5*25

Safety brake increases the motor lenght L of 37mm
TC60 D0 + Brake: the connector type 2P AMP 172165 is requested

Thermal protection: the connector type 6P AMP 172168 is requested

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BRUSHLESS SERVOMOTORS

SERIES

TETRA COMPACT 80

TORQUE[Nm]

1.5 **2.8**

	SINEWAVE FORM	SIMBOLS	UNITS	WINDING CODE								
				TETRACOMPACT 1.5					TETRACOMPACT 2.8			
				07	**21**	15	17		**21**	15	17	
MOTOR SPEED	Vn drive 60 Vdc		[rpm]	1700								
	Vn drive 100 Vdc		[rpm]	3000	1500				1500			
	Vn drive 200 Vdc		[rpm]	**6000**	3000	1900			3000	1900		
	Vn drive 230 Vac 1/3phase		[rpm]		**5000**	3000	1700		**5000**	3000	1700	
	Vn drive 400 Vac 3phase		[rpm]			**5000**	**3000**			**5000**	**3000**	
SERVOMOTOR	WINDING DATA											
	Poles number	P				8				8		
	Continuous stall torque (*1)	Cn0	[Nm]			1.5				2.8		
	Rated power at 3000 rpm (*1)	P	[W]			470				880		
	Voltage constant ± 5%	Ke	[V_{rms}/K_{rpm}]	15	31.8	55	96.7		31.8	55	96.7	
	Torque constant ± 5%	Kt	[Nm/A_{rms}]	0.248	0.526	0.91	1.6		0.526	0.91	1.6	
	Stall current	In0	[Arms]	6.1	2.85	1.65	0.94		5.3	3.1	1.75	
	Peak torque	Cmax	[Nm]			4.5				8.4		
	Peak current	I cmax	[Arms]	19.95	9.4	5.44	3.1		17.5	10.15	5.8	
	Ph/ph resistance ±10% at 25°C	Rff	[Ohm]	0.39	1.76	5.24	16.4		0.85	2.7	7.9	
	Phase/phase inductance	Lff	[mH]	1.76	7.9	23.65	73.1		3.82	11.46	35.4	
	Electrical time constant	Te	[ms]	4.5	4.49	4.51	4.45		5.6	5.46	5.44	
	Thermal time constant	Tt	[min]			40				40		
	Operating temperature	Tr	[°C]			0 + 40				0 + 40		
	Protection degree	IP				65 (*)				65 (*)		
	Insulation class					F				F		
	MECHANICAL DATA											
	Moment of inertia	Jm	[Kg cm^2]			0.64				1.16		
	Max theorethical acceleration	αmax	[rad/s^2]			70300				72400		
	Mechanical time constant Tm	Tm	[ms]			0.91				0.65		
	Cogging torque	Tcog	[Nm]			$4.5 *10^{-2}$				$9 *10^{-2}$		
	Damping constant at 1000 rpm	Td	[Nm]			$3 *10^{-2}$				$6 *10^{-2}$		
	Max radial load (at 3000 rpm)	Fr	[N]			350 (applied on the shaft's middle)				350 (applied on the shaft's middle)		
	Max axial load	Fa	[N]			110 (applied on the shaft's middle)				110 (applied on the shaft's middle)		
	Weight	M	[Kg]			2.25				3.05		
THERMAL P.						SEE THERMAL PROTECTION DATA SHEET						
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 x 6 mm metallic heat sink flange coupling

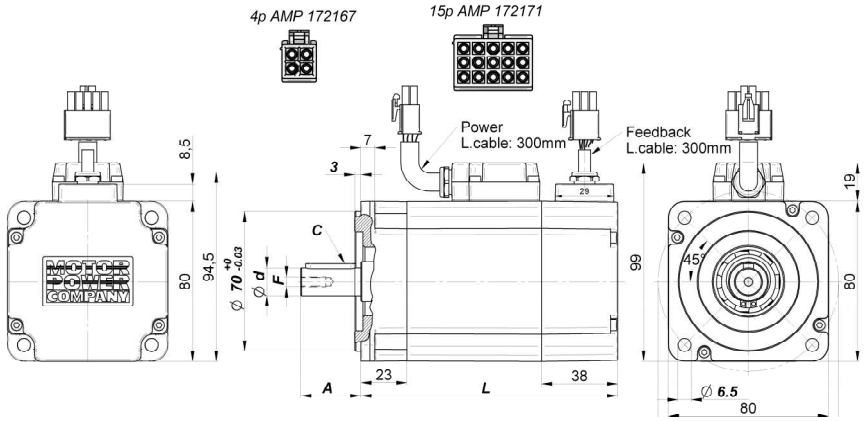
DATA SHEET N° TC-200901-00GB

SERIES

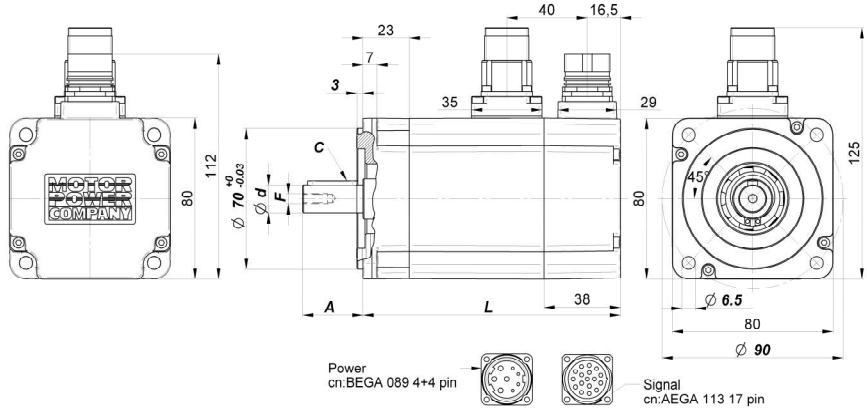
TETRA COMPACT 80

DIMENSIONS (mm)

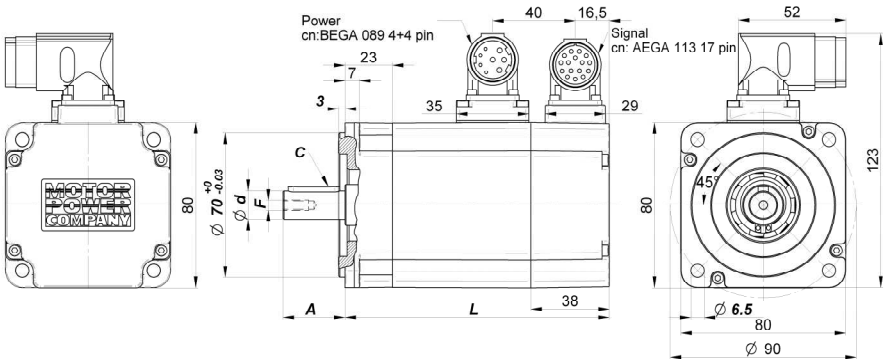
TC 80 D0



TC 80 C0



TC 80 C5



TYPE	L	ϕd	A	F	C
1.5	128	14 (h6)	30	M5	5*5*25
2.8	153	19 (h6)	40	M6	6*6*30

Safety brake increases the motor lenght L of 42mm
TC80 D0 + Brake: the connector type 2P AMP 172165 is requested

Thermal protection: the connector type 6P AMP 172168 is requested

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BRUSHLESS SERVOMOTORS

SERIES

TETRA COMPACT 100

TORQUE[Nm]

3.5 **6**

	SINEWAVE FORM	SIMBOLS	UNITS	WINDING CODE							
				TETRACOMPACT 3.5				TETRACOMPACT 6			
				21	15	16	17	15	16	17	
MOTOR SPEED	Vn drive 100 Vdc		[rpm]	1500							
	Vn drive 200 Vdc		[rpm]	3000	1900			1900			
	Vn drive 230 Vac 1/3phase		[rpm]	5000	3000	2000	1700	3000	2000	1700	
	Vn drive 400 Vac 3phase		[rpm]	-	5000	4000	3000	5000	4000	3000	
SERVOMOTOR	WINDING DATA										
	Poles number	P		8				8			
	Continuous stall torque (*1)	Cn0	[Nm]	3.5				6			
	Rated power at 3000 rpm (*1)	P	[W]	1000				1500			
	Voltage constant ± 5%	Ke	[V_{rms}/K_{rpm}]	31.8	55	72.5	97	55	72.5	97	
	Torque constant ± 5%	Kt	[Nm/A_{rms}]	0.53	0.91	1.20	1.60	0.91	1.20	1.60	
	Stall current	In0	[Arms]	6.6	3.85	2.92	2.19	6.59	5	3.75	
	Peak torque	Cmax	[Nm]	11				22			
	Peak current	I cmax	[Arms]	20.8	12.1	9.17	6.88	24.2	18.3	13.8	
	Ph/ph resistance ±10% at 25°C	Rff	[Ohm]	1.1	3.28	5.70	10.20	1.17	2.04	3.64	
	Phase/phase inductance	Lff	[mH]	4.44	13.28	23.07	41.3	6.33	11	19.7	
	Electrical time constant	Te	[ms]	4.04	4.04	4.04	4.04	5.4	5.4	5.4	
	Thermal time constant	Tt	[min]	40				40			
	Operating temperature	Tr	[°C]	0 + 40				0 + 40			
	Protection degree	IP		65 (*)				65 (*)			
	Insulation class			F				F			
	MECHANICAL DATA										
	Moment of inertia	Jm	[Kg cm^2]	1.48				2.8			
	Max theorethical acceleration	αmax	[rad/s^2]	74300				78500			
	Mechanical time constant Tm	Tm	[ms]	5.1				4.1			
	Cogging torque	Tcog	[Nm]	0.102				0.198			
	Damping constant at 1000 rpm	Td	[Nm]	0.068				0.132			
	Max radial load (at 3000 rpm)	Fr	[N]	626 (applied on the shaft's middle)				626 (applied on the shaft's middle)			
	Max axial load	Fa	[N]	225 (applied on the shaft's middle)				225 (applied on the shaft's middle)			
	Weight	M	[Kg]	3.90				5.60			
THERMAL P.				SEE THERMAL PROTECTION DATA SHEET							
BRAKE	Type			STD 9							
	Static torque	Co	[Nm]	9							
	Rated voltage	Vn	[V]	24 Vcc +6% -10% Stabilizzato							
	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 250 x 250 x 6 mm metallic heat sink flange coupling

DATA SHEET N° TC-200702-00GB

BRUSHLESS SERVOMOTORS

SERIES

TORQUE[Nm]

TETRA COMPACT 100

8.5

	SINEWAVE FORM	SIMBOLS	UNITS	WINDING CODE										
				TETRACOMPACT 8.5										
					15	16	17							
MOTOR SPEED	Vn drive 100 Vdc		[rpm]											
	Vn drive 200 Vdc		[rpm]		1900									
	Vn drive 230 Vac 1/3phase		[rpm]		3000	2000	1700							
	Vn drive 400 Vac 3phase		[rpm]	-	5000	4000	3000							
SERVOMOTOR	WINDING DATA													
	Poles number	P				8								
	Continuous stall torque (*1)	Cn0	[Nm]			8.5								
	Rated power at 3000 rpm (*1)	P	[W]			2000								
	Voltage constant ± 5%	Ke	[V_{rms}/K_{rpm}]		55	72.5	97							
	Torque constant ± 5%	Kt	[Nm/A_{rms}]		0.91	1.20	1.60							
	Stall current	In0	[Arms]		9.34	7.10	5.31							
	Peak torque	Cmax	[Nm]			33								
	Peak current	I cmax	[Arms]		36.3	27.5	20.6							
	Ph/ph resistance ±10% at 25°C	Rff	[Ohm]		0.69	1.2	2.2							
	Phase/phase inductance	Lff	[mH]		4.22	7.33	13.13							
	Electrical time constant	Te	[ms]		6.1	6.1	6.0							
	Thermal time constant	Tt	[min]			50								
	Operating temperature	Tr	[°C]			0 + 40								
	Protection degree	IP				65 (*)								
	Insulation class					F								
	MECHANICAL DATA													
	Moment of inertia	Jm	[Kg cm^2]			4.1								
	Max theorethical acceleration	αmax	[rad/s^2]			80487								
	Mechanical time constant Tm	Tm	[ms]			0.34								
	Cogging torque	Tcog	[Nm]			0.27								
	Damping constant at 1000 rpm	Td	[Nm]			0.18								
	Max radial load (at 3000 rpm)	Fr	[N]			696 (applied on the shaft's middle)								
	Max axial load	Fa	[N]			225 (applied on the shaft's middle)								
	Weight	M	[Kg]			7.30								
THERMAL P.														
						SEE THERMAL PROTECTION DATA SHEET								
BRAKE	Type					STD 9								
	Static torque	Co	[Nm]			9								
	Rated voltage	Vn	[V]			24 Vcc +6% -10% Stabilizzato								
	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 250 x 250 x 6 mm metallic heat sink flange coupling

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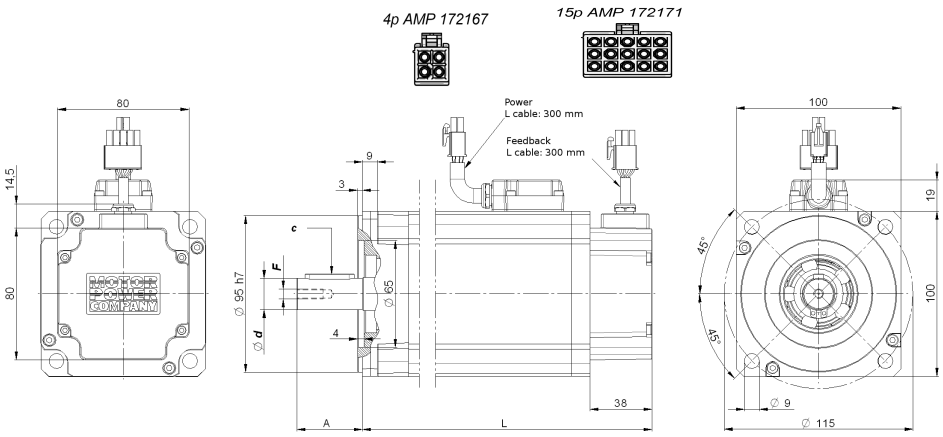
SERIES

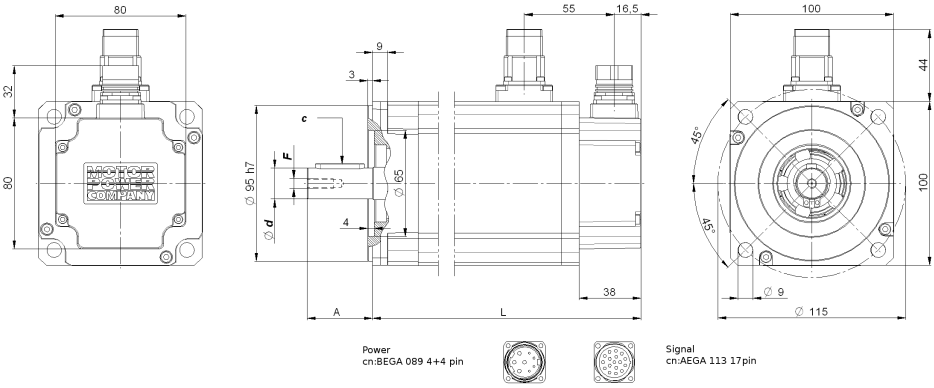
TETRA COMPACT 100

DIMENSIONS (mm)

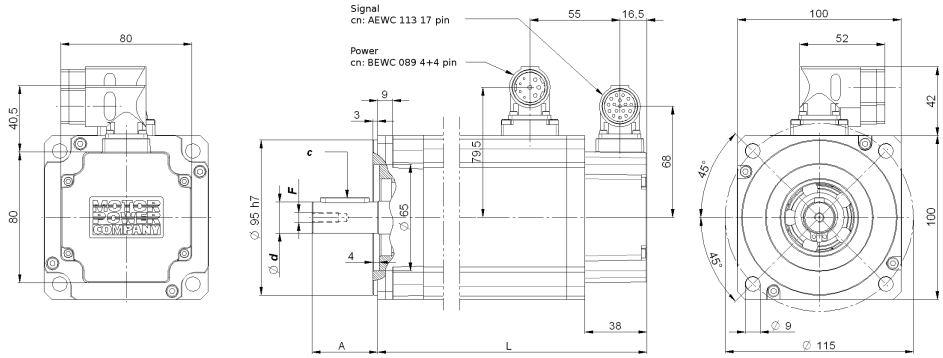
TC 100 D0



TC 100 C0



TC 100 C5



TIPO	L	ϕd	A	F	C
3.5	145	14 (h6)	30	M5	5*5*25
6	175	19 (h6)	40	M6	6*6*30
8.5	205	19 (h6)	40	M6	6*6*30

Safety brake increases the motor lenght L of 50mm
TC100 D0 + Brake: the connector type 2P AMP 172165 is requested
Thermal protection: the connector type 6P AMP 172168 is requested

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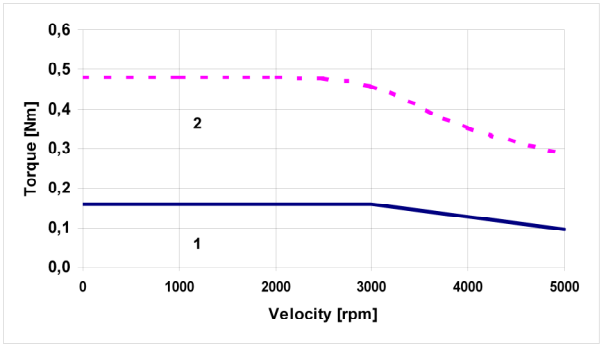
SERIES

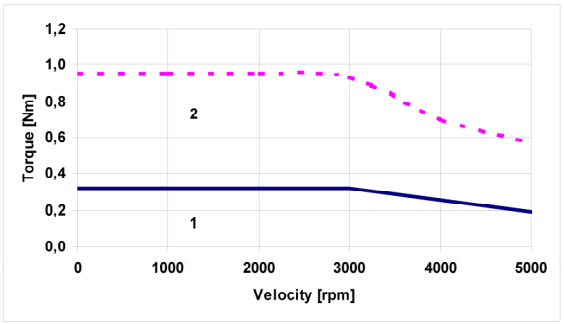
TETRA COMPACT

OPERATIVE CURVES

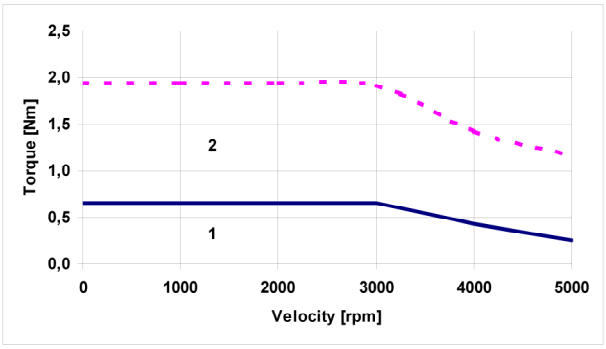
Tetra Compact 40. 0,16



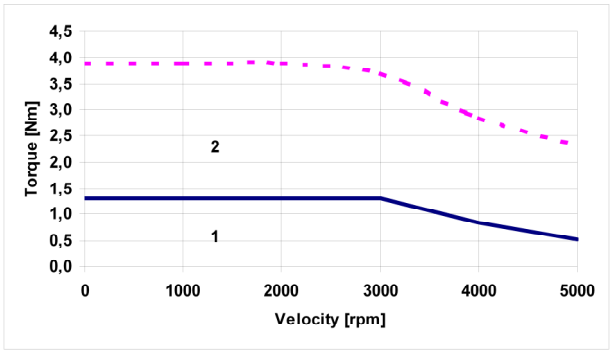
Tetra Compact 40. 0,32



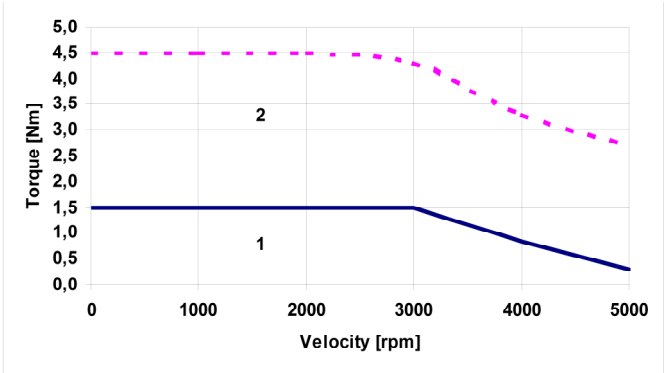
Tetra Compact 60. 0,65



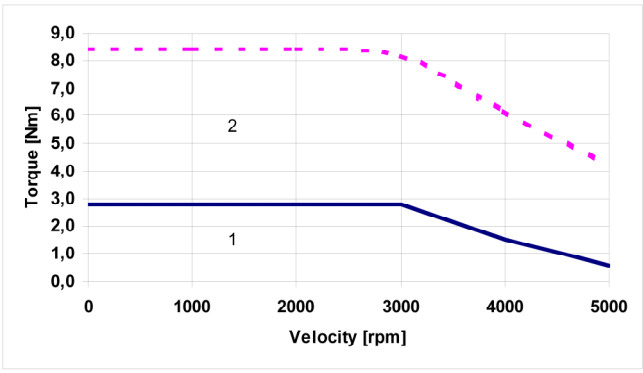
Tetra Compact 60. 1,3



Tetra Compact 80. 1,5



Tetra Compact 80. 2,8



1 – Continuous Duty Area 2 - Intermittent Duty Area

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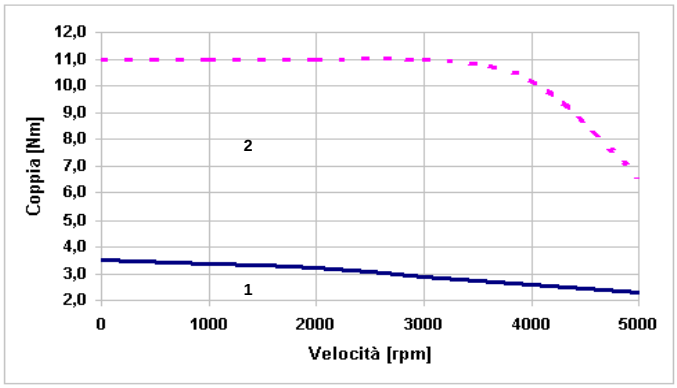
SERIES

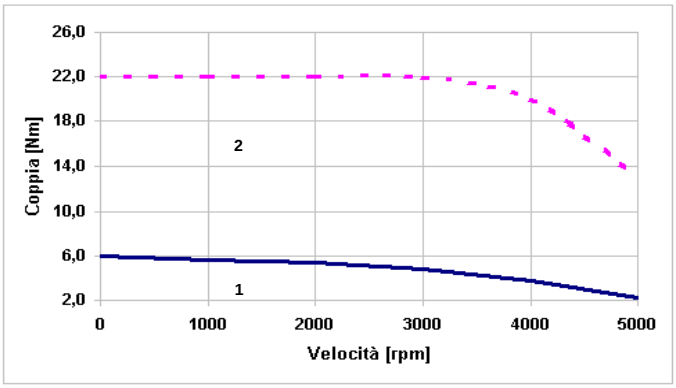
TETRA COMPACT

OPERATIVE CURVES

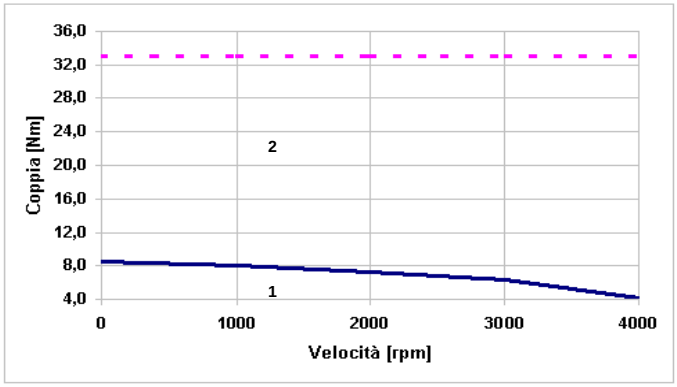
Tetra Compact 100. 3.5



Tetra Compact 100. 6



Tetra Compact 100. 8.5



1 – Continuous Duty Area 2 – Intermittent Duty Area Wiring n°15 400Vac

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TETRA COMPACT

TRANSDUCER SERIES
PAGE.1

TRANSDUCERS/

E TYPE: ENCODER TTL (NR. FEEDBACK ORDER 001-002-003-004-005-006)			TC 40 60 80 100
NOMINAL VOLTAGE	Vn	[V]	5 ± 5%
NOMINAL CURRENT	In	[mA]	200
MAX FREQUENCY	F	[KHz]	200
WORKING TEMPERATURE	Tn	[°C]	- 20 ÷ + 100°
ELECTRONIC TYPE			LINE DRIVER AM 26 LS31
ZERO IMPULSE			ONE AT A LAP
N° OF PULSES REVOLUTION		[ppr]	1000-1024-2000-2048-2500-4096
RESOLUTION		[cpr]	4000-4096-8000-8192-10000-16384
N° OF COMMUTATION SIGNAL			3 DIFFERENTIAL
ROTOR INERTIA	Jm	[Kg cm²]	0.01
MAX VELOCITY		[rpm]	6000

E TYPE: ENCODER ENDAT2.1 / 01 (NR. FEEDBACK ORDER 020-025)			TC 40 60 80 100	
NOMINAL VOLTAGE	Vn	[V]	5 ± 5%	
NOMINAL CURRENT	In	[mA]	≤180	≤210
MAX FREQUENCY FOR SIN COS SIGNAL	F	[KHz]	6	
WORKING TEMPERATURE	Tn	[°C]	- 15 ÷ + 115°	
INTERFACE TYPE			Endat 2.1 / 01	
N° ABSOLUTE SINGLETURN POSITIONS			262144 (18 Bits)	262144 (18 Bits)
N° ABSOLUTE MULTITURN			-	4096 (12 Bits)
N° OF PULSES REVOLUTION			16	
SYSTEM ACCURACY			±480"	
ROTOR INERTIA	Jm	[Kg cm²]	0.0076	
MAX VELOCITY		[rpm]	15000	12000

E TYPE: ENCODER HIPERFACE (NR. FEEDBACK ORDER 021-022)			TC 60 80 100	
NOMINAL VOLTAGE	Vn	[V]	7 ÷ 12	
NOMINAL CURRENT	In	[mA]	60	
MAX FREQUENCY FOR SIN COS SIGNAL	F	[KHz]	65	
WORKING TEMPERATURE	Tn	[°C]	- 20 ÷ + 110°	
INTERFACE TYPE			Hiperface	
N° ABSOLUTE SINGLETURN POSITIONS			4096 (12 Bits)	4096 (12 Bits)
N° ABSOLUTE MULTITURN			-	4096 (12 Bits)
N° OF PULSES REVOLUTION			128	
SYSTEM ACCURACY			±320"	
ROTOR INERTIA	Jm	[Kg cm²]	0.0045	
MAX VELOCITY		[rpm]	12000	9000

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TETRA COMPACT

TRANSDUCER SERIES
PAGE.2

TRANSDUCERS

E TYPE: ENCODER SIN COS (NR. FEEDBACK ORDER 017-027-028)			**TC 80 100**
NOMINAL VOLTAGE	Vn	[V]	5 ± 10%
NOMINAL CURRENT	In	[mA]	≤ 120
MAX FREQUENCY	F	[KHz]	180
WORKING TEMPERATURE	Tn	[°C]	- 30 ÷ + 100°
ELECTRONIC TYPE			1 Vpp
ZERO IMPULSE			ONE AT A LAP
N° OF PULSES REVOLUTION		[ppr]	1024-2048-3600
RESOLUTION		[cpr]	DEPENDENT INTERPOLATOR
N° OF COMMUTATION SIGNAL			-
ROTOR INERTIA	Jm	[Kg cm^2]	0.003
MAX VELOCITY		[rpm]	12000

R TYPE: RESOLVER (NR. FEEDBACK ORDER 401)			**TC 40**	**TC 60 80 100**
NOMINAL VOLTAGE	Vn	[V rms]	7 ± 5%	7 ± 5%
NOMINAL CURRENT	In	[mA]	18	18
PHASE SHIFT			10°	0°
ELECTRIC ERROR			± 10′	± 10′
MIN. SIN AMPLITUDE		[mVrms]	20	20
FREQUENCY	F	[KHz]	10	10
POLES NUMBER			2	2
TRASFORMER RATIO			0.5 ± 5%	0.5 ± 5%
INPUT IMPEDANCE	Zro	[ohm]	160	70 + j 100
OUTPUT IMPEDANCE	Zss	[ohm]	130	175 + j 275
WORKING TEMPERATURE	Tn	[°C]	- 55 ÷ + 155°	- 55 ÷ + 155°
ROTOR INERTIA	Jm	[Kg cm^2]	0.006	0.03

H TYPE: SONDA DI HALL (NR. FEEDBACK ORDER 008)			**TC 40 60 80 100**
NOMINAL VOLTAGE	Vn	[V]	5 ± 5%
NOMINAL CURRENT	In	[mA]	100
WORKING TEMPERATURE	Tn	[°C]	-20° ÷ +100°
ELECTRONIC TYPE			LINE DRIVER AM 26 LS31
N° OF COMMUTATION SIGNAL			3 DIFFERENTIAL

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TETRA COMPACT

THERMAL PROTECTION (OPTIONAL)

THERMAL PROTECTIONS

PT TYPE: THERMAL PROTECTOR			TC 60 80 100
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]	130 °C ± 2.5K
RESETTING TEMPERATURE	Tr	[°C]	30 °C ± 15°K
OPERATIVE TIME	[ms]		1
INSULATION CLASS			F

PTC TYPE : THERMAL SENSOR			TC 40 60 80 100
TYPE OF THERMAL CUT - OFF			PTC
RATED VOLTAGE	Vn	[V dc]	7.5
OPERATIVE TEMPERATURE	Tref	[°C]	130
RESISTANCE AT 25°C	R	[Ω]	20……250
RESISTANCE AT TREF – 5K / MEASURED VOLTAGE	R	[Ω]/[Vdc]	≤ 550 / ≤ 2.5
RESISTANCE AT TREF + 5K	R	[Ω]/[Vdc]	≥ 1330 / ≤ 2.5
RESISTANCE AT TREF + 15K	R	[Ω]/[Vdc]	≥ 4000 / ≤ 7.5
INSULATION CLASS			F
HIGH VOLTAGE INSULATION	Hv	[kV]	2.5

TIPO **KTY84** : THERMAL SENSOR			TC 40 60 80 100
TYPE OF THERMAL CUT - OFF			KTY84 - 130
OPERATIVE TEMPERATURE	Tref	[°C]	0 155
RESISTANCE AT 25°C	R	[Ω]	577……629
INSULATION CLASS			F
HIGH VOLTAGE INSULATION	Hv	[kV]	2.5

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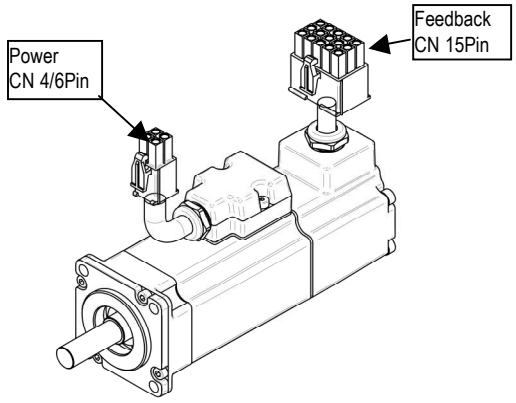
SERIES

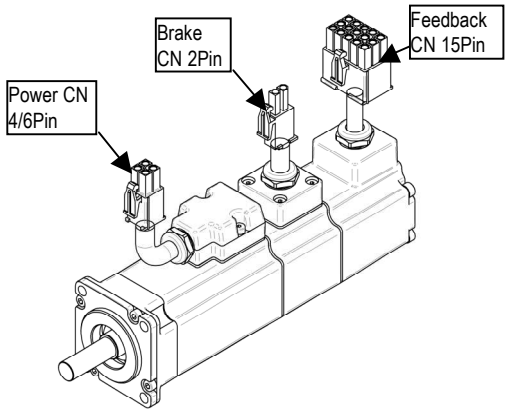
TETRA COMPACT

STANDARD CONNECTIONS

Motor



Motor + Safety brake



CONNECTION TYPE D0

Power Cn 4/6pin

Pin	*FUNCTIONS*
1	Phase U
2	Phase V
3	Phase W
4	PE

Thermal Protection (optional)

5	PT / (PTC+) / (KTY84+)
6	PT / (PTC -) / (KTY84-)

Brake Cn 2 pin (optional)

Pin	*FUNCTIONS*
1	+24 Vdc
2	0

Feedback Cn 15pin

ENCODER		RESOLVER		HALL SENSORS	
Pin	*FUNCTIONS*	*Pin*	*FUNCTIONS*	*Pin*	*FUNCTIONS*
1	*Ch A*	1	Sin +	1	-
2	Ch /A	2	Sin -	2	-
3	Ch B	3	Cos +	3	-
4	Ch /B	4	Cos -	4	-
5	Ch Z	5	Ref +	5	-
6	Ch /Z	6	Ref -	6	-
7	Hall U	7	-	7	Hall U
8	Hall /U	8	-	8	Hall /U
9	Hall V	9		9	Hall V
10	Hall /V	10	-	10	Hall /V
11	Hall W	11	-	11	Hall W
12	Hall /W	12	-	12	Hall /W
13	+ 5Vdc	13	-	13	+ 5Vdc
14	0V	14	-	14	0V
15	Shield	15	Shield	15	Shield

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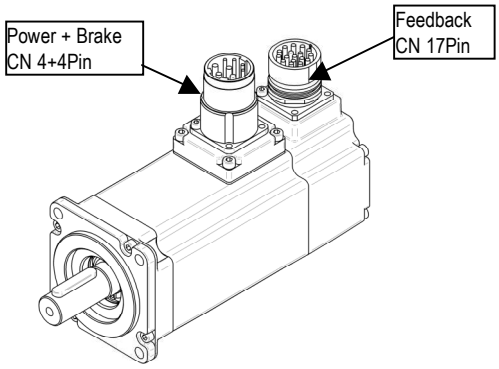
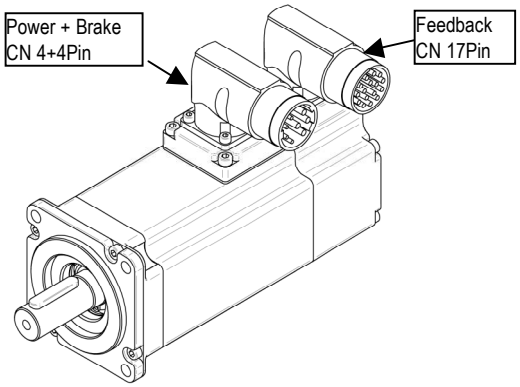
SERIES

TETRA COMPACT 60/80/100

OPTIONAL CONNECTIONS

Motor + Safety brake ***





CONNECTIONS TYPE C0 / C5

Power Cn 4+4 pin		Feedback Cn 17 pin					
		ENCODER		RESOLVER		HALL SENSORS	
Pin	*FUNCTIONS*	*Pin*	*FUNCTIONS*	*Pin*	*FUNCTIONS*	*Pin*	*FUNCTIONS*
1	Phase U	1	Hall W	1	-	1	Hall W
2	PE	2	Hall U	2	-	2	Hall U
3	Phase W	3	0V	3	-	3	0V
4	Phase V	4	+ 5Vdc	4	-	4	+ 5Vdc
		5	Ch /A	5	Sin -	5	-
		6	*Ch A*	6	Sin +	6	-
		7	Ch /Z	7	Ref -	7	-
Brake (optional)		8	Ch Z	8	Ref +	8	-
Pin	*FUNCTIONS*	9	Hall V	9	-	9	Hall V
A	+24 Vdc	10	Shield	10	-	10	Shield
B	0	11	Ch /B	11	Cos -	11	-
		12	Ch B	12	Cos +	12	-
Thermal Protector (optional)		13	Hall /W	13	-	13	Hall /W
Pin	*FUNCTIONS*	14	Hall /V	14	-	14	Hall /V
C	PT / (PTC+) / (KTY84+)	15	Hall /U	15	-	15	Hall /U
D	PT / (PTC -) / (KTY84-)	16	-	16	-	16	-
		17	-	17	-	17	-

*** When mounted

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TETRA COMPACT

OPTIONAL CABLES

GENERAL TABLE OPTIONAL CABLE FOR BRUSHLESS SERVOMOTORS SERIES TETRA COMPACT

CABLE TYPE	CONNECTION OUTPUT SERVOMOTOR SIDE	CONNECTION OUTPUT USER SIDE
Motor power supply	CN 4 pin AMP	Flying leads
Motor power + thermal protection supply	CN 6 pin AMP	Flying leads
Safety brake supply	CN 2 pin AMP	Flying leads
Signal 01	CN 15 pin AMP	Flying leads
Signal 02	CN 15 pin AMP	CN 12 pin MOLEX
Signal 03	CN 15 pin AMP	CN 15 pin D Type
Signal 04	CN 15 pin AMP	CN 20 pin 3M
Motor power supply 02	CN 8 pin M23	Flying leads
Signal 05	CN 17 pin M23	Flying leads
Signal 06	CN 17 pin M23	CN 12 pin MOLEX
Signal 07	CN 17 pin M23	CN 15 pin D Type
Signal 08	CN 17 pin M23	CN 20 pin 3M
Signal 09	CN 17 pin M23	CN 15 pin D Type

Cables lengths are 3 – 5 – 10 meters, whose order code are printed in each description page.

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TETRA COMPACT

OPTIONAL CONNECTORS

GENERAL TABLE OPTIONAL CONNECTORS FOR BRUSHLESS SERVOMOTORS SERIES TETRA COMPACT

CONNECTOR SET	ORDER CODE	CONNECTION TYPE
CN 2 pin AMP 172157-1+ PIN 171637-1	007117000300	Power brake safety D0
CN 4 pin AMP 172159-1+ PIN 171637-1	007117000302	Power Motor D0
CN 6 pin AMP 172160-1+ PIN 171367-1	007117000304	Power Motor + Thermal Protector
CN 15 pin AMP 172163-1+ PIN 171361-1	007117000306	Signal Motor D0
CN 8 pin M23 Flying + PIN	005117001096	Power Motor C0-C5
CN 17 pin M23 Flying + PIN	005117001104	Signal Motor C0-C5

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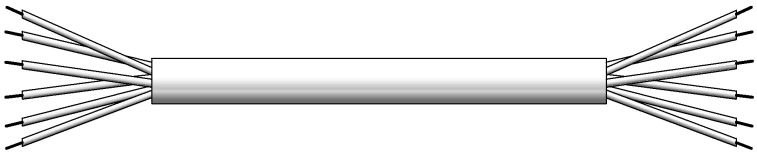
BRUSHLESS SERVOMOTORS

SERIES

TETRA COMPACT

POWER CABLE DATA

MOTOR POWER CABLE + THERMAL PROTECTION



TECHNICAL DATA

Description:……FE(4G1,5+2x0,25)ccST/R-Pu
Moving speed……..……..……..100 m/min
Maximum acceleration…….……4 m/s²
Outer Ø……..……..……..….9 ± 0.2mm
Minimum bending radius……..……..……...10 x Ø
Operating temperature :….-20°C +80°C static application
……..…...-5°C +80°C dynamic laying
Rated voltage:...…….……..…….1000 V
Test voltage:……3kV
Max conductor resistance (20°): 0.25mm²…..80 Ω/km
1.5 mm²……..13,3 Ω/km

Insulation: polyolefin, red, black color (Ø outer 1,25mm) UNEL grey, black, brown, yellow/green (Ø outer 2,4mm)
Jacket : polyurethane compound, black RAL 9005 glazed
Conductor : electrolytic copper braid not tinned – 2 wires 0.25 mm² - 4 wires 1,5 mm² - Class 5 IEC 60228
Shield jacket: full tinned copper covered ≥85%
Shield wire: tinned copper – 1 wire 0.5 mm²

UL COMPLIANCE

NORM UL 758 and CSA C22.2 No. 210.2

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SERIES

TETRA COMPACT

POWER CABLE DATA

BRAKE CABLE

TECHNICAL DATA

Description :.....FE(2x1)ccST/R-Pu
Moving speed .....100 m/min
Maximum acceleration .....4 m/s²
Outer Ø:.....6,6 ± 0.2mm
Minimum bending radius .....10 x Ø
Operating temperature....:-20°C +80°C Static application
.....-5°C +80°C dynamic laying
Rated voltage:.....1000 V
Test voltage:.....3kV
Max conductor resistance (20°): 1 mm².....19,5 Ω/km

Insulation: Polyolefin, brown, blue color UNEL (Ø outer 2,1mm)
Jacket : polyurethane compound, black RAL 9005 glazed
Conductor : electrolytic copper braid not tinned – 2 wires 1 mm² - Class 5 IEC 60228
Shield jacket: full tinned copper covered ≥85%
Shield wire : tinned copper – 1 wire 0.5 mm²

UL COMPLIANCE

NORM UL 758 and CSA C22.2 No. 210.2

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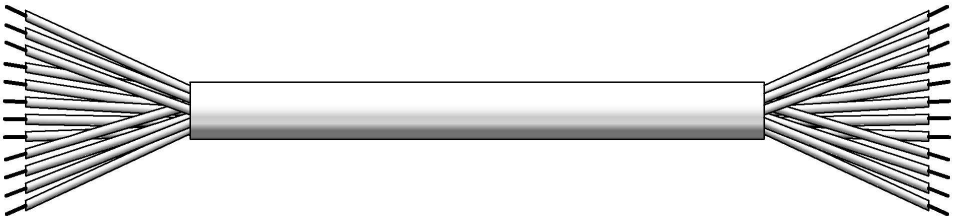
BRUSHLESS SERVOMOTORS

SERIES

TETRA COMPACT

SIGNAL CABLE

FEEDBACK CABLE



TECHNICAL DATA

Description :…….FE(8x2xAWG 28)ccST/R-Pu
Maximum speed……..100 m/min
Maximum acceleration ……..….4 m/s²
Outer Ø:……...……..…7 ± 0.2
Minimum bending radius……..…..…...10 x Ø
Operating temperature:….-20°C +80°C static application
……..…...-5°C +80°C dynamyc laying
Rated voltage:…..……..……..……..300 V
Conductor resistance:……...…… ≤ 215 Ω/km
Characteristic impedance :……..……100 Ω
Capacitance:..……..……..……50 pF/m
Nominal velocity of propagation :……...……..….66%

Insulation: polyolefin, couple colors DIN 47100, Ø outer 0.85mm
Jacket : polyurethene compound, black RAL 9005 glazed
Conductor : electrolytic copper braid not tinned, 16 wires (8 twisted pairs), AWG24 – 0.22mm²
Shield jacket: full tinned copper, covered ≥85%
Shield wire: tinned copper – 1 wire AWG 24
Insulation resistance: power: ≥20 Mohm. Km

UL COMPLIANCE

NORM UL 758 and CSA C22.2 No. 210.2

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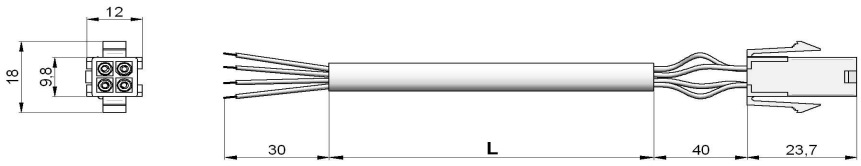
SERIES

TETRA COMPACT

POWER CABLES

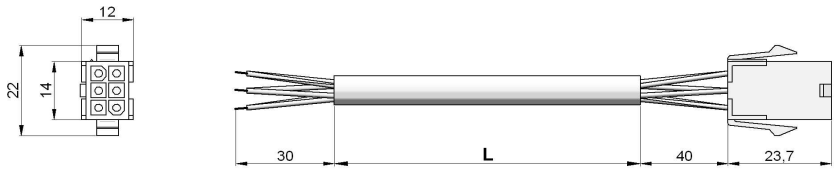
Power cable: CN 4pin - Fliyng leads



4 pin Power		
Pin	*FUNCTION*	*COLOR*
1	Fase U	Grey
2	Fase V	Black
3	Fase W	Brown
4	PE	Yellow / Green + Schield

Lenght mm	*Code*
3000	003108010600
5000	003108010602
10000	003108010604

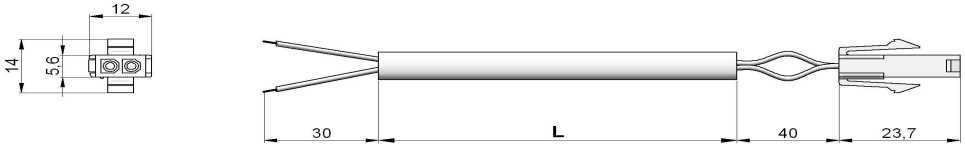
Cavo Power cable + Thermal Protection: CN 6pin - Fliyng leads



4pin Power + 2 pin PT / PTC(opz)		
Pin	*FUNCTION*	*COLOR*
1	Fase U	Grey
2	Fase V	Black
3	Fase W	Brown
4	PE	Yellow / Green + Schield
Pin	*FUNZIONI*	*COLOR*
5	PT / (PTC+)	Red
6	PT / (PTC -)	Black

Lenght mm	*Code*
3000	003108010620
5000	003108010622
10000	003108010624

Brake cable: CN 2pin - Fliyng leads



pin Brake (opz)		
Pin	*FUNCTION*	*COLOR*
1	+24 Vdc	Brown
2	0	Blue

Lenght mm	*Code*
3000	003108010130
5000	003108010132
10000	003108010134

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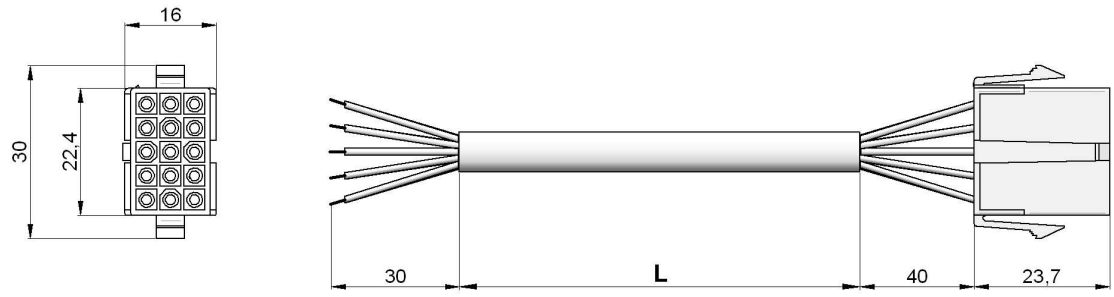
TETRA COMPACT

SIGNAL CABLE 01

Feedback cable 15pin AMP – Flying leads



CONNECTION TYPE D0

Cn 17 pin Feedback

		Encoder	Hall Sensors	Resolver
Pin	*COLOR*	*FUNCTIONS*	*FUNCTIONS*	*FUNCTIONS*
1	GREEN	A	-	SEN +
2	YELLOW	A/	-	SEN -
3	VIOLET	B	-	COS +
4	BLACK	B/	-	COS -
5	PINK	Z	-	REF +
6	GREY	Z/	-	REF -
7	WHITE-YELLOW	HALL U	HALL U	-
8	YELLOW-BROWN	HALL U/	HALL U/	-
9	WHITE-GREEN	HALL V	HALL V	-
10	BROWN-GREEN	HALL V/	HALL V/	-
11	GREY-PINK	HALL W	HALL W	-
12	RED-BLUE	HALL W/	HALL W/	-
13	BROWN	+5V	+5V	-
14	WHITE	0V	0V	-
15	Shield wire	Shield	Shield	-

Lenght mm	*Code*
3000	003108010556
5000	003108010558
10000	003108010560

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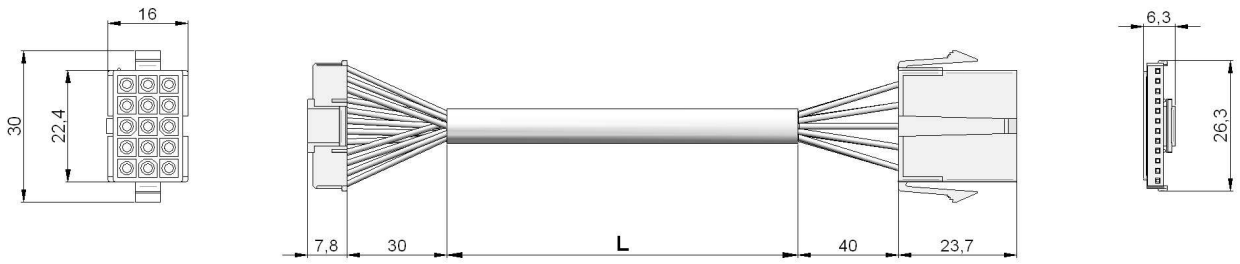
TETRA COMPACT

SIGNAL CABLE 02

Feedback cable 15pin AMP - 12pin Molex



CONNECTION TYPE D0					
Motor Side		Drive Side			
			Encoder	Hall Sensors	Resolver
Pin	*Color*	*Pin*	*FUNCTIONS*	*FUNCTIONS*	*FUNCTIONS*
1	GREEN	12	A	-	SEN +
2	YELLOW	11	A/	-	SEN -
3	VIOLET	10	B	-	COS +
4	BLACK	9	B/	-	COS -
5	PINK	8	Z	-	REF +
6	GREY	7	Z/	-	REF -
7	WHITE-YELLOW	3	HALL U	HALL U	-
8	YELLOW-BROWN	-	-	-	-
9	WHITE-GREEN	2	HALL V	HALL V	-
10	BROWN-GREEN	-	-	-	-
11	GREY-PINK	1	HALL W	HALL W	-
12	RED-BLUE	-	-	-	-
13	BROWN	6	+5V	+5V	-
14	WHITE	5	0V	0V	-
15	Shield wire	4	Shield	Shield	-

Lenght mm	*Code*
3000	003108010550
5000	003108010552
10000	003108010554

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SERIES

TETRA COMPACT

SIGNAL CABLE 03

Feedback cable 15pin AMP - 15pin D Type

CONNECTION TYPE D0					
Motor Side		**Drive Side**			
			Encoder	**Hall Sensors**	**Resolver**
Pin	*Color*	*Pin*	*FUNCTIONS*	*FUNCTIONS*	*FUNCTIONS*
1	GREEN	6	A	-	SEN +
2	YELLOW	5	A/	-	SEN -
3	VIOLET	15	B	-	COS +
4	BLACK	14	B/	-	COS -
5	PINK	8	Z	-	REF +
6	GREY	7	Z/	-	REF -
7	WHITE-YELLOW	2	HALL U	HALL U	-
8	YELLOW-BROWN	-	-	-	-
9	WHITE-GREEN	10	HALL V	HALL V	-
10	BROWN-GREEN	-	-	-	-
11	GREY-PINK	1	HALL W	HALL W	-
12	RED-BLUE	-	-	-	-
13	BROWN	4	+5V	+5V	-
14	WHITE	3	0V	0V	-
15	Shield wire	Case	Shield	Shield	-

Lenght mm	*Code*
3000	003108010530
5000	003108010532
10000	003108010534

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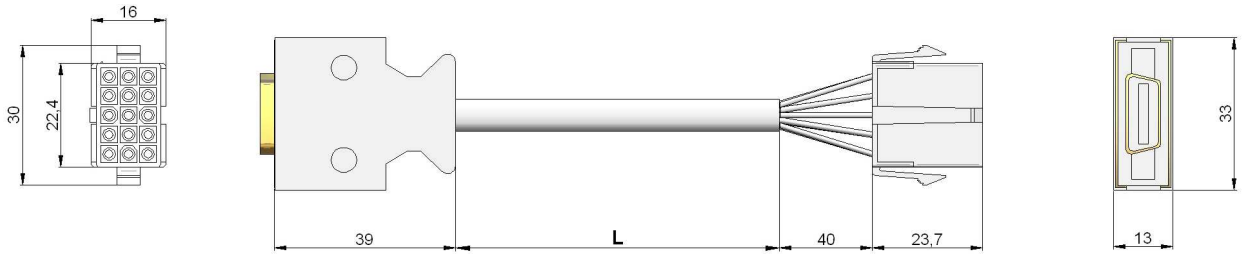
SERIES

TETRA COMPACT

SIGNAL CABLE 04

Feedback Cable 15pin AMP - 20pin 3M



CONNECTION TYPE D0					
Motor Side		**Drive Side**			
			Encoder	**Hall Sensors**	**Resolver**
Pin	*Color*	*Pin*	*FUNCTIONS*	*FUNCTIONS*	*FUNCTIONS*
1	GREEN	16	A	-	-
2	YELLOW	17	A/	-	-
3	VIOLET	18	B	-	-
4	BLACK	19	B/	-	-
5	PINK	14	Z	-	-
6	GREY	15	Z/	-	-
7	WHITE-YELLOW	7	HALL U	-	-
8	YELLOW-BROWN	-	-	-	-
9	WHITE-GREEN	9	HALL V	-	-
10	BROWN-GREEN	-	-	-	-
11	GREY-PINK	20	HALL W	-	-
12	RED-BLUE	-	-	-	-
13	BROWN	4	+5V	-	-
14	WHITE	1	0V	-	-
15	Shield wire	Case	Shield	-	-

Lenght mm	*Code*
3000	003108010510
5000	003108010512
10000	003108010514

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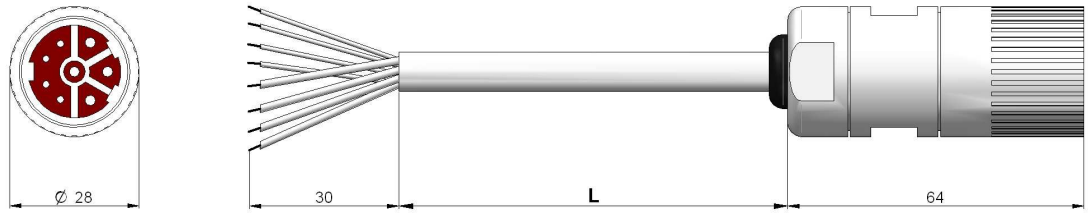
TETRA COMPACT

POWER CABLE 02

Power Cable 8pin M23 – Flying leads



CONNECTION TYPE C0 / C5		
4+4 pin Power		
Pin	*FUNCTIONS*	*COLOR*
1	Phase U	Grey
2	PE	Yellow/Green
3	Phase W	Brown
4	Phase V	Black
Brake (optional)		
Pin	*FUNCTIONS*	*COLOR*
A	+24 Vdc	Red
B	0	Black
Thermal Protection (optional)		
Pin	*FUNCTIONS*	*COLOR*
C	PT / (PTC+)	Blue
D	PT / (PTC -)	White

Lenght mm	*Code*
3000	003108010650
5000	003108010652
10000	003108010654

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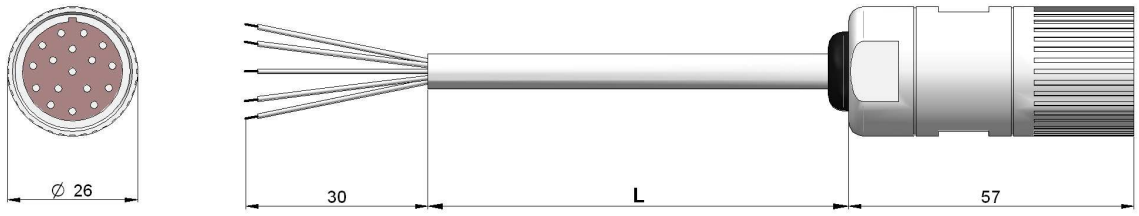
TETRA COMPACT

SIGNAL CABLE 05

Feedback cable 17pin M23 – Flying Leads



CONNECTION TYPE C0 / C5					
Cn 17 pin Feedback					
		Encoder	Hall Sensor	Resolver	Encoder Endat2.1/01
Pin	*Color*	*FUNCTIONS*	*FUNCTIONS*	*FUNCTIONS*	*FUNCTIONS*
1	GREY-PINK	HALL W	HALL W	-	-
2	WHITE-YELLOW	HALL U	HALL U	-	-
3	WHITE	0V	0V	-	0V
4	BROWN	+5V	+5V	-	+5V
5	YELLOW	A/	-	SEN -	SEN -
6	GREEN	A	-	SEN +	SEN +
7	GREY	Z/	-	REF -	DATA -
8	PINK	Z	-	REF +	DATA +
9	WHITE-GREEN	HALL V	HALL V	-	-
10	Shied wire	Shield	Shield	-	Shield
11	BLACK	B/	-	COS -	COS -
12	VIOLET	B	-	COS +	COS +
13	RED-BLUE	HALL W/	HALL W/	-	CLOCK -
14	BROWN-GREEN	HALL V/	HALL V/	-	CLOCK +
15	YELLOW-BROWN	HALL U/	HALL U/	-	-
16	RED	-	-	-	-
17	BLUE	-	-	-	-

Length mm	*Code*
3000	003108010500
5000	003108010502
10000	003108010504

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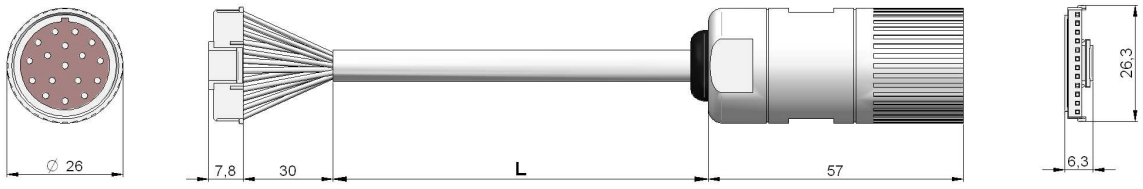
TETRA COMPACT

SIGNAL CABLE 06

Feedback cable 17pin M23 - 12pin Molex



CONNECTION TYPE C0 / C5					
Motor Side		**Drive Side**			
			Encoder	**Hall Sensor**	**Resolver**
Pin	*Color*	*Pin*	*FUNCTIONS*	*FUNCTIONS*	*FUNCTIONS*
1	GREY-PINK	1	HALL W	HALL W	-
2	WHITE-YELLOW	3	HALL U	HALL U	-
3	WHITE	5	0V	0V	-
4	BROWN	6	+5V	+5V	-
5	YELLOW	11	A/	-	SEN -
6	GREEN	12	A	-	SEN +
7	GREY	7	Z/	-	REF -
8	PINK	8	Z	-	REF +
9	WHITE-GREEN	2	HALL V	HALL V	-
10	Shield wire	4	Shield	Shield	-
11	BLACK	9	B/		COS -
12	VIOLET	10	B		COS +
13	RED-BLUE	-	-	-	-
14	BROWN-GREEN	-	-	-	-
15	YELLOW-BROWN	-	-	-	-
16	-	-	-	-	-
17	-	-	-	-	-

Lenght mm	*Code*
3000	003108010520
5000	003108010522
10000	003108010524

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TETRA COMPACT

SIGNAL CABLE 07

Feedback Cable 17pin M23 -15pin D Type

CONNECTION TYPE C0 / C5						
Motor Side		Drive Side				
			Encoder	Hall Sensors	Resolver	Encoder Endat2.1/01
Pin	*Color*	*Pin*	*FUNCTIONS*	*FUNCTIONS*	*FUNCTIONS*	*FUNCTIONS*
1	GREY-PINK	1	HALL W	HALL W	-	-
2	WHITE-YELLOW	2	HALL U	HALL U	-	-
3	WHITE	3	0V	0V	-	0V
4	BROWN	4	+5V	+5V	-	+5V
5	YELLOW	5	A/	-	SEN -	SEN -
6	GREEN	6	A	-	SEN +	SEN +
7	GREY	7	Z/	-	REF -	DATA -
8	PINK	8	Z	-	REF +	DATA +
9	WHITE-GREEN	10	HALL V	HALL V	-	-
10	Shield wire	Case	Shield	Shield	-	Shield
11	BLACK	14	B/	-	COS -	COS -
12	VIOLET	15	B	-	COS +	COS +
13	RED-BLUE	11	-	-	-	CLOCK -
14	BROWN-GREEN	13	-	-	-	CLOCK +
15	YELLOW-BROWN	-	-	-	-	-
16	RED	-	-	-	-	-
17	BLUE	-	-	-	-	-

Lenght mm	*Code*
3000	003108010580
5000	003108010582
10000	003108010584

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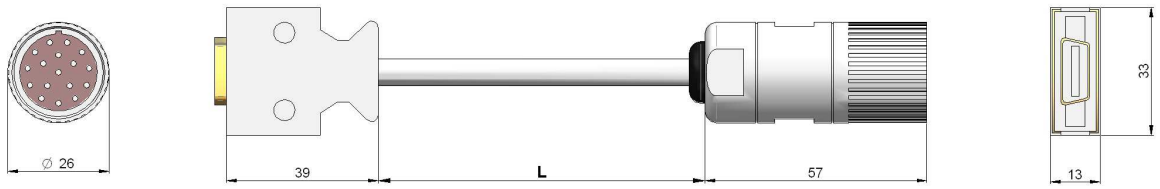
SERIES

TETRA COMPACT

SIGNAL CABLE 08

Feedback Cable 17pin M23 - 20pin 3M



CONNECTION TYPE C0 / C5					
Motor Side		Drive Side			
			Encoder	Hall Sensors	Resolver
Pin	*Color*	*Pin*	*FUNCTIONS*	*FUNCTIONS*	*FUNCTIONS*
1	GREY-PINK	20	HALL W	-	-
2	WHITE-YELLOW	7	HALL U	-	-
3	WHITE	1	0V	-	-
4	BROWN	4	+5V	-	-
5	YELLOW	17	A/	-	-
6	GREEN	16	A	-	-
7	GREY	15	Z/	-	-
8	PINK	14	Z	-	-
9	WHITE-GREEN	9	HALL V	-	-
10	Shield wire	Case	Shield	-	-
11	BLACK	19	B/	-	-
12	VIOLET	18	B	-	-
13	-	-	-	-	-
14	-	-	-	-	-
15	-	-	-	-	-
16	-	-	-	-	-
17	-	-	-	-	-

Lenght mm	*Code*
3000	003108010562
5000	003108010564
10000	003108010566

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TETRA COMPACT

SIGNAL CABLE 09

Feedback Cable 17pin M23 -15pin D Type

CONNECTION TYPE C0 / C5					
Motor Side		**Drive Side**			
			Encoder HIPERFACE		
Pin	*Color*	*Pin*	*FUNCTIONS*		
1	-	1	-		
2	-	2	-		
3	BLUE	3	0V		
4	RED	12	8V		
5	YELLOW	6	SIN A/		
6	GREEN	5	SIN A		
7	BROWN	7	DATA -		
8	WHITE	8	DATA +		
9	-	9	-		
10	Shield wire	Case	Shiel		
11	PINK	14	COS B/		
12	GREY	15	COS B		
13	-	-	-		
14	-	-	-		
15	-	-	-		
16	-	-	-		
17	-	-	-		

Lenght mm	*Code*
3000	003108011054
5000	003108011056
10000	003108011058

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