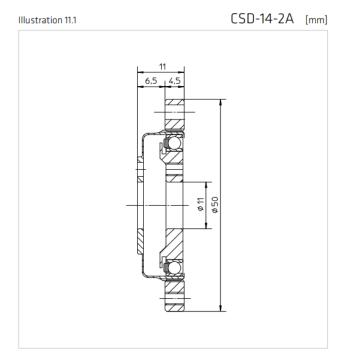
# Шарниры:

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## Двигатель:

Электродвигатель	JCM38×06S	JCM38×12S
Номинальная мощность, Вт	56	58
Номинальный момент, Нм	0,07	0,14
Пиковый момент, Нм	0,21	0,42
Номинальная скорость, об/мин	8000	4000
Номинальный ток фазы, А <sub>мелл</sub>	3,2	3,2
Постоянная момента, Нм/А <sub>ампл</sub>	0,022	0,043
Постоянная мотора, Нм/√Вт	0,03	0,05
Напряжение питания, В <sub>ампл</sub>	24	24
Сопротивление (фаза-фаза), Ом	0,6	0,86
Индуктивность (фаза- фаза), мГн	0,24	0,5
Максимальный КПД, %	90	88
Число пар полюсов	7	7
Момент инерции ротора, кг-см² *	0,01	0,02
Масса (статор + ротор), г *	64 (54+10)	94 (74+20)
Внешний диаметр статора D, мм	38	38
Внутренний диаметр ротора d, мм	18	18
Диаметр лобовых частей G, мм	36,2	36,2
Длина ротора I, мм *	8	16
Длина штырьковых лепестков h, мм	5	5
Длина статора L (max), мм	16,5	22,5



	Unit		CSD-14-2A		4-24
Ratio	i[]		50		100
Repeatable peak torque	T <sub>R</sub> [Nm]		12		19
Average torque	T <sub>A</sub> [Nm]		4.8		7.7
Rated torque	T <sub>N</sub> [Nm]		3.7		5.4
Momentary peak torque	T <sub>M</sub> [Nm]		24		31
Maximum input speed (oil lubrication)	n <sub>in (max)</sub> [rpm]			140	100
Maximum input speed (grease lubrication)	n <sub>in (max)</sub> [rpm]			85	00
Average input speed (oil lubrication)	n <sub>av (max)</sub> [rpm]			65	00
Average input speed (grease lubrication)	n <sub>av (max)</sub> [rpm]	3500		00	
Moment of inertia	J <sub>in</sub> [x10 <sup>-4</sup> kgm <sup>2</sup> ]	0.021		)21	
Weight	m [kg]			0.1	06

	INC-4-75
Dim. A: Stator / Rotor Body O.D.	75.00
Dim. C : Rotor I.D.	35.00
Dim. D : Stator I.D.	35.80
N Number of Set Screws	3
Max. radial misalignment	
Rotor & Stator fixings	
Kotor & Stator fixings	

- NOTES

  1. 3D CAD MODEL FILES AVAILABLE ON WWW.CELERAMOTION.COM

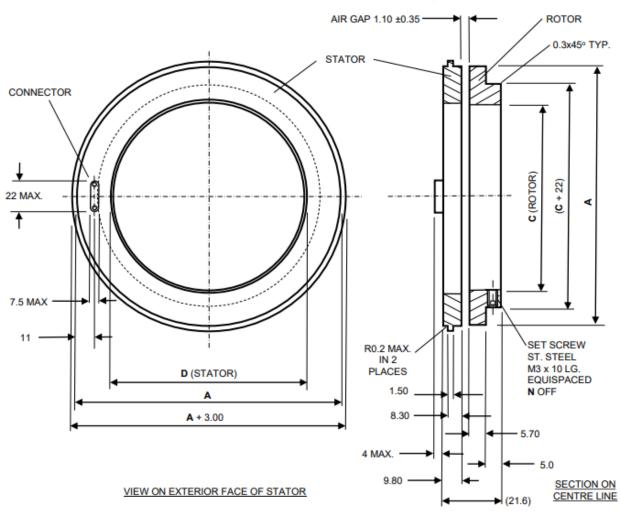
  2. UNIT SHOWN WITH AXIAL CONNECTOR AC1

  3. SEE SECTION 9.3. FOR CORRESPONDING SERVO CLAMPS

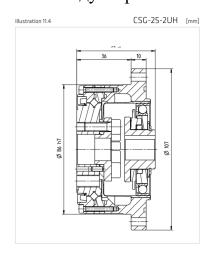
  4.1 DIAG IAI mm DO NOT SCALE

- 4. 5. ALL DIMS IN mm - DO NOT SCALE 3RD ANGLE PROJECTION
- TOLERANCES:- 0 DECIMAL PLACES = ±0.5
  - 1 DECIMAL PLACES = ±0.2
  - 2 DECIMAL PLACES = ±0.1





Электродвигатель	JCM50×14S	JCM69×10S	JCM69×18S	JCM69×35D	JCM85×26D	CM100x30D
Номинальная мощность, Вт	100	180	214	391	405	690
Номинальный момент, Нм	0,32	0,57	1,15	2,2	2,58	4,4
Пиковый момент, Нм	0,96	1,71	3,45	6,6	7,75	13,2
Номинальная скорость, об/мин	3000	3000	1700	1700	1500	1500
Номинальный ток фазы, А	2,8	5,1	5,7	11,0	12,2	20,4
Постоянная момента, Нм/А <sub>виги</sub>	0,11	0,11	0,2	0,2	0,212	0,215
Постоянная мотора, Нм/√Вт	0,1	0,15	0,22	0,35	0,44	0,62
Напряжение питания, В <sub>ампл</sub>	48	48	48	48	48	48
Сопротивление (фаза-фаза), Ом	1,75	0,8	1,1	0,42	0,32	0,16
Индуктивность (фаза- фаза), мГн	0,8	0,65	1,2	0,61	0,55	0,35
Максимальный КПД, %	89	90	89	89	91	92
Число пар полюсов	10	10	10	10	10	10
Момент инерции ротора, кг•см² *	0,082	0,2	0,35	0,62	1,26	2,7
Масса (статор + ротор), г *	125 (95+30)	180 (140+40)	285 (220+65)	507 (390+117)	650 (490+160)	1105 (850+255)
Внешний диаметр статора D, мм	50	69	69	69	85	100
Внутренний диаметр ротора d, мм	30	42	42	42	52	59
Диаметр лобовых частей G, мм	48	66	66	66	81,5	95,5
Длина ротора I, мм *	16	12	20	37	28	32
Длина штырьковых лепестков h, мм	5	5	5	5	5	5
Длина статора L (max), мм	24,7	25	33	50	41,5	48,5



	Unit	CSG-20-2UH				C	SG-25-2	UH			
Ratio	i[]	50	80	100	120	160	50	80	100	120	160
Repeatable peak toque	T <sub>R</sub> [Nm]	73	96	107	113	120	127	178	204	217	229
Average torque	T <sub>A</sub> [Nm]	44	61	64	64	64	72	113	140	140	140
Rated torque	T <sub>N</sub> [Nm]	33	44	52	52	52	51	82	87	87	87
Momentary peak torque	T <sub>M</sub> [Nm]	127	165	191	191	191	242	332	369	395	408
Maximum input speed (oil lubrication)	n <sub>in (max)</sub> [rpm]			10000			7500				
Maximum input speed (grease lubrication)	n <sub>in (max)</sub> [rpm]	6500			n <sub>in (max)</sub> [rpm] 6500 5600						
Average input speed (oil lubrication)	n <sub>av (max)</sub> [rpm]	6500			5600						
Average input speed (grease lubrication)	n <sub>av (max)</sub> [rpm] 3500 3500			3500							
Moment of inertia	J <sub>in</sub> [x10 <sup>-4</sup> kgm²]	0.193			J <sub>in</sub> [x10 <sup>-4</sup> kgm <sup>2</sup> ] 0.193 0.413						
Weight	m [kg]			0.98			1.5				

#### Measurement & Elec. Data for Digital Comms Interfaces - Product Options SSI1-9, SPI, ASI1, ASI2 & BiSS-C

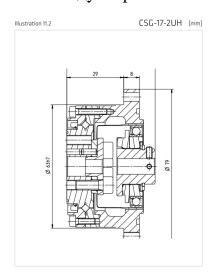
	NC-x-58					
Measurement	Absolute over 360°. Note this is true absolute - no motion required at start up					
Resolution (121001 Product Option)	12bits 4,096counts per rev 316.4arc-secs 1536micro-rads					
Resolution (141001 Product Option)	14bits 16,384counts per rev 79.1arc-secs 384micro-rads					
Resolution (161001 Product Option)	16bits 65,536counts per rev 19.77arc-secs 96micro-rads					
Resolution (171001 Product Option)	17bits 131,072counts per rev 9.89arc-secs 48micro-rads					
Resolution (181001 Product Option)	18bits 262,144counts per rev 4.94arc-secs 24micro-rads					
Resolution (191001 Product Option)	19bits 524,288counts per rev 2.47arc-secs 12micro-rads					
Resolution (201001 Product Option)	20bits 1,048,576counts per rev 1.24arc-secs 6micro-rads					
Repeatability	+/-1					
Static Accuracy over 360°	≤75arc-seconds or 0.36milliradians					
Internal Position Update Period	<0.1					
Thermal Drift Coefficient	≤0.50					
Max. Speed for Angle Measurement	10,000					
Data Outputs	RS422 Compatible, supports SSI (Serial Synchronous Interface), ASI (asynchronous serial interface), SPI or BiSS-C					
Power Supply	5VDC(4.5-32VDC) or 12VDC (4.5-32VDC) or 24VDC (4.5-32VDC)	VDC				
Current Consumption	<100 (typically <75 and does not change significantly with voltage supply)					
Reverse Polarity	PSU Reverse polarity protected to max. supply voltage					
Connector (ACx & RCx Product Options)	Harwin Data Mate Vertical Plug 10 Way with 2 Jack Screws Type M80-500-10-42 or M80-510-10-42 or M80-540-10-42					
Mating Connector (ACx & RFCx)	Harwin Data Mate Vertical Socket Type M80-461-10-42 (alternative M80-461-10-05)	<u></u> _				
Zero Setting	Via Connector Pin or Integral Cable - see details for set and reset in relevant Section for Connector, Cable or Comms Interface					
Power Up Time To 1st Measurement	<500	millisecond				

#### Measurement & Electrical Data for A/B/Z Pulses Comms Interfaces - Product Option ABZ1-6

	NC-x-58	
Measurement	Incremental with reference mark. Position of reference mark programmable by user.	
Resolution	As above (limited to 17-bits) - resolution defined as one edge of A/B pulse train	
Repeatability	+/-1	count
Static Accuracy over 360°	≤75arc-seconds or 0.36milliradians	
Internal Position Update Period	<0.1	millisecond
Thermal Drift Coefficient	⊴1	ppm/K Full-Scale
Max. Speed for Angle Measurement	10 to 16bits = 7200r.p.m. 17bits = 3600r.p.m.	
Data Outputs	A/B pulses with Z pulse ref. Z position settable from connector/cable. Z pulse width selectable by Product Option/ Part Number.	
Power Supply	5VDC±10% or 12VDC (8-32VDC) or 24VDC (8-32VDC)	VDC
Current Consumption	<150 (does not vary significantly with supply voltage)	milliAmp
Reverse Polarity	PSU Reverse polarity protected to max. supply voltage	VDC
Connector (ACx & RFCx Product Options)	As above - resolution defined as one edge of A/B pulse train	
Mating Connector (ACx & RFCx)	Harwin Data Mate Vertical Socket Type M80-461-10-42 (alternative M80-461-10-05)	]
Z Position Setting	Via Connector Pin or Integral Cable - see details for set and reset in relevant Section for Connector, Cable or Comms Interface	
Power Up Time To 1st Measurement	<500	millisecond

Электродвигатель	JCM50×14S	JCM69×10
Номинальная мощность, Вт	100	180
Номинальный момент, Нм	0,32	0,57
Пиковый момент, Нм	0,96	1,71
Номинальная скорость, об/мин	3000	3000
Номинальный ток фазы, А	2,8	5,1
Постоянная момента, Нм/А	0,11	0,11
Постоянная мотора, Нм/√Вт	0,1	0,15
Напряжение питания, В <sub>мето</sub>	48	48
Сопротивление (фаза-фаза), Ом	1,75	0,8
Индуктивность (фаза- фаза), мГн	0,8	0,65
Максимальный КПД, %	89	90
Число пар полюсов	10	10
Момент инерции ротора, кг-см² *	0,082	0,2
Масса (статор + ротор), г *	125 (95+30)	180 (140+40)
Внешний диаметр статора D, мм	50	69
Внутренний диаметр ротора d, мм	30	42
Диаметр лобовых частей G, мм	48	66
Длина ротора I, мм *	16	12
Длина штырьковых лепестков h, мм	5	5
Длина статора L (max), мм	24,7	25

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	Unit	CSG-14-2UH				CSG-17	7-2UH	
Ratio	i[]	50	80	100	50	80	100	120
Repeatable peak toque	T <sub>R</sub> [Nm]	23	30	36	44	56	70	70
Average torque	T <sub>A</sub> [Nm]	9.0	9.0 14 14		34	35	51	51
Rated torque	T <sub>N</sub> [Nm]	7.0	10	10	21	29	31	31
Momentary peak torque	T <sub>M</sub> [Nm]	46	61	70	91	113	143	112
Maximum input speed (oil lubrication)	n <sub>in (max)</sub> [rpm]		14000		10000			
Maximum input speed (grease lubrication)	n <sub>in (max)</sub> [rpm]	8500			n <sub>in (max)</sub> [rpm] 8500 7300			
Average input speed (oil lubrication)	n <sub>av (max)</sub> [rpm] 6500 6500			6500				
Average input speed (grease lubrication)	n <sub>av (max)</sub> [rpm] 3500 3500			3500			00	
Moment of inertia	J <sub>in</sub> [x10 <sup>-4</sup> kgm <sup>2</sup> ] 0.033 0.079			0.033				
Weight	m [kg]		0.52			0.6	8	

#### Measurement & Elec. Data for Digital Comms Interfaces - Product Options SSI1-9, SPI, ASI1, ASI2 & BiSS-C

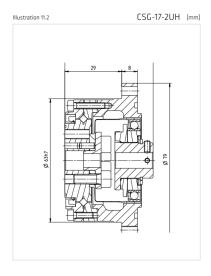
	NC-x-58					
Measurement	Absolute over 360°. Note this is true absolute - no motion required at start up					
Resolution (121001 Product Option)	12bits 4,096counts per rev 316.4arc-secs 1536micro-rads					
Resolution (141001 Product Option)	14bits 16,384counts per rev 79.1arc-secs 384micro-rads					
Resolution (161001 Product Option)	16bits 65,536counts per rev 19.77arc-secs 96micro-rads					
Resolution (171001 Product Option)	17bits 131,072counts per rev 9.89arc-secs 48micro-rads					
Resolution (181001 Product Option)	18bits 262,144counts per rev 4.94arc-secs 24micro-rads					
Resolution (191001 Product Option)	19bits 524,288counts per rev 2.47arc-secs 12micro-rads					
Resolution (201001 Product Option)	20bits 1,048,576counts per rev 1.24arc-secs 6micro-rads					
Repeatability	+/-1					
Static Accuracy over 360°	≤75arc-seconds or 0.36milliradians					
Internal Position Update Period	<0.1					
Thermal Drift Coefficient	≤0.50					
Max. Speed for Angle Measurement	10,000	r.p.m.				
Data Outputs	RS422 Compatible, supports SSI (Serial Synchronous Interface), ASI (asynchronous serial interface), SPI or BiSS-C					
Power Supply	5VDC(4.5-32VDC) or 12VDC (4.5-32VDC) or 24VDC (4.5-32VDC)	VDC				
Current Consumption	<100 (typically <75 and does not change significantly with voltage supply)	miliAmp				
Reverse Polarity	PSU Reverse polarity protected to max. supply voltage	VDC				
Connector (ACx & RCx Product Options)	Harwin Data Mate Vertical Plug 10 Way with 2 Jack Screws Type M80-500-10-42 or M80-510-10-42 or M80-540-10-42					
Mating Connector (ACx & RFCx)	Harwin Data Mate Vertical Socket Type M80-461-10-42 (alternative M80-461-10-05)					
Zero Setting	Via Connector Pin or Integral Cable - see details for set and reset in relevant Section for Connector, Cable or Comms Interface					
Power Up Time To 1st Measurement	<500	millisecond				

#### Measurement & Electrical Data for A/B/Z Pulses Comms Interfaces - Product Option ABZ1-6

NC-x-58	
Incremental with reference mark. Position of reference mark programmable by user.	
n As above (limited to 17-bits) - resolution defined as one edge of A/B pulse train	
+/-1	count
≤75arc-seconds or 0.36millradians	
<0.1	milisecond
⊴1	ppm/K Full-Scale
10 to 16bits = 7200r.p.m. 17bits = 3600r.p.m.	
$A/B \ pulses \ with \ Z \ pulse \ ref. \ Z \ position \ settable \ from \ connector/cable. \ Z \ pulse \ width \ selectable \ by \ Product \ Option/ \ Part \ Number.$	
5VDC±10% or 12VDC (8-32VDC) or 24VDC (8-32VDC)	VDC
<150 (does not vary significantly with supply voltage)	miliAmp
PSU Reverse polarity protected to max. supply voltage	VDC
As above - resolution defined as one edge of A/B pulse train	
Harwin Data Mate Vertical Socket Type M80-461-10-42 (alternative M80-461-10-05)	]
Via Connector Pin or Integral Cable - see details for set and reset in relevant Section for Connector, Cable or Comms Interface	
<500	milisecond
	Incremental with reference mark. Position of reference mark programmable by user.  As above (limited to 17-bits) - resolution defined as one edge of A/B pulse train  +/-1  ≤75arc-seconds or 0.36milliradians  <0.1  ≤1  10 to 16bits = 7200r.p.m. 17bits = 3600r.p.m.  A/B pulses with Z pulse ref. Z position settable from connector/cable. Z pulse width selectable by Product Option/ Part Number.  5VDC±10% or 12VDC (8-32VDC) or 24VDC (8-32VDC)  <150 (does not vary significantly with supply voltage)  PSU Reverse polarity protected to max. supply voltage  As above - resolution defined as one edge of A/B pulse train  Harwin Data Mate Vertical Socket Type M80-461-10-42 (alternative M80-461-10-05)  Via Connector Pin or Integral Cable - see details for set and reset in relevant Section for Connector, Cable or Comms Interface

Электродвигатель	JCM50×14S	JCM69×10S
Номинальная мощность, Вт	100	180
Номинальный момент, Нм	0,32	0,57
Пиковый момент, Нм	0,96	1,71
Номинальная скорость, об/мин	3000	3000
Номинальный ток фазы, А	2,8	5,1
Постоянная момента, Нм/А	0,11	0,11
Постоянная мотора, Нм/√Вт	0,1	0,15
Напряжение питания, В <sub>ампл</sub>	48	48
Сопротивление (фаза-фаза), Ом	1,75	0,8
Индуктивность (фаза- фаза), мГн	0,8	0,65
Максимальный КПД, %	89	90
Число пар полюсов	10	10
Момент инерции ротора, кг-см² *	0,082	0,2
Масса (статор + ротор), г *	125 (95+30)	180 (140+40)
Внешний диаметр статора D, мм	50	69
Внутренний диаметр ротора d, мм	30	42
Диаметр лобовых частей G, мм	48	66
Длина ротора I, мм *	16	12
Длина штырьковых лепестков h, мм	5	5
Длина статора L (max), мм	24,7	25

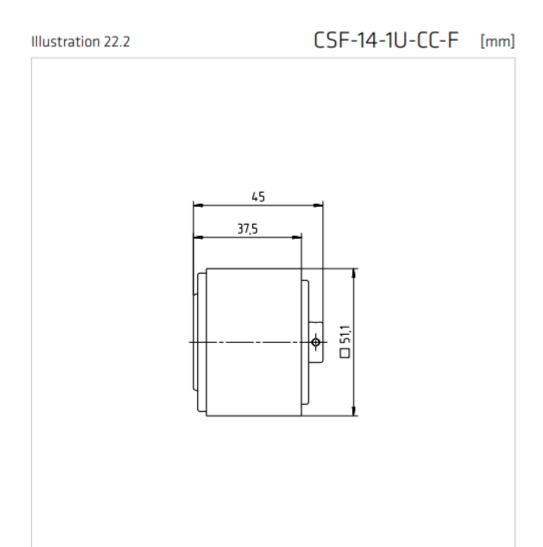
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	Unit	CSG-14-2UH				CSG-1	CSG-17-2UH		
Ratio	i[]	50	80	100	50	80	100	120	
Repeatable peak toque	T <sub>R</sub> [Nm]	23	30	36	44	56	70	70	
Average torque	T <sub>A</sub> [Nm]	9.0	14	14	34	35	51	51	
Rated torque	T <sub>N</sub> [Nm]	7.0	10	10	21	29	31	31	
Momentary peak torque	T <sub>M</sub> [Nm]	46	61	70	91	113	143	112	
Maximum input speed (oil lubrication)	n <sub>in (max)</sub> [rpm]	14000 10000			000				
Maximum input speed (grease lubrication)	n <sub>in (max)</sub> [rpm]	8500 7300			00				
Average input speed (oil lubrication)	n <sub>av (max)</sub> [rpm]		6500			65	00		
Average input speed (grease lubrication)	n <sub>av (max)</sub> [rpm]	3500 350			00				
Moment of inertia	J <sub>in</sub> [x10 <sup>-4</sup> kgm²]	0.033 0.079							
Weight	m [kg]		0.52			0.	68		

			INC-x-58			
			Operating Temp.	Minus 45 to +85	Celsius	
				Minus 60 to +85Celsius for 12VCT & 24VCT Product Option. Minus 45 to +105Celsius max. for 5HT Product Option		
				Operation outside limits to be qualified by user.		
			Storage Temp.	Minus 55 to +125 (Minus 60 to +125 for 24CT Product Option)	Celsius	
			Temperature Shock	MIL-STD-810G, Method 503.5, Procedure I-B (T1=-40 °C, T2=55 °C.)		
			IP Rating - Rotor & Stator	IP67 for <60 minutes & 1m depth (Installed with mechanically protected connector or AFL1-5 or VFL1-5 Product Options)		
				For additional protection for long term immersion at depth, specify product option AFL2-52 or VFL2-52 Product Option		
Measurement & Elec. Data	for Digital Comms Interfaces - Product Options SSI1-9, SPI, ASI1, ASI2 & Bis	SS-C		For immersion at depths of >100m select Extended Range High Pressure Option		
	NC-x-58		IP Rating - Connector	IP50 (ACx or RCx Product Option). See Section 4.7 for IP rating of AFLx & VFLx Product Option		
Measurement	Absolute over 360°. Note this is true absolute - no motion required at start up		Humidity	RH 0-99% standard. Select Extended Range Option C & appropriate connector for condensing humidity or long term immersion	n	
Resolution (121001 Product Option)	12bits 4,096counts per rev 316.4arc-secs 1536micro-rads		2.15	(Installed with protected cable/connector or any integral axial cable) Compiles with DEF STAN 00-35 Pt. 3 iss. 4, Test CN2 Salt.	t	
Resolution (141001 Product Option)	14bits 16,384counts per rev 79.1arc-secs 384micro-rads		Salt Fog	Mist Test. Select Extended Range Option C and appropriate connector for environments with significant exposure to salt fog		
Resolution (161001 Product Option)	16bits 65,536counts per rev 19.77arc-secs 96micro-rads			(Installed with protected cable/connector or any integral axial cable) Compiles with DEF-STAN 00-35 Pt. 4 lss. 4 Section 11		
Resolution (171001 Product Option)	17bits 131,072counts per rev 9.89arc-secs 48micro-rads		Bio Hazards	(Hazards)		
Resolution (181001 Product Option)	18bits 262,144counts per rev 4.94arc-secs 24micro-rads		Industrial Desire & Committee	Complies with DEF STAN 00-35 Pt 3 Iss 4, Test CL25 (Turbulent Dust) Cat 1. Select Extended Range Option C and		
Resolution (191001 Product Option)	19bits 524,288counts per rev 2.47arc-secs 12micro-rads		Induced Dust & Sand	appropriate connector for environments with abrasive dust or sand.		
Resolution (201001 Product Option)	20bits 1,048,576counts per rev 1.24arc-secs 6micro-rads		Mechanical Impact Resistance	IK07 - when installed - suitable for mechanical impacts from objects of >200grams from 1m height		
Repeatability	+/-1	count	Shock	IEC 60068-2-27 100g for 11ms - axial & radial - suitable for most airborne, marine & armoured vehicles		
Static Accuracy over 360°	≤75arc-seconds or 0.36milliradians			MIL-STD-810G, Method 516.6, Procedure I-Functional Shock - axial and radial - 40 g 11 ms, sawboth waveform		
Internal Position Update Period	<0.1	milisecond		For more extreme or prolonged conditions specify Extended Product Option G & preferably Integral Axial Cable		
Thermal Drift Coefficient	≤0.50	ppm/K Full-Scale	Vibration	IEC 60068-2-6 20g for 10-2000Hz - axial and radial - suitable for most high vibration & airborne environments		
Max. Speed for Angle Measurement	10,000	r.p.m.		MIL-STD-810G, Method 514.6, Procedure I - axial and radial - Category 20, for tracked vehicles		
Data Outputs	RS422 Compatible, supports SSI (Serial Synchronous Interface), ASI (asynchronous serial interface), SPI or BiSS-C			For more extreme or prolonged conditions specify Extended Product Option G and preferably Integral Axial Cable		
Power Supply	5VDC(4.5-32VDC) or 12VDC (4.5-32VDC) or 24VDC (4.5-32VDC)	VDC	Environmental pressure range	0 to 7 (i.e. vacuum to 7). See Extended Product Range High Pressure Option for higher operating pressures	Rar	
Current Consumption	<100 (typically <75 and does not change significantly with voltage supply)	miliAmp	Max. permissible press, change rate	1	Barisecor	
Reverse Polarity	PSU Reverse polarity protected to max. supply voltage	VDC	EMC Radiated Susceptibility	(Installed) Complies with IEC 61000-6-2 - suitable for fitment in harsh EMC environments	Danistoo	
Connector (ACx & RCx Product Options)	Harwin Data Mate Vertical Plug 10 Way with 2 Jack Screws Type M80-500-10-42 or M80-510-10-42 or M80-540-10-42		EMC Radiated Emissions	(Installed) Compiles with IEC 61000-6-4 - suitable for filment adjacent to EMI sensitive devices	+	
Mating Connector (ACx & RFCx)	Harwin Data Mate Vertical Socket Type M80-461-10-42 (alternative M80-461-10-05)		Materials - all Product Options	(masked) Compres man ICC o 1000-0-4 - autable for namen adjustent to Com demande demand	_	
Zero Setting	Via Connector Pin or Integral Cable - see details for set and reset in relevant Section for Connector, Cable or Comms Interface		Rotor & Stator Housings	Standard range:- Al. alloy (6061-T6 or 6084-T6) with SurTec650. Sensor surfaces: FR4 grade egoxy	_	
Power Up Time To 1st Measurement	<500	milisecond	Kotol & Statol Housings	Product Option A or S Alocrom finish al. allov (6061-T6 or 6084-T6). Sensor surfaces: FR4 grade epoxy		
Measurement & Flectrical I	Data for A/B/Z Pulses Comms Interfaces - Product Option ABZ1-6		Connector (ACx or RCx Product Option)	PPS with Stainless Steel Screw Fixings and Gold & Tin Electrical Connections	+	
Heasarement & Electricar			Miscellaneous - all Product Option		_	
	NC-x-58		wiscenaneous - an Product Option	15		
			Mana Chaft Clama Datas (may )	43	laram.	
Measurement	Incremental with reference mark. Position of reference mark programmable by user.		Mass Shaft Clamp Rotor (max.)	43	grams	
Resolution	As above (limited to 17-bits) - resolution defined as one edge of A/B pulse train		Mass Plain Rotor (max.)	32	grams	
Resolution Repeatability	As above (limited to 17-bits) - resolution defined as one edge of AIB pulse train +/-1	count	Mass Plain Rotor (max.) Mass Servo Clamp Stator (AC1 )	32 43	grams grams	
Resolution Repeatability Static Accuracy over 360°	As above (limited to 17-bits) - assolution defined as one edge of AB pulse train +/-1 +/-1 +/-1 -75 arc-accords or 0.36 millinadians		Mass Plain Rotor (max.)  Mass Servo Clamp Stator (AC1 )  Iom. of Inertia Shaft Clamp Rotor (max.)	32 43 2.0E-05	grams grams Kgm²	
Resolution Repeatability Static Accuracy over 360 <sup>°</sup> Internal Position Update Period	As above (finited to 17-bits) - resolution defined as one edge of AIB guite train +-1-1 +15	milisecond	Mass Plain Rotor (max.)  Mass Servo Clamp Stator (AC1 )  Iom. of Inertia Shaft Clamp Rotor (max.)  Mom. of Inertia Plain Rotor (max.)	32 43 2.06-05 1.86-05	grams grams	
Resolution Repeatability Static Accuracy over 189 <sup>o</sup> Internal Position Update Period Thermal Drift Coefficient	As above (instead to 17-bits) - resolution of edited as one edge of ASI pulse train  ### ASI		Mass Plain Rotor (max.) Mass Servo Clamp Stator (AC1 ) Iom. of Inertia Shaft Clamp Rotor (max.) Mom. of Inertia Plain Rotor (max.) MTBF	32 43 2.06-65 1.18-65 0.22 bilares per 1M hours based on ML-188-277- restrict for ground military vehicles at 200-class a venage	grams grams Kgm²	
Resolution Repeatability Static Accuracy over 189 <sup>o</sup> Internal Position Update Period Thermal Drift Coefficient Max. Speed for Angle Measurement	As above (finited to 17-bits) - resolution defined as one edge of ASI pulse train +1-1  475ar-seconds of 0.Senifizedams -0.1  10 to 19bbs = 7200 p.m. 17bbs = 3600 p.m.	milisecond	Mass Plain Rotor (max.) Mass Sevo Clamp Stator (AC1) Iom. of Inertia Shaft Clamp Rotor (max.) Mom. of Inertia Plain Rotor (max.) MTBF	32 43 20: 65 21: 65 22 blures par 1M hours based on ML-HBK-217- nethod by ground military vehicles at 20C delau a verage 0.35 blures par 1M hours based on ML-HBK-217- nethod by manuf shelened at 30C delau a verage	grams grams Kgm²	
Resolution Repeatability Static Accuracy over 360° Internal Position Update Period Thermal Drift Coefficient Max. Speed for Angle Measurement Data Outputs	As above (instead to 17 84s) - resolution defined as one edge of AS pulse train 4.4  4.71  4.71  4.71  4.71  5.71  5.71  5.72  5.72  5.73  10 to 168s + 7200 p.m. 178s + 3000 p.m.	milisecond ppm/K Full-Scale	Mass Plain Rotor (max.) Mass Servo Clamp Stator (AC1) Iom. of Inertia Shaft Clamp Rotor (max.) Mom. of Inertia Plain Rotor (max.) MTBF Hazardous materials	32 43 20:65 10:65 10:20 bilares per 1M hours based on ML-HBC-217+ method for ground military vehicles at 200-cibics average 0.35 febures per 1M hours based on ML-HBC-217+ method for most of whelm of at 350-cibics average Stendard range - Nazzedous materials not seek RAHS compliant. RAHS comflictes available. REACH settement available.	grams grams Kgm²	
Resolution Repeatability Static Accuracy over 360' Internal Position Update Period Thermal Drift Coefficient Max. Speed for Angis Measurement Data Outpubs Power Supply	As above (finited to 17-bit) - resolution defined as one edge of AS pulse train  47 Earn-seconds of 0 Shriftendams  4.1  51  51  10 to 19bb = 7000 p.m.  AS pulses with Z pulse of Z. Z position settler in correctionability. Z pulse with z pulse of Z. Z position settler from correctionability. Z pulse with z pulse of Z. Z position settler from correctionability. Z pulse with setcled by Product Option/ Part Number.  500CHS/10 or 2000 G-32000CD	milisecond ppm/K Full-Scale	Mass Plain Rotor (max.) Mass Servo Clamp Stator (AC1) Om. of Inertia Shaft Clamp Rotor (max.) Mom. of Inertia Plain Rotor (max.) MTBF MTBF Hazardous materials Outgassing materials	32 43 20:65 18:65 60:22 bitures per 1M hours based on ML-HBX-2TP method for ground military vehicles at 200-celoia average 0.33 bitures per 1M hours based on ML-HBX-2TP method for most shellows at 200-celoia average 0.35 bitures per 1M hours based on ML-HBX-2TP method for most shellow at 200-celoia average 0.05 bitures per 1M hours based on ML-HBX-2TP method for most shellow at 250-celoia average 0.05 bitures per 1M hours based on ML-HBX-2TP method for most shellow at 250-celoia average 0.05 bitures per 1M hours based on ML-HBX-2TP method for most shellow at 250-celoia average 0.05 bitures per 1M hours based on ML-HBX-2TP method for most shellow at 250-celoia average 0.05 bitures per 1M hours based on ML-HBX-2TP method for most shellow at 250-celoia average 0.05 bitures per 1M hours based on ML-HBX-2TP method for most shellow at 250-celoia average 0.05 bitures per 1M hours based on ML-HBX-2TP method for most shellow at 250-celoia average 0.05 bitures per 1M hours based on ML-HBX-2TP method for most shellow at 250-celoia average 0.05 bitures per 1M hours based on ML-HBX-2TP method for most shellow at 250-celoia average 0.05 bitures per 1M hours based on ML-HBX-2TP method for most shellow at 250-celoia average 0.05 bitures per 1M hours based on ML-HBX-2TP method for most shellow at 250-celoia average 0.05 bitures per 1M hours based on ML-HBX-2TP method for most shellow at 250-celoia average 0.05 bitures per 1M hours based on ML-HBX-2TP method for most shellow at 250-celoia average 0.05 bitures per 1M hours based on ML-HBX-2TP method for most shellow at 250-celoia average 0.05 bitures per 1M hours based on ML-HBX-2TP method for most shellow at 250-celoia average 0.05 bitures per 1M hours based on ML-HBX-2TP method for most shellow at 250-celoia average 0.05 bitures per 1M hours based on ML-HBX-2TP method for most shellow at 250-celoia average 0.05 bitures per 1M hours based on ML-HBX-2TP method for most shellow at 250-celoia average 0.05 bitures per 1M hours based on ML-HBX-2TP method for most shellow at 250-celoi	grams grams Kgm²	
Resolution Repeatability Static Accuracy over 300° Internal Position tydate Period Thermal Dritt Coefficient Max. Speed for Angle Measurement Data Output Power Supply Current Consumption	As above (finited to 17-bits) - resolution defined as one edge of AB pulse train  4-11  475 are-seconds of 2-8 millendams  40.1  10 to 16bits - 7200 p.m. 17bits - 3000 p.m.  AB pulses with 2 pulse set. 2 pulses restablish from comendationals. 2 pulse with electable by Product Option Part Number.  510C±10% or 120C0 (8-320CC) or 2-80C0 (8-320CC)  4-150 (bots not vary significantly with supply voltagin)	milisecond ppm/K Full-Scale  VDC miliAmp	Mass Pain Rotor (max.) Mass Servo Clamp Stator (AC1) om. of Inertia Shaft Clamp Rotor (max.) Mom. of Inertia Plain Rotor (max.) MTBF MTBF Hazardous materials Outgassing materials ITAR classification	32 43 20-65 1.8E-65 1.2E-65 1.	grams grams Kgm²	
Resolution Repeatability Stafe Accuracy over 160° Internal Position Update Period Thermal Drift Coefficient Max. Speed for Angle Measurement Data Outputs Power Supply Cument Consumption Reverse Polishir	As above (insteal to 17-bits) - resolution defined as one edge of AS pulse train  475arc- seconds or 0 35millsradams  43.1  51  10 to 150bs 7000 p.m.  AS pulses with 7 pulse of 7, position relation before 7 (2000 p.m.)  AS pulses with 7 pulse of 7, position relation before 7 (2000 p.m.)  510Cs 16% or 120CG (8-32YOC) or 26YOC (8-32YOC)  4100 (50es for very inplication) with supply voltage)  PSI Remarks and product profession for supply voltage)  PSI Remarks and product profession for supply voltages	milisecond ppm/K Full-Scale	Mass Plain Rotor (max.) Mass Servo Clamp Stator (AC1) om. of Inertis Shit Charp Rotor (max.) Mom. of Inertis Plain Rotor (max.) Mom. of Inertis Plain Rotor (max.) MTBF Hazardous materials Outgassing materials 1TAR classification Approvide	32 43 2.06-05 1.06-05 0.22 bilares per 1M hours based on ML-HBC-2TP method for ground military vehicles at 200-cleius average 0.22 bilares per 1M hours based on ML-HBC-2TP method for most shellowed at 300-cleius average 0.35 bilares per 1M hours based on ML-HBC-2TP method for most shellowed at 300-cleius average 0.35 bilares per 1M hours based on ML-HBC-2TP method for most shellowed 350-cleius average 0.35 bilares per 1M hours based on ML-HBC-2TP method for most shellowed health of 350-bilares average 0.35 bilares per 1M hours based on ML-HBC-2TP method for method for method for hours average 1M per 1M p	grams grams Kgm²	
Resolution Repeatability Static Accuracy over 30% Internal Position Update Period Internal Position Update Period Thermal Dark Coefficient Max. Speed for Angle Measurement Data Cutputs Power Supply Curnent Consumption Reverse Polarity Connector (ACs. & RFCx Product Options)	As above (finited to 17 bits) - resolution defined as one edge of ASI pulse train  4-1  4-1  4-1  4-1  4-1  4-1  4-1  4-	milisecond ppm/K Full-Scale  VDC miliAmp	Mass Pain Rotor (max.) Mass Servo Clamp Stator (AC1) om. of Inertia Shaft Clamp Rotor (max.) Mom. of Inertia Plain Rotor (max.) MTBF MTBF Hazardous materials Outgassing materials ITAR classification	32 43 20-65 1.8E-65 1.2E-65 1.	grams grams Kgm²	
Resolution Repeatability Static Accuracy over side? Internal Position Update Period Thermal Drill Coefficient Max. Speed for Angle Measurement Data Outputs Power Supply Current Consumption Reverse Positry Connector (Ac. & RFCx Product Options) Mating Connector (Ac. & RFCx Product Options) Mating Connector (Ac. & RFCx Product Options)	As above (inheat to 17-bits) - resolution defined as one edge of AS pulse train  47 face seconds or 0 35millisadams  4,0 1  10 to 1686 = 7000 p.m.  ASS pulses with 2 pulse set. 2 position settled be 17000 p.m.  ASS pulses with 2 pulse set. 2 position settled be 17000 p.m.  ASS pulses with 2 pulse set. 2 position settled view connection/calls = 7,0 be 36000 p.m.  ASS pulses with 2 pulse set. 2 position settled view connection/calls = 7,0 be 36000 p.m.  ASS pulses with 2 pulse set. 2 position settled view profitcation because of 2,0 becomes the 3,0 becomes pulse of 2,0 becomes profit and 2,0 becomes profit and 3,0 becomes pulse of 4,0 becomes pulse of 4,	milisecond ppm/K Full-Scale  VDC miliAmp	Mass Pain Retor (max.) Mass Servo Clamp State (AC.1) on. of Inertia Shalt Clamp Retor (max.) Mom. of Inertia Pain Retor (max.) MTSE Hazardous materials Outgassing materials ITAR classified Approved Marking	32 43 2.06-05 1.06-05 0.22 bilares per 1M hours based on ML-HBC-2TP method for ground military vehicles at 200-cleius average 0.22 bilares per 1M hours based on ML-HBC-2TP method for most shellowed at 300-cleius average 0.35 bilares per 1M hours based on ML-HBC-2TP method for most shellowed at 300-cleius average 0.35 bilares per 1M hours based on ML-HBC-2TP method for most shellowed 350-cleius average 0.35 bilares per 1M hours based on ML-HBC-2TP method for most shellowed health of 350-bilares average 0.35 bilares per 1M hours based on ML-HBC-2TP method for method for method for hours average 1M per 1M p	grams grams Kgm²	
Resolution Repeatability Static Accuracy over 30% Internal Position Update Period Internal Position Update Period Thermal Dark Coefficient Max. Speed for Angle Measurement Data Cutputs Power Supply Curnent Consumption Reverse Polarity Connector (ACs. & RFCx Product Options)	As above (finited to 17 bits) - resolution defined as one edge of ASI pulse train  4-1  4-1  4-1  4-1  4-1  4-1  4-1  4-	milisecond ppm/K Full-Scale  VDC miliAmp	Mass Plain Rotor (max.) Mass Servo Clamp Stator (AC1) om. of Inertis Shit Charp Rotor (max.) Mom. of Inertis Plain Rotor (max.) Mom. of Inertis Plain Rotor (max.) MTBF Hazardous materials Outgassing materials 1TAR classification Approvide	32 43 43 43 206-65 126-65 126-65 127 billures ger 1M hours besed om ML-186-217- method by ground milliary vehickes at 200-cetion average 0.35 billures ger 1M hours besed om ML-186-217- method by ground milliary vehickes at 200-cetion average 0.35 billures ger 1M hours besed om ML-186-217- method by manual shelternd at 350-cetion average 0.35 billures ger 1M hours besed on ML-186-217- method by manual shelternd at 350-cetion average 0.35 billures ger 1M hours besed on ML-186-217- method by manual shelternd at 350-cetion average 0.35 billures ger 1M hours besed on ML-186-217- method by manual shelternd at 350-cetion average 0.35 billures ger 1M hours besed on ML-186-217- method by manual shelternd at 350-cetion average 0.35 billures ger 1M hours besed on ML-186-217- method by manual shelternd at 350-cetion average 0.35 billures ger 1M hours besed on ML-186-217- method by manual shelternd at 350-cetion average 0.35 billures ger 1M hours besed on ML-186-217- method by manual shelternd at 350-cetion average 0.35 billures ger 1M hours besed on ML-186-217- method by manual shelternd at 350-cetion average 0.35 billures ger 1M hours besed on ML-186-217- method by manual shelternd at 350-cetion average 0.35 billures ger 1M hours besed on ML-186-217- method by manual shelternd at 350-cetion average 0.35 billures ger 1M hours besed on ML-186-217- method by manual shelternd at 350-cetion average 0.35 billures ger 1M hours besed on ML-186-217- method by manual shelternd at 350-cetion average 0.35 billures ger 1M hours besed on ML-186-217- method by manual shelternd at 350-cetion average 0.35 billures ger 1M hours besed on ML-186-217- method by manual shelternd at 350-cetion average 0.35 billures ger 1M hours besed on ML-186-217- method by manual shelternd at 350-cetion average at 350-cet	grams grams Kgm²	

Электродвигатель	JCM38×06S	JCM38×12S
Номинальная мощность, Вт	56	58
Номинальный момент, Нм	0,07	0,14
Пиковый момент, Нм	0,21	0,42
Номинальная скорость, об/мин	8000	4000
Номинальный ток фазы, А <sub>мелл</sub>	3,2	3,2
Постоянная момента, Нм/А <sub>вилл</sub>	0,022	0,043
Постоянная мотора, Нм/√Вт	0,03	0,05
Напряжение питания, В <sub>антл</sub>	24	24
Сопротивление (фаза-фаза), Ом	0,6	0,86
Индуктивность (фаза- фаза), мГн	0,24	0,5
Максимальный КПД, %	90	88
Число пар полюсов	7	7
Момент инерции ротора, кг-см² *	0,01	0,02
Масса (статор + ротор), г *	64 (54+10)	94 (74+20)
Внешний диаметр статора D, мм	38	38
Внутренний диаметр ротора d, мм	18	18
Диаметр лобовых частей G, мм	36,2	36,2
Длина ротора I, мм *	8	16
Длина штырьковых лепестков h, мм	5	5
Длина статора L (max), мм	16,5	22,5



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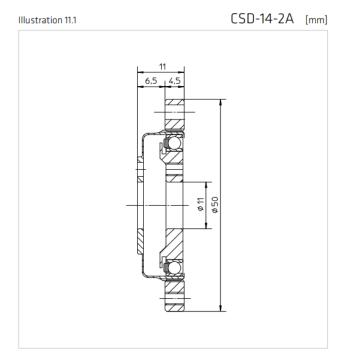
	Unit	[	CSF-14-	1U-CC-F	]	
Ratio	i[]	30	50	80	100	П
Repeatable peak toque	T <sub>R</sub> [Nm]	9.0	18	23	28	
Average torque	T <sub>A</sub> [Nm]	6.8	6.9	11	11	П
Rated torque	T <sub>N</sub> [Nm]	4.0	5.4	7.8	7.8	
Momentary peak torque	T <sub>M</sub> [Nm]	17	35	47	54	П
Maximum input speed (grease lubrication)	n <sub>in (max)</sub> [rpm]	8500				
Average input speed (grease lubrication)	n <sub>av (max)</sub> [rpm]	3500				
Moment of inertia	J <sub>in</sub> [x10 <sup>-4</sup> kgm <sup>2</sup> ]	340				
Weight	m [g]	295				



#### 4.11 Measurement, Electrical & Measurement, Electrical, Environmental Data (37mm) Measurement, Electrical, Environmental & Material Data for 37mm IncOder

Measurement				
Measurement	Absolute over 360°. Note this is true absolute - no motion required at start up			
Resolution (101001 Product Option)	10bits 1.024counts per rev 1265.6arc-secs 6144micro-rads			
Resolution (121001 Product Option)	12bits 4.096counts per rev 316.4arc-secs 1536micro-rads			
Resolution (141001 Product Option)	14bits 16,384counts per rev 79,1arc-secs 384micro-rads			
Resolution (161001 Product Option)	16bits 65,536counts per rev 19.77aro-secs 96micro-rads			
Resolution (171001 Product Option)	17bis 131.072counts per rev 2.47arc-secs 48micro-rads			
Repeatability	4/-1	count		
Static Accuracy over 360 <sup>0</sup>	<150aro-seconds or <0.73miliradians	COUNT		
Internal Position Update Period	<130ai / seculus di <0.73mii adalis	milisecond		
Thermal Drift Coefficient	<1.0	ppm/K Full-Sc		
Max. Speed for Angle Measurement	<u>≤</u> 1.0 10.000	_		
	10,000	r.p.m.		
Max. Physical Speed	10,000	r.p.m.		
lectrical				
Data Outputs	RS422 Compatible, supports SSI (Serial Synchronous Interface), ASI (asynchronous serial interface), SPI or BiSS-C.			
Power Supply	5VDC (4.5-8VDC) or 12VDC (4.5-14VDC)	VDC		
Current Consumption	<100 (typically <75 and does not change significantly with voltage supply)	miliAmp		
Reverse Polarity	PSU Reverse polarity protected to max. supply voltage	VDC		
Zero Setting	Zero Set or Reset to factory value via Electronics Module			
Power Up Time To 1st Measurement	≪500	milisecond		
nvironment				
Operating Temp.	Minus 45 to +85 (+65 at>8VDC power supply)	Celsius		
	Operation outside limits to be qualified by user. At temperatures >85Celsius, duration should be minimized.			
Storage Temp.	Minus 55 to +125	Celsius		
Temperature Shock	MIL-STD-810G, Method 503.5, Procedure I-B (T1=-40 °C, T2=55 °C.)			
IP Rating - Rotor & Stator	IP67 for <60 minutes & 1m depth			
Humidity	RH 0-99% non-condensing - but unaffected by occasional condensation			
Salt Fog	Complies with DEF STAN 00-35 Pt 3 Iss. 4, Test CN2 Salt Mist Test			
Bio Hazards	Complies with DEF-STAN 00-35 Pt. 4 Iss. 4 Section 11 (Hazards)			
Induced Dust & Sand	Complies with DEF STAN 00-35 Part 3 Issue 4, Test CL25 (Turbulent Dust) Cat 1			
Shock	IEC 60068-2-27 100g for 11ms - axial & radial - suitable for most airborne, marine & armoured vehicles			
SHOCK	MIL-STD-810G, Method 516.6, Procedure I-Functional Shock - axial and radial - 40 g 11 ms, sawboth waveform			
Vibration	IEC 60068-2-6 20g for 10-2000Hz - axial and radial - suitable for most high vibration & airborne environments	-		
VIDIALION	MIL-STD-810G, Method 514.6, Procedure I - axial and radial - Category 20, for tracked vehicles			
		Bar		
Environmental pressure range	0 to 4 (in other words vacuum to 4)			
Max. permissible press. change rate	1	Bar/second		
EMC Radiated Susceptibility	(Installed) Complies with IEC 61000-6-2 - suitable for fitment in harsh EMC environments			
EMC Radiated Emissions	(Installed) Complies with IEC 61000-6-4 - suitable for fitment adjacent to EMI sensitive devices			
Miscellaneous				
Mass Set-Screw Rotor (max.)	10 (for 8mm bore)	grams		
Mass Plain Rotor (max.)	7 (for 8mm bore)	grams		
Mass Screw Mount Stator (max.)	20 (for 8mm bore)	grams		
Mass E-Module in Housing	25	grams		
MTBF	0.22 failures per 1M hours based on MIL-HBK-217+ method for ground military vehicles at 20Celsius average			
MTBF	0.35 failures per 1M hours based on MIL-HBK-217+ method for naval sheltered at 35Celsius average			
Hazardous materials	Standard range - Hazardous materials not used. RoHS compliant. RoHS certificate available. REACH statement available.			
Outgassing materials	Complies with NASA class'n as low outgas mail. with TML <1% & CVCM <0.1% at 125C & 24hrs in vacuum to ASTM E-595-90			
ITAR classification	Not ITAR controlled. No ITAR components.			
Approvals	Flammability Rating UL94V-0. Standard range - RoHS compliant - RoHS certificate available. REACH statement available.			
Marking	Zettlex, logo, CE & UL94V-0 printed on Rotor & Stator faces; Serial Number label.			
	Extended Product Range Option E - engraved serial number and part number on exterior faces of Stator & Rotor			
Country of Manufacture	UK			

Электродвигатель	JCM38×06S
Номинальная мощность, Вт	56
Номинальный момент, Нм	0,07
Пиковый момент, Нм	0,21
Номинальная скорость, об/мин	8000
Номинальный ток фазы, А <sub>мил</sub>	3,2
Постоянная момента, Нм/А	0,022
Постоянная мотора, Нм/√Вт	0,03
Напряжение питания, В <sub>ампл</sub>	24
Сопротивление (фаза-фаза), Ом	0,6
Индуктивность (фаза- фаза), мГн	0,24
Максимальный КПД, %	90
Число пар полюсов	7
Момент инерции ротора, кг•см² *	0,01
Масса (статор + ротор), г *	64 (54+10)
Внешний диаметр статора D, мм	38
Внутренний диаметр ротора d, мм	18
Диаметр лобовых частей G, мм	36,2
Длина ротора I, мм *	8
Длина штырьковых лепестков h, мм	5
Длина статора L (max), мм	16,5



	Unit	CSD-14-2A		14-24	
Ratio	i[]		50		100
Repeatable peak torque	T <sub>R</sub> [Nm]		12		19
Average torque	T <sub>A</sub> [Nm]		4.8		7.7
Rated torque	T <sub>N</sub> [Nm]		3.7		5.4
Momentary peak torque	T <sub>M</sub> [Nm]		24		31
Maximum input speed (oil lubrication)	n <sub>in (max)</sub> [rpm]	14000		100	
Maximum input speed (grease lubrication)	n <sub>in (max)</sub> [rpm]	8500		00	
Average input speed (oil lubrication)	n <sub>av (max)</sub> [rpm]	6500		00	
Average input speed (grease lubrication)	n <sub>av (max)</sub> [rpm]	3500		00	
Moment of inertia	J <sub>in</sub> [x10 <sup>-4</sup> kgm <sup>2</sup> ]	0.021		)21	
Weight	m [kg]			0.1	06



#### 4.11 Measurement, Electrical & Measurement, Electrical, Environmental Data (37mm) Measurement, Electrical, Environmental & Material Data for 37mm IncOder

Measurement				
Measurement	Absolute over 360°. Note this is true absolute - no motion required at start up			
Resolution (101001 Product Option)	10bits 1.024counts per rev 1265.6arc-secs 6144micro-rads			
Resolution (121001 Product Option)	12bits 4.096counts per rev 316.4arc-secs 1536micro-rads			
Resolution (141001 Product Option)	14bits 16,384counts per rev 79,1arc-secs 384micro-rads			
Resolution (161001 Product Option)	16bits 65,536counts per rev 19.77aro-secs 96micro-rads			
Resolution (171001 Product Option)	17bis 131.072counts per rev 2.47arc-secs 48micro-rads			
Repeatability	4/-1	count		
Static Accuracy over 360 <sup>0</sup>	<150aro-seconds or <0.73miliradians	COUNT		
Internal Position Update Period	<130ai / seculus di <0.73mii adalis	milisecond		
Thermal Drift Coefficient	<1.0	ppm/K Full-Sc		
Max. Speed for Angle Measurement	<u>≤</u> 1.0 10.000	_		
	10,000	r.p.m.		
Max. Physical Speed	10,000	r.p.m.		
lectrical				
Data Outputs	RS422 Compatible, supports SSI (Serial Synchronous Interface), ASI (asynchronous serial interface), SPI or BiSS-C.			
Power Supply	5VDC (4.5-8VDC) or 12VDC (4.5-14VDC)	VDC		
Current Consumption	<100 (typically <75 and does not change significantly with voltage supply)	miliAmp		
Reverse Polarity	PSU Reverse polarity protected to max. supply voltage	VDC		
Zero Setting	Zero Set or Reset to factory value via Electronics Module			
Power Up Time To 1st Measurement	≪500	milisecond		
nvironment				
Operating Temp.	Minus 45 to +85 (+65 at>8VDC power supply)	Celsius		
	Operation outside limits to be qualified by user. At temperatures >85Celsius, duration should be minimized.			
Storage Temp.	Minus 55 to +125	Celsius		
Temperature Shock	MIL-STD-810G, Method 503.5, Procedure I-B (T1=-40 °C, T2=55 °C.)			
IP Rating - Rotor & Stator	IP67 for <60 minutes & 1m depth			
Humidity	RH 0-99% non-condensing - but unaffected by occasional condensation			
Salt Fog	Complies with DEF STAN 00-35 Pt 3 Iss. 4, Test CN2 Salt Mist Test			
Bio Hazards	Complies with DEF-STAN 00-35 Pt. 4 Iss. 4 Section 11 (Hazards)			
Induced Dust & Sand	Complies with DEF STAN 00-35 Part 3 Issue 4, Test CL25 (Turbulent Dust) Cat 1			
Shock	IEC 60068-2-27 100g for 11ms - axial & radial - suitable for most airborne, marine & armoured vehicles			
SHOCK	MIL-STD-810G, Method 516.6, Procedure I-Functional Shock - axial and radial - 40 g 11 ms, sawboth waveform			
Vibration	IEC 60068-2-6 20g for 10-2000Hz - axial and radial - suitable for most high vibration & airborne environments	-		
VIDIALION	MIL-STD-810G, Method 514.6, Procedure I - axial and radial - Category 20, for tracked vehicles			
		Bar		
Environmental pressure range	0 to 4 (in other words vacuum to 4)			
Max. permissible press. change rate	1	Bar/second		
EMC Radiated Susceptibility	(Installed) Complies with IEC 61000-6-2 - suitable for fitment in harsh EMC environments			
EMC Radiated Emissions	(Installed) Complies with IEC 61000-6-4 - suitable for fitment adjacent to EMI sensitive devices			
Miscellaneous				
Mass Set-Screw Rotor (max.)	10 (for 8mm bore)	grams		
Mass Plain Rotor (max.)	7 (for 8mm bore)	grams		
Mass Screw Mount Stator (max.)	20 (for 8mm bore)	grams		
Mass E-Module in Housing	25	grams		
MTBF	0.22 failures per 1M hours based on MIL-HBK-217+ method for ground military vehicles at 20Celsius average			
MTBF	0.35 failures per 1M hours based on MIL-HBK-217+ method for naval sheltered at 35Celsius average			
Hazardous materials	Standard range - Hazardous materials not used. RoHS compliant. RoHS certificate available. REACH statement available.			
Outgassing materials	Complies with NASA class'n as low outgas mail. with TML <1% & CVCM <0.1% at 125C & 24hrs in vacuum to ASTM E-595-90			
ITAR classification	Not ITAR controlled. No ITAR components.			
Approvals	Flammability Rating UL94V-0. Standard range - RoHS compliant - RoHS certificate available. REACH statement available.			
Marking	Zettlex, logo, CE & UL94V-0 printed on Rotor & Stator faces; Serial Number label.			
	Extended Product Range Option E - engraved serial number and part number on exterior faces of Stator & Rotor			
Country of Manufacture	UK			

Электродвигатель	JCM38×06S
Номинальная мощность, Вт	56
Номинальный момент, Нм	0,07
Пиковый момент, Нм	0,21
Номинальная скорость, об/мин	8000
Номинальный ток фазы, А <sub>мпл</sub>	3,2
Постоянная момента, Нм/А <sub>ампл</sub>	0,022
Постоянная мотора, Нм/√Вт	0,03
Напряжение питания, В <sub>ампл</sub>	24
Сопротивление (фаза-фаза), Ом	0,6
Индуктивность (фаза- фаза), мГн	0,24
Максимальный КПД, %	90
Число пар полюсов	7
Момент инерции ротора, кг∙см² *	0,01
Масса (статор + ротор), г *	64 (54+10)
Внешний диаметр статора D, мм	38
Внутренний диаметр ротора d, мм	18
Диаметр лобовых частей G, мм	36,2
Длина ротора I, мм *	8
Длина штырьковых лепестков h, мм	5
Длина статора L (max), мм	16,5

# Редуктор:

Червяк с коэффициентом передачи 50



#### 4.11 Measurement, Electrical & Measurement, Electrical, Environmental Data (37mm) Measurement, Electrical, Environmental & Material Data for 37mm IncOder

Measurement				
Measurement	Absolute over 360°. Note this is true absolute - no motion required at start up			
Resolution (101001 Product Option)	10bits 1.024counts per rev 1265.6arc-secs 6144micro-rads			
Resolution (121001 Product Option)	12bits 4.096counts per rev 316.4arc-secs 1536micro-rads			
Resolution (141001 Product Option)	14bits 16,384counts per rev 79,1arc-secs 384micro-rads			
Resolution (161001 Product Option)	16bits 65,536counts per rev 19.77aro-secs 96micro-rads			
Resolution (171001 Product Option)	17bis 131.072counts per rev 2.47arc-secs 48micro-rads			
Repeatability	4/-1	count		
Static Accuracy over 360 <sup>0</sup>	<150aro-seconds or <0.73miliradians	COUNT		
Internal Position Update Period	<130ai / seculus di <0.73mii adalis	milisecond		
Thermal Drift Coefficient	<1.0	ppm/K Full-Sc		
Max. Speed for Angle Measurement	<u>≤</u> 1.0 10.000	_		
	10,000	r.p.m.		
Max. Physical Speed	10,000	r.p.m.		
lectrical				
Data Outputs	RS422 Compatible, supports SSI (Serial Synchronous Interface), ASI (asynchronous serial interface), SPI or BiSS-C.			
Power Supply	5VDC (4.5-8VDC) or 12VDC (4.5-14VDC)	VDC		
Current Consumption	<100 (typically <75 and does not change significantly with voltage supply)	miliAmp		
Reverse Polarity	PSU Reverse polarity protected to max. supply voltage	VDC		
Zero Setting	Zero Set or Reset to factory value via Electronics Module			
Power Up Time To 1st Measurement	≪500	milisecond		
nvironment				
Operating Temp.	Minus 45 to +85 (+65 at>8VDC power supply)	Celsius		
	Operation outside limits to be qualified by user. At temperatures >85Celsius, duration should be minimized.			
Storage Temp.	Minus 55 to +125	Celsius		
Temperature Shock	MIL-STD-810G, Method 503.5, Procedure I-B (T1=-40 °C, T2=55 °C.)			
IP Rating - Rotor & Stator	IP67 for <60 minutes & 1m depth			
Humidity	RH 0-99% non-condensing - but unaffected by occasional condensation			
Salt Fog	Complies with DEF STAN 00-35 Pt 3 Iss. 4, Test CN2 Salt Mist Test			
Bio Hazards	Complies with DEF-STAN 00-35 Pt. 4 Iss. 4 Section 11 (Hazards)			
Induced Dust & Sand	Complies with DEF STAN 00-35 Part 3 Issue 4, Test CL25 (Turbulent Dust) Cat 1			
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SHOCK	MIL-STD-810G, Method 516.6, Procedure I-Functional Shock - axial and radial - 40 g 11 ms, sawboth waveform			
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ITAR classification	Not ITAR controlled. No ITAR components.			
Approvals	Flammability Rating UL94V-0. Standard range - RoHS compliant - RoHS certificate available. REACH statement available.			
Marking	Zettlex, logo, CE & UL94V-0 printed on Rotor & Stator faces; Serial Number label.			
	Extended Product Range Option E - engraved serial number and part number on exterior faces of Stator & Rotor			
Country of Manufacture	UK			

No	Необходимы	Номинальны	Пиковы	Средни	Пиковы	Передаточно
шарнир	й момент	й момент дв	й	й	й	е отношение
а			момент	момент	момент	ред
а			ДВ	ред	ред	
0	3,476	0,14	0,42	4,8	12	50
1	139,53	2,58	7,75	140	204	100
2	64,03	0,57	1,71	51	70	100
3	29,266	0,57	1,71	34	44	50
4	10,189	0,14	0,42	11	28	100
5	7,681*10 <sup>-5</sup>	0,07	0,21	4,8	12	50
6	1	0,07	0,21	Червяк		60