Linear motor — NL080Q

Revision	0	11/11/2017

Motor Specification

		NL080Q
Peak Force [6]	N	24
Continuous stall force (passive cooling)	N	5,4
Max. velocity [1][3]	m/s	6,00
Max. acceleration [2][3]	m/s^2	438,64
Continuous stall force (with heatsink plate)	N	--
Continuous stall force (fan cooling)	N	--
Continuous stall force (liquid cooling) [7]	N	--

Electrical Specification

		NL080Q
Nominal DC-Link Voltage	Vdc	48
Maximum DC-Link Voltage	Vdc	80
Peak current [6]	Arms	6,06
Continuous stall current (passive cooling)	Arms	1,36
Continuous stall current (with heatsink plate)	Arms	--
Continuous stall current (fan cooling)	Arms	--
Continuous stall current (liquid cooling) [7]	Arms	--
Force constant	N/Arms	4,00
Back EMF constant (ph-ph) [4]	Vpk/(m/s)	3,25
Back EMF constant (ph-ph)	Vrms/(m/s)	2,3
Resistance @ 25°C (ph-ph) [4]	Ohm	9,72
Resistance @ 135°C (ph-ph) [4]	Ohm	13,9
Inductance (ph-ph) [4]	mH	1,2
Electrical time constant	ms	0,123
Motor constant	N/√W	1,387

Thermal Specification IC40

		NL080Q
Max. winding temperature	°C	130
Max. Duration with peak current	s	1
Max. Power dissipation [5]	W	15,30
Thermal resistance (case-ambient)	°C/W	2,420
Thermal resistance (winding-case)	°C/W	4,014
Thermal resistance (winding-ambient) [5]	°C/W	6,400
Thermal time constant [5]	s	537

Mechanical Specification

		NL080X
Stator length	mm	118
Stator flange dimension	mm	20x40
Stator mass	kg	0,116
Slider length (min/max)	mm	--
Slider diameter	mm	8
Slider mass	g/m	0,35
Magnetic Period (Polar pitch, N to N)	mm	30

Encoder Specification

		NL080X
Encoder Type		SIN/COS 1 Vpp
Encoder power supply		5 V
Resolution		1 sine period per polar pitch

(1) Based on triangular move over 360mm stroke without payload and without taking in account voltage limits - (2) Based on a 30 mm stroke, without payload - (3) The specifications and data may be subject to change depending of the load – (4) Manufacturing data ±10% - (5) In compliance with IEC 60034-1 – (6) Service type S3, duty cycle 5% (7) Estimated Value

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Linear motor		NL080X
Revision	**0**	**11/11/2017**

Motor Specification

		NL080X
Peak Force [6]	N	44
Continuous stall force (passive cooling)	N	9,8
Max. velocity [1][3]	m/s	6,00
Max. acceleration [2][3]	m/s^2	572,25
Continuous stall force (with heatsink plate)	N	--
Continuous stall force (fan cooling)	N	--
Continuous stall force (liquid cooling) [7]	N	--

Electrical Specification

		NL080X
Nominal DC-Link Voltage	Vdc	48
Maximum DC-Link Voltage	Vdc	80
Peak current [6]	Arms	10,92
Continuous stall current (passive cooling)	Arms	2,44
Continuous stall current (with heatsink plate)	Arms	--
Continuous stall current (fan cooling)	Arms	--
Continuous stall current (liquid cooling) [7]	Arms	--
Force constant	N/Arms	4,00
Back EMF constant (ph-ph) [4]	Vpk/(m/s)	1,63
Back EMF constant (ph-ph)	Vrms/(m/s)	1,15
Resistance @ 25°C (ph-ph) [4]	Ohm	4,86
Resistance @ 135°C (ph-ph) [4]	Ohm	7,0
Inductance (ph-ph) [4]	mH	0,6
Electrical time constant	ms	0,123
Motor constant	N/√W	--

Thermal Specification IC40

		NL080X
Max. winding temperature	°C	130
Max. Duration with peak current	s	1
Max. Power dissipation [5]	W	--
Thermal resistance (case-ambient)	°C/W	--
Thermal resistance (winding-case)	°C/W	--
Thermal resistance (winding-ambient) [5]	°C/W	--
Thermal time constant [5]	s	--

Mechanical Specification

		NL080X
Stator length	mm	178
Stator flange dimension	mm	20x40
Stator mass	kg	0,232
Slider length (min/max)	mm	--
Slider diameter	mm	8
Slider mass	g/m	0,35
Magnetic Period (Polar pitch, N to N)	mm	30

Encoder Specification

		NL080X
Encoder Type		SIN/COS 1 Vpp
Encoder power supply		5 V
Resolution		1 sine period per polar pitch

(1) Based on triangular move over 360mm stroke without payload and without taking in account voltage limits - (2) Based on a 30 mm stroke, without payload - (3) The specifications and data may be subject to change depending of the load – (4) Manufacturing data ±10% - (5) In compliance with IEC 60034-1 – (6) Service type S3, duty cycle 5% (7) Estimated Value

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Linear motor		NL120Q
Revision	**0**	**11/11/2017**

Motor Specification

		NL120Q
Peak Force [6]	N	95
Continuous stall force (passive cooling)	N	21,2
Max. velocity [1][3]	m/s	6,00
Max. acceleration [2][3]	m/s^2	540,02
Continuous stall force (with heatsink plate)	N	--
Continuous stall force (fan cooling)	N	--
Continuous stall force (liquid cooling) [7]	N	--

Electrical Specification

		NL120Q
Nominal DC-Link Voltage	Vdc	48
Maximum DC-Link Voltage	Vdc	80
Peak current [6]	Arms	7,90
Continuous stall current (passive cooling)	Arms	1,77
Continuous stall current (with heatsink plate)	Arms	--
Continuous stall current (fan cooling)	Arms	--
Continuous stall current (liquid cooling) [7]	Arms	--
Force constant	N/Arms	12,00
Back EMF constant (ph-ph) [4]	Vpk/(m/s)	9,79
Back EMF constant (ph-ph)	Vrms/(m/s)	6,92
Resistance @ 25°C (ph-ph) [4]	Ohm	5,96
Resistance @ 135°C (ph-ph) [4]	Ohm	8,5
Inductance (ph-ph) [4]	mH	3,02
Electrical time constant	ms	0,507
Motor constant	N/√W	3,451

Thermal Specification IC40

		NL120Q
Max. winding temperature	°C	130
Max. Duration with peak current	s	1
Max. Power dissipation [5]	W	37,70
Thermal resistance (case-ambient)	°C/W	0,770
Thermal resistance (winding-case)	°C/W	1,740
Thermal resistance (winding-ambient) [5]	°C/W	2,520
Thermal time constant [5]	s	1147

Mechanical Specification

		NL120Q
Stator length	mm	185
Stator flange dimension	mm	35x63
Stator mass	kg	0,9
Slider length (min/max)	mm	--
Slider diameter	mm	12
Slider mass	g/m	0,78
Magnetic Period (Polar pitch, N to N)	mm	60

Encoder Specification

		NL120Q
Encoder Type		SIN/COS 1 Vpp
Encoder power supply		5 V
Resolution		1 sine period per polar pitch

(1) Based on triangular move over 360mm stroke without payload and without taking in account voltage limits - (2) Based on a 30 mm stroke, without payload - (3) The specifications and data may be subject to change depending of the load – (4) Manufacturing data ±10% - (5) In compliance with IEC 60034-1 – (6) Service type S3, duty cycle 5% (7) Estimated Value

Linear motor		NL120X
Revision	**0**	**11/11/2017**

Motor Specification

		NL120X
Peak Force [6]	N	171
Continuous stall force (passive cooling)	N	38,1
Max. velocity [1][3]	m/s	6,00
Max. acceleration [2][3]	m/s^2	633,94
Continuous stall force (with heatsink plate)	N	--
Continuous stall force (fan cooling)	N	--
Continuous stall force (liquid cooling) [7]	N	--

Electrical Specification

		NL120X
Nominal DC-Link Voltage	Vdc	48
Maximum DC-Link Voltage	Vdc	80
Peak current [6]	Arms	14,22
Continuous stall current (passive cooling)	Arms	3,18
Continuous stall current (with heatsink plate)	Arms	--
Continuous stall current (fan cooling)	Arms	--
Continuous stall current (liquid cooling) [7]	Arms	--
Force constant	N/Arms	12,00
Back EMF constant (ph-ph) [4]	Vpk/(m/s)	4,89
Back EMF constant (ph-ph)	Vrms/(m/s)	3,46
Resistance @ 25°C (ph-ph) [4]	Ohm	2,98
Resistance @ 135°C (ph-ph) [4]	Ohm	4,3
Inductance (ph-ph) [4]	mH	1,51
Electrical time constant	ms	0,507
Motor constant	N/√W	--

Thermal Specification IC40

		NL120X
Max. winding temperature	°C	130
Max. Duration with peak current	s	1
Max. Power dissipation [5]	W	--
Thermal resistance (case-ambient)	°C/W	--
Thermal resistance (winding-case)	°C/W	--
Thermal resistance (winding-ambient) [5]	°C/W	--
Thermal time constant [5]	s	--

Mechanical Specification

		NL120X
Stator length	mm	305
Stator flange dimension	mm	35x63
Stator mass	kg	0,9
Slider length (min/max)	mm	--
Slider diameter	mm	12
Slider mass	g/m	0,78
Magnetic Period (Polar pitch, N to N)	mm	60

Encoder Specification

		NL120X
Encoder Type		SIN/COS 1 Vpp
Encoder power supply		5 V
Resolution		1 sine period per polar pitch

(1) Based on triangular move over 360mm stroke without payload and without taking in account voltage limits - (2) Based on a 30 mm stroke, without payload - (3) The specifications and data may be subject to change depending of the load – (4) Manufacturing data ±10% - (5) In compliance with IEC 60034-1 – (6) Service type S3, duty cycle 5% (7) Estimated Value