Linear motor module

- Semi-closed structure
- Max stroke: 5633mm
- Max speed: 5m/s
- Motor continuous thrust range:689N-1378N
- Guide rail specs:25-2 pcs



• Module Ordering Rules

CFX25 - C 2 - L1242 - C - JN 3 - T - 01

Series	Slide length	Qty	Base length	Encode code	Sensor	Sensor qty	Guide rail	Custom
CFX	B:CFS125C(235mm)	2 *1	474-5978mm	C:incremental magnetic 1μm	JN: F&C NPN	Total sensor qty	T:THK	01
25: Base Width 250mm	C:CFS125D(300mm)	"None"	* Base Length L = 64 mm + n × 64 mm	J:absolute magnetic 1μm	JP: F&C PNP			Cust. S/N
	D:CFS125F(430mm)			S:incremental optical 1μm	ON: Omron NPN			
				C05:incremental magnetic 0.5μm	OP: Omron PNP			
				J05: absolute magnetic 0.5μm				
				S05:incremental optical 0.5μm				

• Basic Parameters

Item \ Motor model			CFS125C	CFS125D	CFS125F
Slide length		mm	235	300	430
Continuous thrust		N	689	919	1378
Peak thrust		N	1617	2157	3234
Max load *1	500mm/s	kg	145	190	280
	1000mm/s		79	105	155
Numbers of carriages			4	6	6
Moving *2 part mass		kg	12	15	20
Incremental Encoder *3	Magnetic		Resolution:1um; Repeat accuracy; ±5um, Max speed:5m/s		
	Optical		Resolution:0.5um; Repeat accuracy; ±2um, Max speed:3m/s		
Ambient temp&humidity			0-40°C、20-80%RH (non-condensing)		
Encoder extension *4 cable			E-FN09-26-Lxx-TC1 D-FN16-Lxx-T01 (fit C)/D-FN20-Lxx-T01 (fit D/F)	Standard cable length(m):Lxx:03、05、08、10、12	
Applicable *5 driver			Pulse:AKS-0062AAPDB (fit C)	Bus: AKS-0062AECDB (fit C)	
			Pulse:AKS-0102AAPDB (fit D/F)	Bus: AKS-0102AECDB (fit D/F)	
Module wiring			Standard wiring：0.5 meters		

*1. Theoretical max load (horizontal, 1G accel, 0.5s E-stop, 1000mm stroke); actual load reduced by speed, acceleration, motor power, etc.

*2. Including motor, slide, worktable, encoder and other component weights;excluding cable weight.

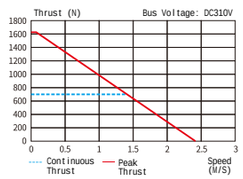
*3. This data is measured by RENISHAW laser interferometer at 20° C ambient temperature, with a travel range of 1000mm;

*4. If extension cables are needed, please consult CF

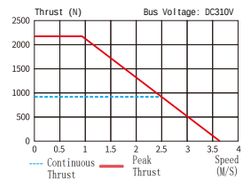
*5 Driver model, please consult CF

• Motor Performance Parameters

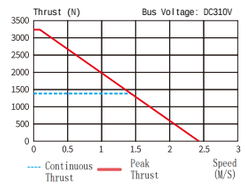
CFS125C Slide 220V Thrust Diagram



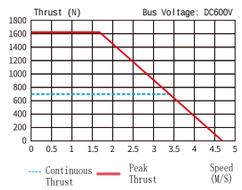
CFS125D Slide 220V Thrust Diagram



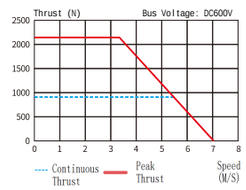
CFS125F Slide 220V Thrust Diagram



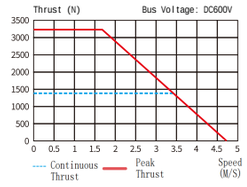
CFS125C Slide 380V Thrust Diagram



CFS125D Slide 380V Thrust Diagram



CFS125F Slide 380V Thrust Diagram



Specs \ Motor Model	Continuous Thrust	Peak Thrust	Continuous Current	Peak Current	Thrust Constant ±10%	Back EMF Constant ±10%	Motor Constant ±10%	Resistance ±10%	Inductance ±30%	Electrical Time Constant	Rated Power	Maximum Power	Magnetic Pitch	Thermal Dissipation Coefficient	Magnetic Attraction Force	Mover Weight	Max Temperature
	N	N	A	A	N/A	V/m/s	N/√W	Ohm	mH	ms	W	W	mm	W/°C	KN	Kg	°C
CFS125C	689	1617	5.1	15.3	146.8	127.7	36.1	16.88	64.16	3.8	645	8031	32	10.7	3.6	4.41	120
CFS125D	919	2157	10.2	30.6	97.9	85.1	41.7	5.67	21.56	3.8	860	10711	32	14.3	4.6	5.57	120
CFS125F	1378	3234	10.2	30.6	146.8	127.7	51.1	8.45	32.11	3.8	1289	16057	32	21.5	6.6	8.41	120

*1. Measurement ambient temperature 25° C, fixed on heat dissipation environment *2. Use 0.5m standard cable for voltage measurement.

*3. Inductance measured at 1 kHz.

*4. Unmarked dimensions tolerance ±0.1mm.

*5 Peak thrust duration: 1 s

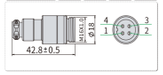
*6. Related parameters are subject to change without notice

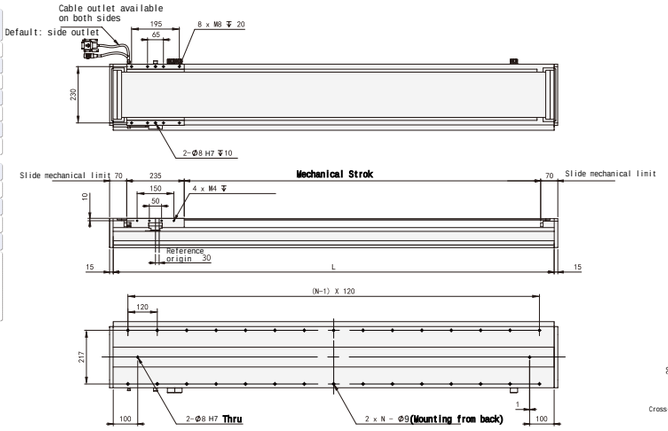
• CFS125C Dimension Parameters

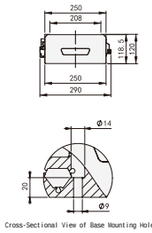
Digital Signal Encoder Output Signal (ABZ)	D-sub 9-pin (Male)		
Pin No.	1	2	3
Singal	0V	A+	Z+
Pin No.	4	5	6
Singal	B+	5V	A-
Pin No.	7	8	9
Singal	Z-	B-	-

Applicable to CF Optical & Magnetic Encoder

Motor Connector (Male): IGM-6K				
Max Length: 42.8 ± 0.5 Max diameter: Φ18				
External Thread:M16X1.0				
Pin No.	1	2	3	4
Motor Phase	PE	U	V	W







CFS125C
Slide length:235mm

Total Length (mm)	504	632	760	888	1016	1144	1272	1400	1528	1656	1784	1912	2040	2168	2296	2424	2552	2680	2808	2936	3064	3192
L Base Length (mm)	474	602	730	858	986	1114	1242	1370	1498	1626	1754	1882	2010	2138	2266	2394	2522	2650	2778	2906	3034	3162
Mechanical Stroke	129	257	385	513	641	769	897	1025	1153	1281	1409	1537	1665	1793	1921	2049	2177	2305	2433	2561	2689	2817
N	3	5	5	7	9	9	11	11	13	13	15	15	17	17	19	19	21	21	23	25	25	27
Total Weight (kg)	31.1	35.5	39.9	44.2	48.6	52.9	57.3	61.7	66.0	70.4	74.7	79.1	83.5	87.8	92.2	96.5	100.9	105.2	109.6	114.0	118.3	122.7

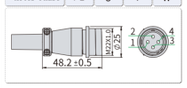
Total Length (mm)	3320	3448	3576	3704	3832	3960	4088	4216	4344	4472	4600	4728	4856	4984	5112	5240	5368	5496	5624	5752	5880	6008
L Base Length (mm)	3290	3418	3546	3674	3802	3930	4058	4186	4314	4442	4570	4698	4826	4954	5082	5210	5338	5466	5594	5722	5850	5978
Mechanical Stroke	2945	3073	3201	3329	3457	3585	3713	3841	3969	4097	4225	4353	4481	4609	4737	4865	4993	5121	5249	5377	5505	5633
N	27	29	29	31	31	33	33	35	35	37	37	39	39	41	43	43	45	45	47	47	49	49
Total Weight (kg)	127.0	131.4	135.8	140.1	144.5	148.8	153.2	157.6	161.9	166.3	170.6	175.0	179.4	183.7	188.1	192.4	196.8	201.1	205.5	209.9	214.2	218.6

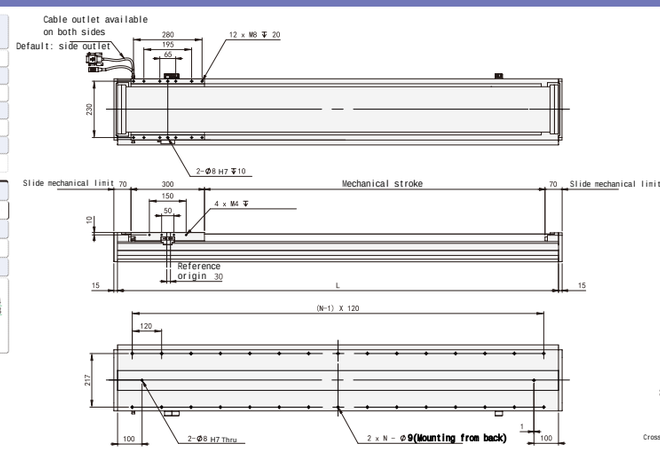
• CFS125D Dimension Parameters

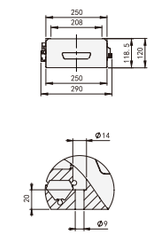
Digital Signal Encoder Output Signal (ABZ)	D-sub 9-pin (Male)		
Pin No.	1	2	3
Signal	0V	A+	Z+
Pin No.	4	5	6
Signal	B+	5V	A-
Pin No.	7	8	9
Signal	Z-	B-	-

Applicable to CF Optical & Magnetic Encoder

Motor Connector (Male): WS20J4ZQ				
Max Length: 42.8 ± 0.5 Max diameter Φ25				
External Thread: M22X1.0				
Pin No.	1	2	3	4
Motor Phase	PE	U	V	W







CFS125D
Slide length:300mm

Total Length (mm)	504	632	760	888	1016	1144	1272	1400	1528	1656	1784	1912	2040	2168	2296	2424	2552	2680	2808	2936	3064	3192
L Base Length (mm)	474	602	730	858	986	1114	1242	1370	1498	1626	1754	1882	2010	2138	2266	2394	2522	2650	2778	2906	3034	3162
Mechanical Stroke	-	-	320	448	576	704	832	960	1088	1216	1344	1472	1600	1728	1856	1984	2112	2240	2368	2496	2624	2752
N	-	-	5	7	9	9	11	11	13	13	15	15	17	17	19	19	21	21	23	25	25	27
Total Weight (kg)	-	-	42.9	47.2	51.6	55.9	60.3	64.7	69.0	73.4	77.7	82.1	86.5	90.8	95.2	99.5	103.9	108.2	112.6	117.0	121.3	125.7

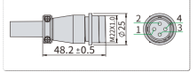
Total Length (mm)	3320	3448	3576	3704	3832	3960	4088	4216	4344	4472	4600	4728	4856	4984	5112	5240	5368	5496	5624	5752	5880	6008
L Base Length (mm)	3290	3418	3546	3674	3802	3930	4058	4186	4314	4442	4570	4698	4826	4954	5082	5210	5338	5466	5594	5722	5850	5978
Mechanical Stroke	2880	3008	3136	3264	3392	3520	3648	3776	3904	4032	4160	4288	4416	4544	4672	4800	4928	5056	5184	5312	5440	5568
N	27	29	29	31	31	33	33	35	35	37	37	39	39	41	43	43	45	45	47	47	49	49
Total Weight (kg)	130.0	134.4	138.8	143.1	147.5	151.8	156.2	160.6	164.9	169.3	173.6	178.0	182.4	186.7	191.1	195.4	199.8	204.1	208.5	212.9	217.2	221.6

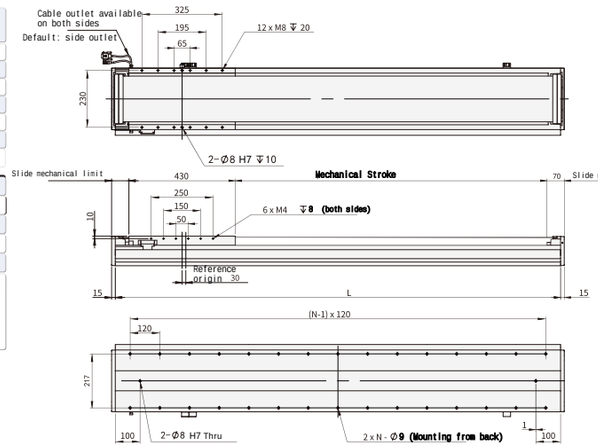
• CFS125F Dimension Parameters

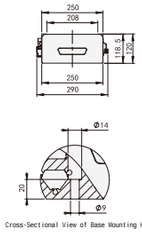
Digital Signal Encoder Output Signal (ABZ)	D-sub 9-pin (Male)		
Pin No.	1	2	3
Signal	0V	A+	Z+
Pin No.	4	5	6
Signal	B+	5V	A-
Pin No.	7	8	9
Signal	Z-	B-	-

Applicable to CF Optical & Magnetic Encoder

Motor Connector (Male): WS20J4ZQ				
Max Length: 42.8 ± 0.5 Max diameter Φ25				
External Thread: M22X1.0				
Pin No.	1	2	3	4
Motor Phase	PE	U	V	W







CFS125F
Slide length:430mm

Total Length (mm)	504	632	760	888	1016	1144	1272	1400	1528	1656	1784	1912	2040	2168	2296	2424	2552	2680	2808	2936	3064	3192
L Base Length (mm)	474	602	730	858	986	1114	1242	1370	1498	1626	1754	1882	2010	2138	2266	2394	2522	2650	2778	2906	3034	3162
Mechanical Stroke	-	-	190	318	446	574	702	830	958	1086	1214	1342	1470	1598	1726	1854	1982	2110	2238	2366	2494	2622
N	-	-	5	7	9	9	11	11	13	13	15	15	17	17	19	19	21	21	23	25	25	27
Total Weight (kg)	-	-	45.9	50.2	54.6	58.9	63.3	67.7	72.0	76.4	80.7	85.1	89.5	93.8	98.2	102.5	106.9	111.2	115.6	120.0	124.3	128.7

Total Length (mm)	3320	3448	3576	3704	3832	3960	4088	4216	4344	4472	4600	4728	4856	4984	5112	5240	5368	5496	5624	5752	5880	6008
L Base Length (mm)	3290	3418	3546	3674	3802	3930	4058	4186	4314	4442	4570	4698	4826	4954	5082	5210	5338	5466	5594	5722	5850	5978
Mechanical Stroke	2750	2878	3006	3134	3262	3390	3518	3646	3774	3902	4030	4158	4286	4414	4542	4670	4798	4926	5054	5182	5310	5438
N	27	29	29	31	31	33	33	35	35	37	37	39	39	41	43	43	45	45	47	47	49	49
Total Weight (kg)	133.0	137.4	141.8	146.1	150.5	154.8	159.2	163.6	167.9	172.3	176.6	181.0	185.4	189.7	194.1	198.4	202.8	207.1	211.5	215.9	220.2	224.6

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