



PIXA SERIES

IRON CORE LINEAR MOTOR



HEAVY DUTY

high force motion systems

PBA
SYSTEMS

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HEAVY DUTY

high force motion systems

PIX / PIXA SERIES

IRON CORE LINEAR MOTOR



Heavy Duty for High Force Motion Systems

PIX Ironcore motors offer an affordable high force solution to demanding linear applications with minimal cogging effect that is associated with traditional iron core linear motors.

Our Ironcore design is designed for optimal dissipation of heat and thus capable of extremely high forces (>9000N). These motors coils are manufactured with high flex cables, optional external hall effect attachments are used in multiple general automation applications.

The Modular Flat Magnet tracks which are available in different length increments completes this product selection and allows for easy assembly of un-restricted stroke length by butting tracks of different lengths together.

- High force / thrust
- Maintenance Free
- High stiffness
- Compact size

Application

- Material Transfer / Pick and place
- Laser cutting
- Extruders
- Machine Tools
- Large format printing
- Textile printing
- Digital printing

PART NUMBERING SYSTEM

■ Coil Assembly

PIXA110-023-030 - S - TC - 2.0 - 9NF - HC

MOTOR MODEL	
PIXA110 - 023 - 030	
PIXA190 - 023 - 030	
PIXA110 - 023 - 050	
PIXA190 - 023 - 050	
PIXA190 - 047 - 065	
PIXA360 - 047 - 065	
PIXA360 - 047 - 085	
PIXA530 - 047 - 085	
PIXA530 - 047 - 110	
PIXA690 - 047 - 110	
PIXA690 - 047 - 135	
PIXA690 - 047 - 160	

CONNECTION TYPE	
S Series	
P Parallel	

THERMAL PROTECTION	
TM Thermostat	

HALL CABLE OPTIONS	
NH Without Hall Sensor	
HC Hall Sensor with Connector	
H Hall Sensor with Flying Leads	

POWER CABLE OPTIONS	
NF Without Ferrite Core (Not recommended)	
9NF No FC, D Sub 9 pins Male connector	

CABLE LENGTH	
0.5 0.5m	
2.0 2.0m	
3.0 3.0m	
5.0 5.0m	

■ Magnet Track

PIXMA030 - TL120 - NC

MOTOR MODEL	
PIXMA030	
PIXMA050	
PIXMA065	
PIXMA085	
PIXMA110	
PIXMA135	
PIXMA160	

TRACK COVER	
BLANK With Cover	
NC Without Cover	

TRACK LENGTH	
TL120 - 120mm	
TL240 - 240mm	
TL480 - 480mm	

* Minimum Bending Radius - 10 times of cable diameter

IRON CORE LINEAR MOTOR

DXB/BT

PIX/PIXA

PSM/PSME

CVC

CVCA

RVCA

PDDR

PCA

PDA

PIA

OCTO

PRG

LINEAR ENCODER

MAXTUNE

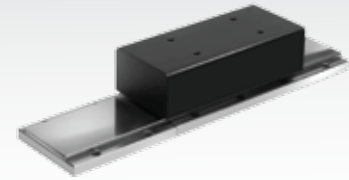
DELTA

MITSUBISHI

TECHNOSOFT

PIXA 030

- Iron Core Motor
- Peak force to 320N, Continuous force to 80N
- Integrated with Hall Sensor (Optional)
- Ideal for high force

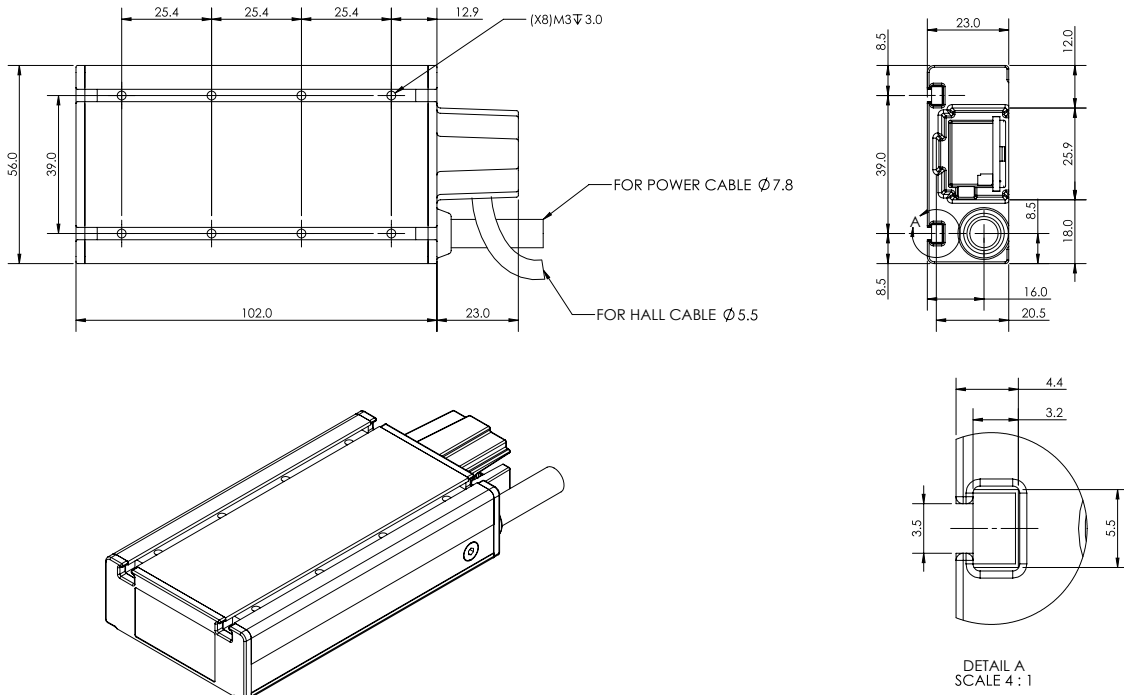


PIXA SERIES
IRON CORE LINEAR MOTOR

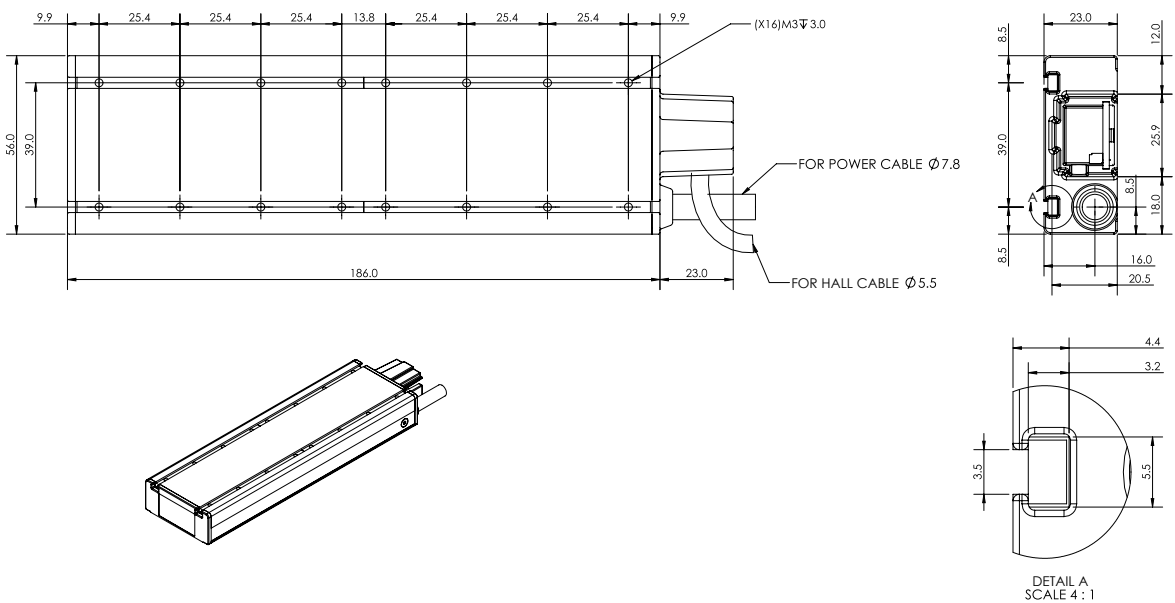
SPECIFICATION	MODEL			
	PIXA110-023-030		PIXA190-023-030	
Connection Type	S	P	S	P
Performance	Unit			
Peak Force	N	160		320
Continuous Force @ 105°C*	N	40		80
Continuous Stall Force @ 105°C*	N	28		57
Peak Power @ 105°C	W	357		713
Continuous Power @ 105°C*	W	22.3		45
Electrical				
Peak Current	A ^{pk}	2.49	5.66	4.98 11.31
Continuous Current @ 105°C*	A ^{pk}	0.62	1.41	1.24 2.83
Continuous Stall Current @ 105°C*	Arms	0.44	1.00	0.88 2.00
Force Constant	N/A ^{pk}	64.4	28.3	64.4 28.3
Back EMF Constant	V ^{pk} /m/s	74.0	32.5	74.0 32.5
Coil Resistance L-L @ 25°C	ohm	58.0	12.0	29.0 6.0
Coil Resistance L-L @ 105°C*	ohm	76.8	15.9	38.4 7.9
Inductance L-L @ 1kHz	mH	180	35	90 18
Motor Constant @ 105°C*	N/√W	8.5		12.0
Electrical Cycle Length	mm	24		
Max. Terminal Voltage	Vdc	600		
Thermal				
Thermal Resistance @ 105°C*	°C/W	3.6		1.8
Max. Coil Temperature	°C	125		
Mechanical				
Coil Weight	kg	0.55		1.00
Attractive Force	N	260		520

Notes: 1. A^{pk} = 1.414 * Arms; V^{pk} = 1.414 * Vrms. 2. * Ambient temperature 25°C, natural convection, no heat sink. 3. Specifications tolerance – inductance +/-30%, all others +/-10%.

PIXA110-023-030

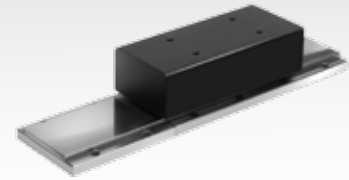


PIXA190-023-030



PIXA 050

- Iron Core Motor
- Peak force to 597N, Continuous force to 149N
- Integrated with Hall Sensor (Optional)
- Ideal for high force

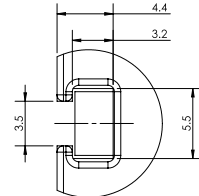
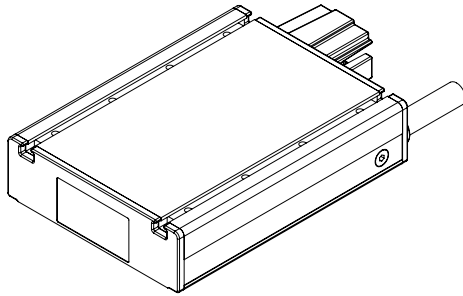
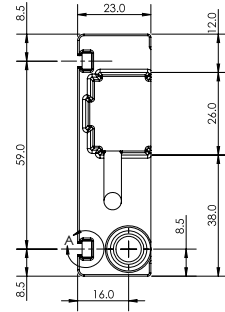
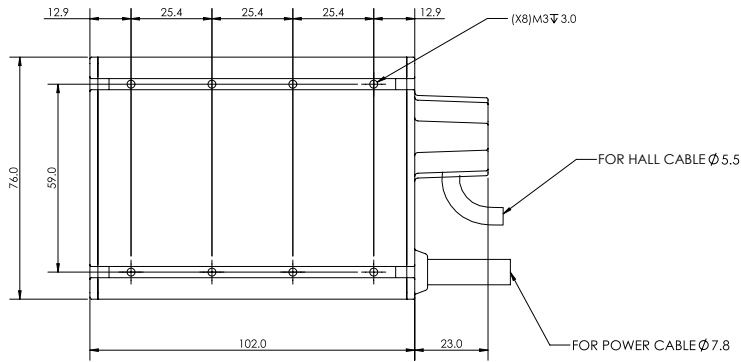


PIXA SERIES
IRON CORE LINEAR MOTOR

SPECIFICATION	MODEL				
	PIXA110-023-050		PIXA190-023-050		
Connection Type	S	P	S	P	
Performance	Unit				
Peak Force	N	298		597	
Continuous Force @ 105°C*	N	75		149	
Continuous Stall Force @ 105°C*	N	53		106	
Peak Power @ 105°C	W	683		1366	
Continuous Power @ 105°C*	W	42.7		85	
Electrical					
Peak Current	A ^{pk}	4.64	10.63	9.28	21.27
Continuous Current @ 105°C*	A ^{pk}	1.16	2.66	2.32	5.32
Continuous Stall Current @ 105°C*	Arms	0.82	1.88	1.64	3.76
Force Constant	N/A ^{pk}	64.4	28.3	64.4	28.3
Back EMF Constant	V ^{pk} /m/s	74.0	32.5	74.0	32.5
Coil Resistance L-L @ 25°C	ohm	32.0	6.0	16.0	3.0
Coil Resistance L-L @ 105°C*	ohm	42.3	7.9	21.2	4.0
Inductance L-L @ 1kHz	mH	111	21	55	11
Motor Constant @ 105°C*	N/√W		11.4		16.2
Electrical Cycle Length	mm			24	
Max. Terminal Voltage	Vdc			600	
Thermal					
Thermal Resistance @ 105°C*	°C/W		1.9		0.9
Max. Coil Temperature	°C			125	
Mechanical					
Coil Weight	kg		0.80		1.60
Attractive Force	N		430		860

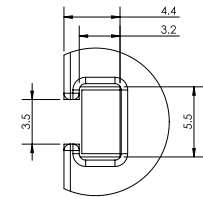
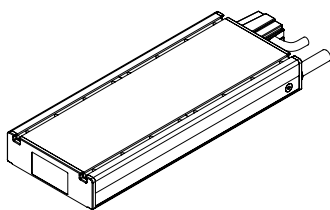
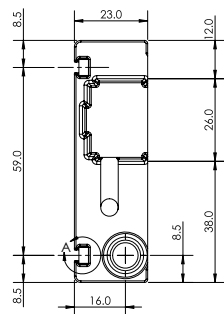
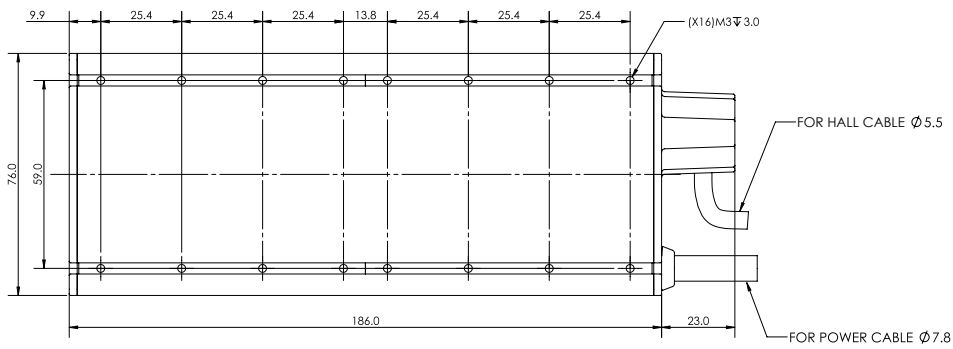
Notes: 1. A^{pk} = 1.414 * Arms; V^{pk} = 1.414 * Vrms. 2. * Ambient temperature 25°C, natural convection, no heat sink. 3. Specifications tolerance – inductance +/-30%, all others +/-10%.

PIXA110-023-050



DETAIL A
SCALE 4 : 1

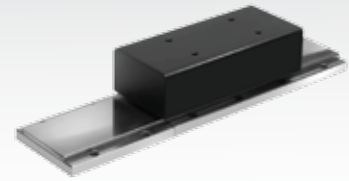
PIXA190-023-050



DETAIL A
SCALE 4 : 1

PIXA 065

- Iron Core Motor
- Peak force to 2205N, Continuous force to 551N
- Integrated with Hall Sensor (Optional)
- Ideal for high force



PIXA SERIES
IRON CORE LINEAR MOTOR

SPECIFICATION	MODEL				
	PIXA190-047-065		PIXA360-047-065		
Connection Type		S	P	S	P
Performance	Unit				
Peak Force	N	1101		2205	
Continuous Force @ 105°C*	N	275		551	
Continuous Stall Force @ 105°C*	N	195		390	
Peak Power @ 105°C	W	1393		3172	
Continuous Power @ 105°C*	W	87.0		198	
Electrical					
Peak Current	A ^{pk}	9.67	16.97	20.64	36.25
Continuous Current @ 105°C*	A ^{pk}	2.42	4.24	5.16	9.06
Continuous Stall Current @ 105°C*	Arms	1.71	3.00	3.65	6.41
Force Constant	N/A ^{pk}	113.9	64.4	106.8	60.8
Back EMF Constant	V ^{pk} /m/s	130.9	74.0	122.8	69.9
Coil Resistance L-L @ 25°C	ohm	15.0	4.9	7.5	2.5
Coil Resistance L-L @ 105°C*	ohm	19.8	6.5	9.9	3.3
Inductance L-L @ 1kHz	mH	206	68	103	34
Motor Constant @ 105°C*	N/√W	29.5		39.1	
Electrical Cycle Length	mm	48			
Max. Terminal Voltage	Vdc	600			
Thermal					
Thermal Resistance @ 105°C*	°C/W	0.92		0.40	
Max. Coil Temperature	°C	125			
Mechanical					
Coil Weight	kg	3		7	
Attractive Force	N	1202		2405	

Notes: 1. A^{pk} = 1.414 * Arms; V^{pk} = 1.414 * Vrms. 2. * Ambient temperature 25°C, natural convection, no heat sink. 3. Specifications tolerance – inductance +/-30%, all others +/-10%.

Magnet Track

Motor Coil

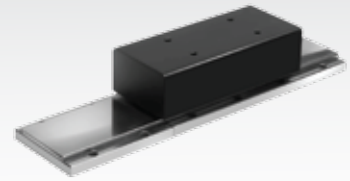
L = 500 mm
Cable OD = 9 mm

TRACK	L (mm)	WEIGHT(kg)
TL120	120	1.1
TL240	240	2.2
TL480	480	4.4

COIL	A (mm)	WEIGHT(kg)
PIXA190-047-065	186	3.00
PIXA360-047-065	354	7.00

PIXA 085

- Iron Core Motor
- Peak force to 3968N, Continuous force to 992N
- Integrated with Hall Sensor (Optional)
- Ideal for high force

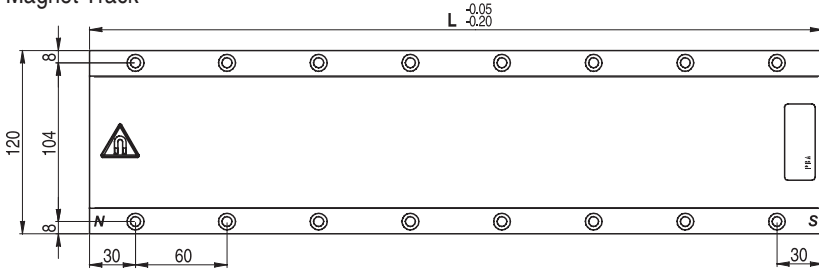


PIXA SERIES
IRON CORE LINEAR MOTOR

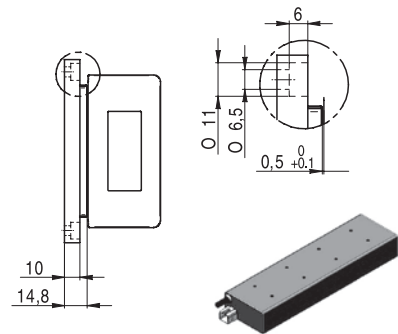
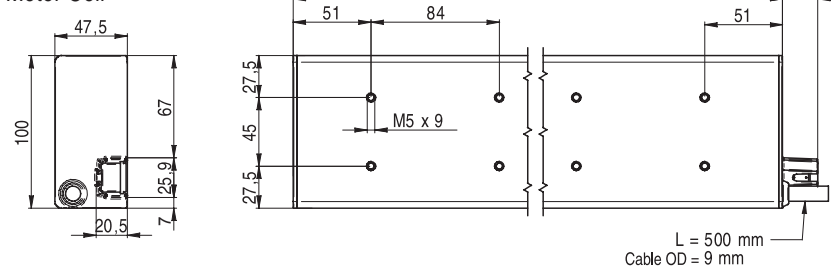
SPECIFICATION	MODEL				
	PIXA360-047-085		PIXA530-047-085		
Connection Type		S	P	S	P
Performance	Unit				
Peak Force	N	2646		3968	
Continuous Force @ 105°C*	N	661		992	
Continuous Stall Force @ 105°C*	N	468		702	
Peak Power @ 105°C	W	4568		6852	
Continuous Power @ 105°C*	W	285.5		428	
Electrical					
Peak Current	A ^{pk}	24.77	43.55	37.16	65.27
Continuous Current @ 105°C*	A ^{pk}	6.19	10.89	9.29	16.32
Continuous Stall Current @ 105°C*	Arms	4.38	7.70	6.57	11.54
Force Constant	N/A ^{pk}	106.8	60.8	106.8	60.8
Back EMF Constant	V ^{pk} /m/s	122.8	69.9	122.8	69.9
Coil Resistance L-L @ 25°C	ohm	7.5	2.3	5.0	1.5
Coil Resistance L-L @ 105°C*	ohm	9.9	3.0	6.6	2.0
Inductance L-L @ 1kHz	mH	97	31	64	20
Motor Constant @ 105°C*	N/√W	39.1		47.9	
Electrical Cycle Length	mm			48	
Max. Terminal Voltage	Vdc			600	
Thermal					
Thermal Resistance @ 105°C*	°C/W	0.28		0.19	
Max. Coil Temperature	°C			125	
Mechanical					
Coil Weight	kg	10		14	
Attractive Force	N	3143		4663	

Notes: 1. A^{pk} = 1.414 * Arms; V^{pk} = 1.414 * Vrms. 2. * Ambient temperature 25°C, natural convection, no heat sink. 3. Specifications tolerance – inductance +/-30%, all others +/-10%.

Magnet Track



Motor Coil



Standard Magnet Track

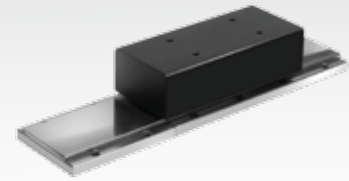
TRACK	L (mm)	WEIGHT(kg)
TL120	120	1.4
TL240	240	2.9
TL480	480	5.8

Motor Coil

COIL	A (mm)	WEIGHT(kg)
PIXA360-047-085	354	10.00
PIXA530-047-085	522	14.00

PIXA 110

- Iron Core Motor
- Peak force to 6409N, Continuous force to 1602N
- Integrated with Hall Sensor (Optional)
- Ideal for high force



PIXA SERIES
IRON CORE LINEAR MOTOR

SPECIFICATION	MODEL				
	PIXA530-047-110		PIXA690-047-110		
Connection Type		S	P	S	P
Performance	Unit				
Peak Force	N	4808		6409	
Continuous Force @ 105°C*	N	1202		1602	
Continuous Stall Force @ 105°C*	N	850		1133	
Peak Power @ 105°C	W	5029		7167	
Continuous Power @ 105°C*	W	314.3		448	
Electrical					
Peak Current	A ^{pk}	45.02	79.18	61.65	82.01
Continuous Current @ 105°C*	A ^{pk}	11.26	19.80	15.41	20.50
Continuous Stall Current @ 105°C*	Arms	7.96	14.00	10.90	14.50
Force Constant	N/A ^{pk}	106.8	60.8	104.0	77.8
Back EMF Constant	V ^{pk} /m/s	122.8	69.9	119.6	89.5
Coil Resistance L-L @ 25°C	ohm	2.5	0.8	1.9	1.0
Coil Resistance L-L @ 105°C*	ohm	3.3	1.1	2.5	1.3
Inductance L-L @ 1kHz	mH	44	15	33	18
Motor Constant @ 105°C*	N/√W	67.8		75.7	
Electrical Cycle Length	mm	48			
Max. Terminal Voltage	Vdc	600			
Thermal					
Thermal Resistance @ 105°C*	°C/W	0.25		0.18	
Max. Coil Temperature	°C	125			
Mechanical					
Coil Weight	kg	18		25	
Attractive Force	N	5831		7774	

Notes: 1. A^{pk} = 1.414 * Arms; V^{pk} = 1.414 * Vrms. 2. * Ambient temperature 25°C, natural convection, no heat sink. 3. Specifications tolerance – inductance +/-30%, all others +/-10%.

Magnet Track

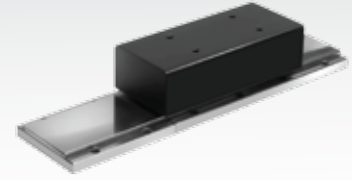
Motor Coil

TRACK	L (mm)	WEIGHT(kg)
TL120	120	1.7
TL240	240	3.5
TL480	480	7.0

COIL	A (mm)	WEIGHT(kg)
PIXA530-047-110	522	18.00
PIXA690-047-110	690	25.00

PIXA 135 / PIXA 160

- Iron Core Motor
- Peak force to 9827N, Continuous force to 2457N
- Integrated with Hall Sensor (Optional)
- Ideal for high force



PIXA SERIES
IRON CORE LINEAR MOTOR

SPECIFICATION		MODEL	
		PIXA690-047-135	PIXA690-047-160
Connection Type		S	S
Performance	Unit		
Peak Force	N	8196	9827
Continuous Force @ 105°C*	N	2049	2457
Continuous Stall Force @ 105°C*	N	1449	1737
Peak Power @ 105°C	W	9062	10506
Continuous Power @ 105°C*	W	566.4	656.6
Electrical			
Peak Current	A ^{pk}	76.75	92.02
Continuous Current @ 105°C*	A ^{pk}	19.19	23.01
Continuous Stall Current @ 105°C*	Arms	13.57	16.27
Force Constant	N/A ^{pk}	106.8	106.8
Back EMF Constant	V ^{pk} /m/s	122.8	122.8
Coil Resistance L-L @ 25°C	ohm	1.55	1.25
Coil Resistance L-L @ 105°C*	ohm	2.05	1.65
Inductance L-L @ 1kHz	mH	29	26
Motor Constant @ 105°C*	N/√W	86.1	95.9
Electrical Cycle Length	mm	48	48
Max. Terminal Voltage	V _{dc}	600	600
Thermal			
Thermal Resistance @ 105°C*	°C/W	0.14	0.12
Max. Coil Temperature	°C	125	125
Mechanical			
Coil Weight	kg	31	38
Attractive Force	N	9826	11790

Notes: 1. A^{pk} = 1.414 * Arms; V^{pk} = 1.414 * Vrms. 2. * Ambient temperature 25°C, natural convection, no heat sink. 3. Specifications tolerance – inductance +/-30%, all others +/-10%.

PIXA 135

Magnet Track

Motor Coil

L = 500 mm
Cable OD = 9 mm

Standard Magnet Track

TRACK	L (mm)	WEIGHT(kg)
TL120	120	2.1
TL240	240	4.3
TL480	480	8.6

Motor Coil

COIL	A (mm)	WEIGHT(kg)
PIXA690-047-135	690	31.00

PIXA 160

Magnet Track

Motor Coil

L = 500 mm
Cable OD = 9 mm

Standard Magnet Track

TRACK	L (mm)	WEIGHT(kg)
TL120	120	2.5
TL240	240	5.1
TL480	480	10.2

Motor Coil

COIL	A (mm)	WEIGHT(kg)
PIXA690-047-160	690	38.00

POWER AND HALL CABLE OPTION

PIXA110-023-030-S-TC-2.0-9NF-HC

POWER CABLE OPTIONS

NF

9NF

P1	M1	Grey
P2	M1	Grey (Jump)
P3	M3	Black
P4	M3	Black (Jump)
P5	M2	Brown
P6	M2	Brown (Jump)
P7	Temp sensor 1	Orange / Black
P8	Temp sensor 2	Orange
P9	PE	Yellow & Green
Case	Shield	Shield

HALL CABLE OPTIONS

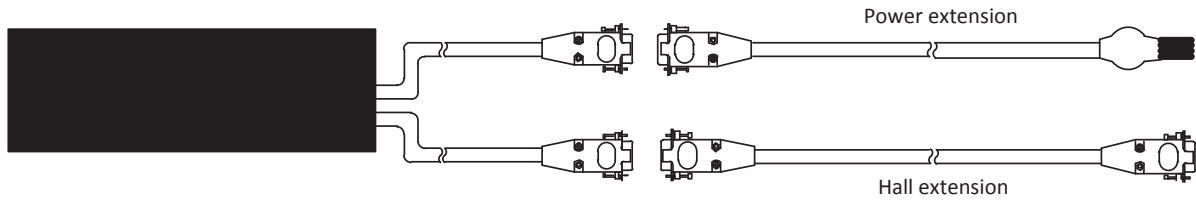
H

HC

P1	Hall A	White
P2	Hall B	Green
P3	Hall C	Blue
P4	5V	Red
P5	0V	Black

PIXA SERIES EXTENSION CABLE

Connection example: PIXA110-□-□-□-□-□-9NF-HC



Extension Cable	Part Number											
<p>Power Extension Cable</p>	CBL_EXT_PWR_IX_REV01_X.X											
<p>Hall Sensor Extension Cable</p>	CBL_EXT_HALL_PIX_REV00_X.X											
<p>Encoder Extension Cable</p> <table border="1"> <thead> <tr> <th>CABLE</th> <th>CABLE LENGTH (X.X)</th> </tr> </thead> <tbody> <tr> <td>00 RGH41 Digital</td> <td rowspan="2">0.5 0.5 meter (standard)</td> </tr> <tr> <td>00A RGH41 Analog</td> </tr> <tr> <td>01 RH200 Digital</td> <td>1.0 1.0 meter</td> </tr> <tr> <td>01B RH200 Analog</td> <td>2.0 2.0 meter</td> </tr> <tr> <td>05 ATOM Interface Ri Digital</td> <td>3.0 3.0 meter</td> </tr> </tbody> </table>	CABLE	CABLE LENGTH (X.X)	00 RGH41 Digital	0.5 0.5 meter (standard)	00A RGH41 Analog	01 RH200 Digital	1.0 1.0 meter	01B RH200 Analog	2.0 2.0 meter	05 ATOM Interface Ri Digital	3.0 3.0 meter	CBL_EXT_REN00_REV03_X.X
	CABLE	CABLE LENGTH (X.X)										
	00 RGH41 Digital	0.5 0.5 meter (standard)										
	00A RGH41 Analog											
	01 RH200 Digital	1.0 1.0 meter										
01B RH200 Analog	2.0 2.0 meter											
05 ATOM Interface Ri Digital	3.0 3.0 meter											
	CBL_EXT_REN00A_REV03_X.X											
	CBL_EXT_REN01_REV02_X.X											
	CBL_EXT_REN01B_REV02_X.X											
	CBL_EXT_REN05_REV00_X.X											