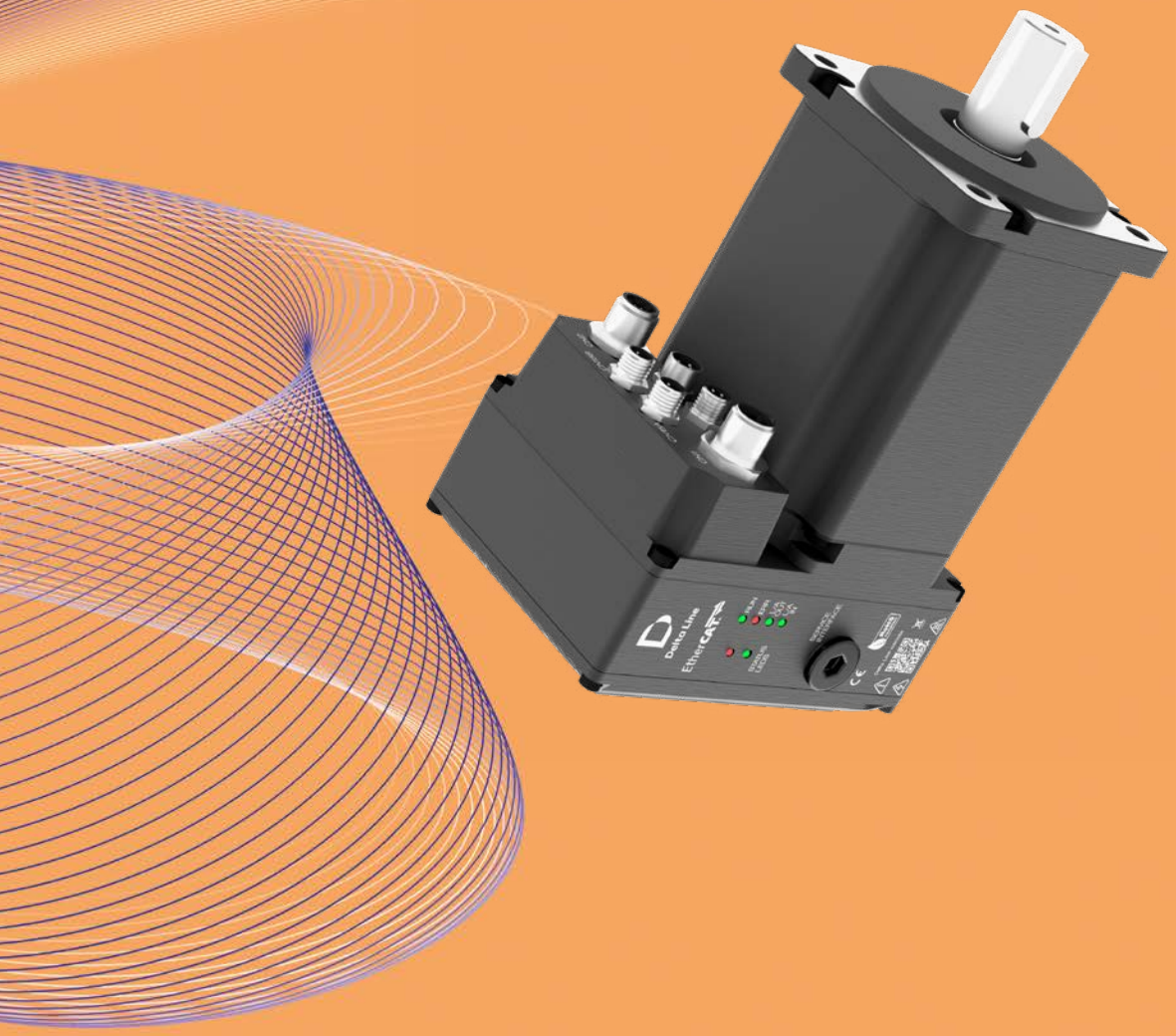
Delta Line

Moving together



Motors with integrated Controller

2024 - Product Catalogue

Stepper motors
with Motion
controller

p.27

Servo motors
with Motion
controller

p.23

BLDC motors
with Speed
controller

p.7

BLDC motors
with Motion
controller

p.15

Motors with integrated Controller

* Rated Torque
** Holding Torque

Term	
N. of pole	Areas of a motor where a magnetic pole is generated either by a permanent magnet or by passing current through the coils of a winding.
N. of phase	A group of electrically connected coils.
Rated Voltage	The voltage at which rated torque is generated with the motor at ambient temperature.
Operating Voltage	Describes the range of the permissible supply voltage
Rated Speed	The approximate motor speed at its rated torque point.
Rated Torque	The maximum torque, at rated speed, the motor can produce on a continuous basis, without exceeding the thermal rating of the motor.
Max. Peak Torque	The maximum torque a motor can produce for short periods of time, before irreversible demagnetization of the motor's magnets occurs.
Torque constant	The ratio of a motor's output torque to the motor's input power
Rated Current	The approximate amount of current the motor will draw at its rated torque point.
Max. Peak Current	The current drawn by the motor when delivering peak torque
No-Load Current	The current consumption of the motor at rated voltage and under no-load conditions. This value varies proportionally to speed and is influenced by temperature
Line to Line resistance	This is the phase resistance measured for the completed motor at room temperature. It includes solder, wire and (if present) connector resistances. In motors with very low resistance, the line to line resistance may differ significantly from the internal resistance.
Line to Line Inductance	This is the motor phase inductance measured with an inductance meter at 1000 Hz.
Rotor Inertia	Is the mass moment of inertia of the rotor, based on the axis of rotation.
Length	Total motor length.
Weight	Total motor mass.
Hall Effect angle	Phase angle at which hall sensors are positioned from each other.
Shaft run out	Is the geometric tolerance that specifies the run-out fluctuation of a target's feature when the target (part) is rotated on an axis (specified straight line).
Insulation class	The electrical insulation system for wires and other wire-wound electrical components is divided into different classes by temperature and temperature rise. The electrical insulation system is sometimes referred to as insulation class or thermal classification.
IP rate	IP (or "Ingress Protection") ratings are defined in international standard EN 60529 (British BS EN 60529:1992, European IEC 60509:1989). They are used to define levels of sealing effectiveness of electrical enclosures against intrusion from foreign bodies (tools, dirt etc) and moisture.
Radial Play	The shaft displacement perpendicular to the shaft due to a side force applied perpendicular to the shaft axis.
Axial Play	Axial shaft displacement occurring during a reversal of an axial force on the shaft.
Max. Radial force	Maximum force that can be applied to the shaft in the radial direction (any direction perpendicular to the motor shaft axis).
Max. Axial force	Maximum force that can be applied to the shaft in the axial direction (in the same axis as or parallel to the motor shaft axis).
Dielectric strength	A dielectric test (also known as hipot or high potential test) is performed on all motors under 500V phases to the housing and during 5 seconds after voltage ramp up. Maximum allowed leakage is 1mA
Insulation resistance	The measurement of insulation resistance is carried out by means of a megohmmeter – high resistance range ohmmeter. DC voltage is applied between the windings and the ground of the motor.

Glossary

Delta Line's motors with integrated drive and control electronics have provided machine builders with unprecedented design flexibility thanks to their compact size, high efficiency, and excellent reliability. Available as Brushless DC, Servo motors and Stepper motors, these smart motors eliminate the need for a separate drive and therefore the need to run motor power and feedback cables to an external controller. The significant reduction in cabling also simplifies integration and improves efficiency, reliability and electrical noise, which helps to keep encoder signals "clean," free from electromagnetic interference and provides a complete motor solution in a single, easy-to-integrate device.

The compact integration of the speed controller reduces space requirements and simplifies installation and start-up, opening a wide range of application areas. The integrated electronics facilitate speed control by means of a PID controller. The direction of rotation can be changed via a separarte switching input.

BLDC motor with integrated Speed Controller

Our slotted BLDC motors with integrated controller offer the compactness of a standard motor together with all the features of our drives. These motors have digital inputs and outputs and an analogue input, and can be also equipped with several Fieldbuses such as: CANopen, Modbus RTU, EtherCAT, Modbus TCP/IP, Profinet, Powerlink, IO-Link, Ethernet/IP. To reach top performances, a single turn magnetic encoder can also be fully integrated. Several of our models are IP65 rated as standard so that they can be used in a wide variety of environments without concern.

BLDC motor with integrated Motion Controller

Our Servo Motors with integrated controller offer the compactness of a standard Servo motor together with all the features of our drives. The Servo motors use rare earth neodymium-iron-boron permanent magnet rotors and provide features of low inertia, high torque density, high peak torques, low noise and low current consumption. These motors have digital inputs and outputs and an analogue input and can be also equipped with RS485 Modbus-RTU, CANopen, Modbus-TCP or Ethercat fieldbuses. All of our models are IP65 rated as standard so that they can be used in a wide variety of environments without concern.

Servo motors with integrated Motion Controller

Our stepper motors with integrated electronics use stepless control technology for 65,536 microsteps per revolution and offer encoder options such as magnetic incremental, single-turn absolute, or multi-turn absolute, to meet a wide range of applications. Communication options include CANopen, Modbus RTU, EtherCAT, Modbus TCP/IP, Profinet, Powerlink, IO-Link and Ethernet/IP, so the motors can be easily connected to any industrial network.

With a smart stepper motor, designers and machine builders can achieve cost savings of 20 to 40 percent over a conventional stepper motor with separate drive and controller. Several of our models are IP65 rated, so they can be used in a wide range of environments where moisture or water spray is present.

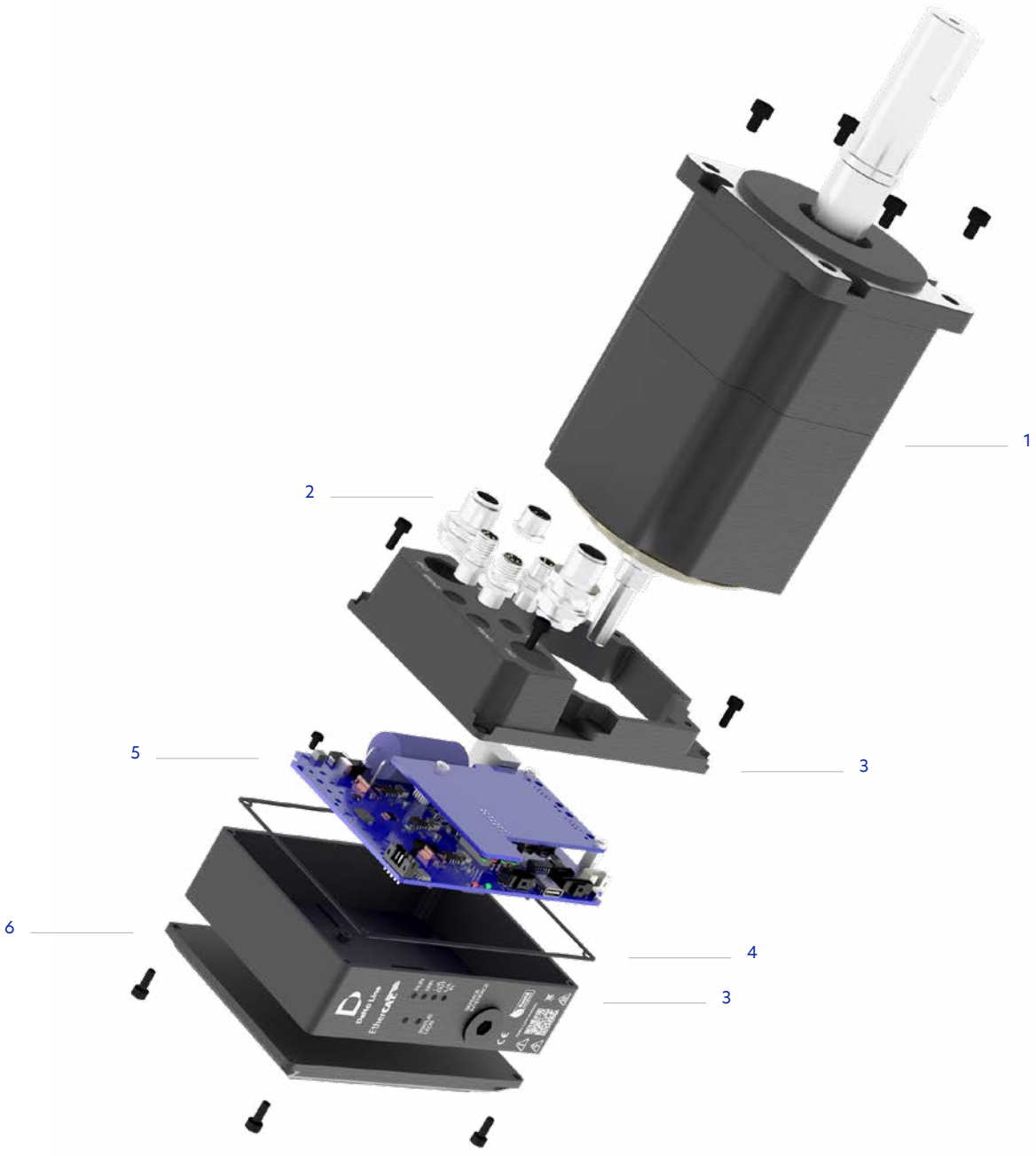
Stepper motor with integrated Motion Controller

All our motors with Motion Controller are offered with two software: DL Studio and DL Space. DL Studio is a configuration and test tool that lets the user set all the objects inside the drive and move the motor from the PC while seeing the motor response, in terms of current, speed and other information. DL Space contains all the features of DL Studio, but lets the user write custom applications for the drive using a simple and user-friendly programming language. The motor with Motion Controller can be connected to the PC through a specific Interface kit.

Software

Technical introduction

Composition - Servo motor with Motion Controller	
1	Motor + Encoder
2	Connectors
3	Case
4	Gasket
5	Drive
6	Heat sink



Brushless DC motors

with Speed controller

Advantages at a glance
Space saving, minimal wiring
Simple Speed and Direction control
High torque

The compact integration of the speed controller reduces space requirements and simplifies installation and start-up, opening a wide range of application areas. The integrated electronics facilitate speed control by means of a PID controller. The direction of rotation can be changed via a separate switching input.

Brushless DC motors with Speed controller	Torque* (Nm)	
16EC33P-2W	0,002	8
36CBL-IE	0,016...0,08	9
42BL-IE - square	0,063...0,25	10
42CBL60-IE	0,068	11
42RBL60-IE	0,08	12
57BL-IE	0,11...0,33	13

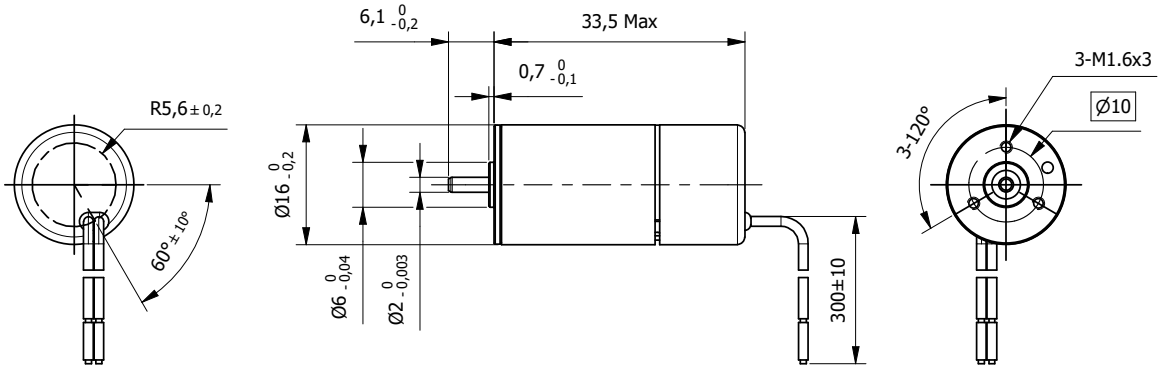
* Rated Torque

Brushless Slotless Motor 16EC33P-2W

with Speed Controller

Ø 16mm

0,002Nm



Specification				
	Model		...7500	...8000
1	Rated Voltage	V	6	12
2	Rated Speed	rpm	7510	8080
3	Rated Torque	mNm	2,19	2,26
4	Stall Torque	mNm	5,25	5,76
5	Torque Constant	mNm/A	3,87	7,73
6	Rated Current	A	0,714	0,37
7	Stall Current	A	1,44	0,801
8	No-load Current	mA	149	72,7
9	No-load Speed	rpm	13400	13800
10	Speed Range	rpm	11300-20000	5360-17400
11	Rotor Inertia	gcm2	0,428	0,428
12	Max. Efficiency	%	46,4	49
13	Mechanical Time Constant	ms	11,6	11,3
14	Length (L)	mm	33,5	33,5
15	Weight	g	32	32

Characteristics	
Item	
Supply Voltage +Vcc	+5 to +15V
Current Limitation	1,6A ±15%
Type of control	speed
Ambient Temperature	-40°C to +85°C
Max. Electronics Temperature	+100°C
Max. Speed	20000rpm
Radial play	preloaded
Axial play	0 to 0,14mm
Max. Radial force (5mm from flange)	6N
Max. Axial force	1N
Max. Force for Press fit	18N

Connection			
Lead n°	Color	Gauge	Function
1	Red	UL1569 AWG26/7	+Vcc | Supply voltage +5 to +15V
2	Black	|	GND | Ground system

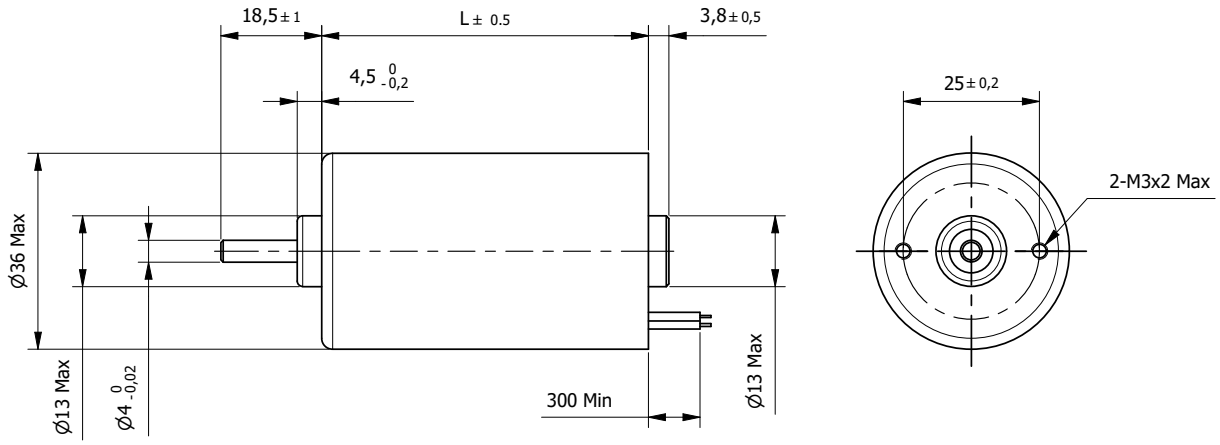
Attention: operating voltage Vcc > 18VDC will destroy the electronics

Brushless Slotted Motor 36CBL-IE

with Speed Controller

Ø 36mm

0,016 - 0,08Nm



Specification					
	Model		36CBL30-IE	36CBL40-IE	36CBL57-IE	36CBL60-IE
1	n° of Pole		8	8	8	8
2	n° of Phase		3	3	3	3
3	Rated Voltage	V	24	24	24	24
4	Rated Speed	rpm	4800	4800	4500	4800
5	Rated Torque	Nm	0,016	0,035	0,07	0,08
6	Max. Peak Torque	Nm	0,05	0,11	0,21	0,24
7	Torque Constant	Nm/A	0,034	0,037	0,041	0,038
8	Rated Current	A	0,47	0,95	1,71	2,11
9	Max. Peak Current	A	1,4	3	5,3	6,5
10	No-Load Current	mA	120	230	260	200
11	Line to Line Resistance	Ω	7,8	2,7	1,3	0,9
12	Line to Line Inductance	mH	5,5	2,6	1,6	1,3
13	Rotor Inertia	gcm2	6	12	27	30
14	Length (L)	mm	30	40	57	60
15	Weight	Kg	0,12	0,18	0,25	0,3

Characteristics	
Item	
Hall Effect Angle	120°
Shaft run out	0,025mm
Insulation Class	B
Protection Class	IP40
Radial play (450g load)	0,02mm
Axial play (450g load)	0,08mm
Max. Radial force (10mm from flange)	15N
Max. Axial force	10N
Dielectric strength (for 1 sec.)	600 VAC
Insulation Resistance (min. 500 VDC)	100 Mohm

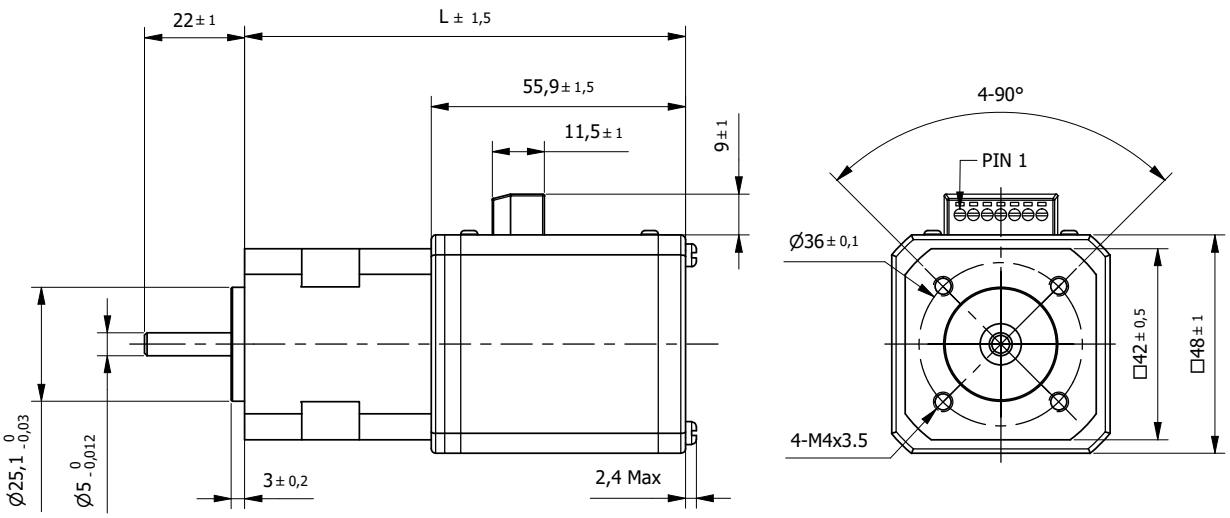
Connection			
Pin n°	Color	Gauge	Function
1	Red	UL1430 AWG22	VCC +24VDC
2	Black	|	GND
3	Green	UL1430 AWG26	CW/CCW Direction
4	White	|	PWM speed control
5	Blue	|	Brake
6	Yellow	UL1332 AWG22	Tacho Out

Brushless Slotted Motor 42BL-IE

with Speed Controller

□ 42mm

0,063 - 0,25Nm



Specification						
	Model		42BL41-IE	42BL61-IE	42BL81-IE	42BL100-IE
1	n° of Pole		8	8	8	8
2	n° of Phase		3	3	3	3
3	Rated Voltage	V	24	24	24	24
4	Rated Speed	rpm	4000	4000	4000	4000
5	Rated Torque	Nm	0,063	0,125	0,185	0,25
6	Max. Peak Torque	Nm	0,19	0,37	0,56	0,74
7	Torque Constant	Nm/A	0,035	0,036	0,036	0,036
8	Rated Current	A	1,79	3,47	5,14	6,94
9	Max. Peak Current	A	6	10,8	15,5	21,7
10	No-Load Current	mA	220	250	340	450
11	Line to Line Resistance	Ω	1,5	0,8	0,43	0,3
12	Line to Line Inductance	mH	2,1	1,2	0,7	0,5
13	Rotor Inertia	gcm2	24	48	72	96
14	Length (L)	mm	96	116	137	157
15	Weight	Kg	0,5	0,65	0,85	1

Characteristics	
Item	
Hall Effect Angle	120°
Shaft run out	0,025mm
Insulation Class	B
Protection Class	IP40
Radial play (450g load)	0,02mm
Axial play (450g load)	0,08mm
Max. Radial force (10mm from flange)	28N
Max. Axial force	10N
Dielectric strength (for 1 sec.)	500 VDC
Insulation Resistance (min. 500 VDC)	100 Mohm

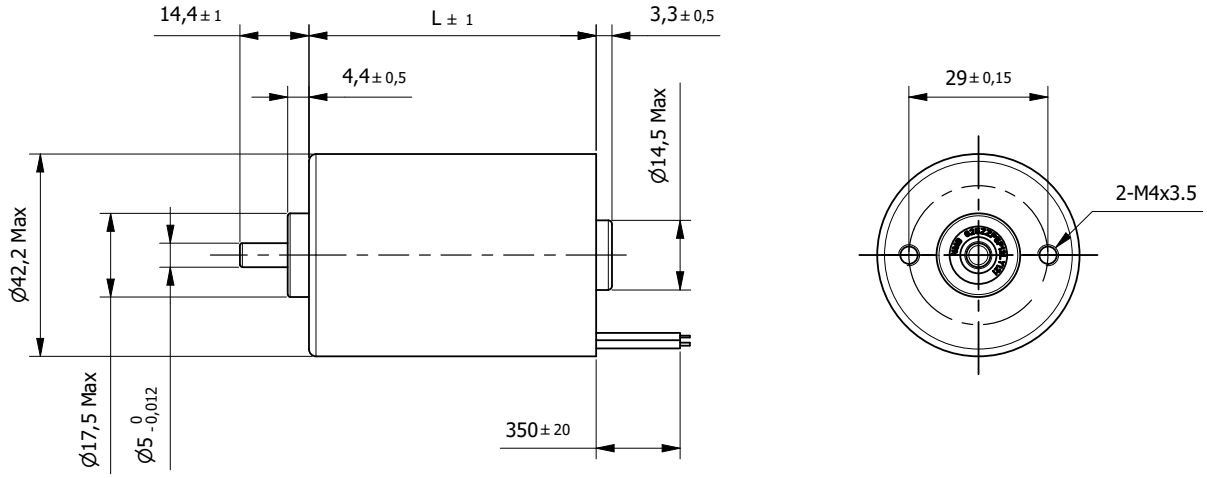
Connection	
Pin n°	Function
1	+5V | Voltage output
2	F/R | Rotation direction
3	SV | Speed voltage 0/+5VDC
4	PG | Speed Pulse output TTL.24 pulse/rev.
5	GND | Common ground system
6	GND | Common ground system
7	+Vp | DC power input +24VDC

Brushless Slotted Motor 42CBL60-IE

with Speed Controller

Ø 42mm

0,068Nm



Specification			
	Model		42CBL60-IE
1	n° of Pole		4
2	n° of Phase		3
3	Rated Voltage	V	24
4	Rated Speed	rpm	5900
5	Rated Torque	Nm	0,068
6	Max. Peak Torque	Nm	0,2
7	Torque Constant	Nm/A	0,032
8	Rated Current	A	2,13
9	Max. Peak Current	A	6,6
10	No-Load Current	mA	250
11	Line to Line Resistance	Ω	0,82
12	Line to Line Inductance	mH	0,75
13	Rotor Inertia	gcm2	44
14	Length (L)	mm	60
15	Weight	Kg	0,35

Characteristics	
Item	
Hall Effect Angle	120°
Shaft run out	0,025mm
Insulation Class	B
Protection Class	IP40
Radial play (450g load)	0,02mm
Axial play (450g load)	0,08mm
Max. Radial force (10mm from flange)	15N
Max. Axial force	10N
Dielectric strength (for 1 min.)	500 VDC
Insulation Resistance (min. 500 VDC)	100 Mohm

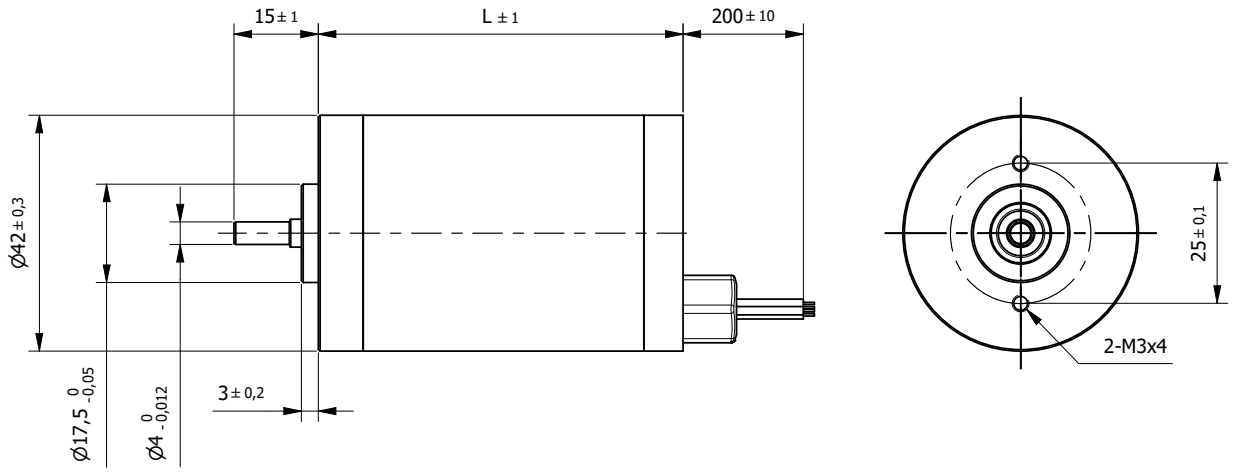
Connection			
Lead n°	Color	Gauge	Function
1	Red	UL1430 AWG22	VCC +24VDC
2	Black	|	GND
3	Green	UL1430 AWG26	CW/CCW Direction
4	White	|	PWM speed control
5	Blue	|	Brake
6	Yellow	UL1332 AWG22	Tacho Out

Brushless Slotted Motor 42RBL60-IE

with Speed Controller

Ø 42mm

0,056Nm



Specification			
	Model		42RBL60-IE
1	n° of Pole		8
2	n° of Phase		3
3	Rated Voltage	V	24
4	Rated Speed	rpm	4200
5	Rated Torque	Nm	0,056
6	Max. Peak Torque	Nm	0,105
7	Torque Constant	Nm/A	0,041
8	Rated Current	A	1,35
9	Max. Peak Current	A	3
10	No-Load Current	A	<0,4
11	Line to Line Resistance	Ω	1,6
12	Line to Line Inductance	mH	1,94
13	Rotor Inertia	gcm2	33
14	Length (L)	mm	65
15	Weight	Kg	0,4

Characteristics	
Item	
Hall Effect Angle	120°
Shaft run out	0,025mm
Insulation Class	B
Protection Class	IP40
Radial play (450g load)	0,02mm
Axial play (450g load)	0,08mm
Max. Radial force (10mm from flange)	15N
Max. Axial force	10N
Dielectric strength (for 1 min.)	500 VDC
Insulation Resistance (min. 500 VDC)	100 Mohm

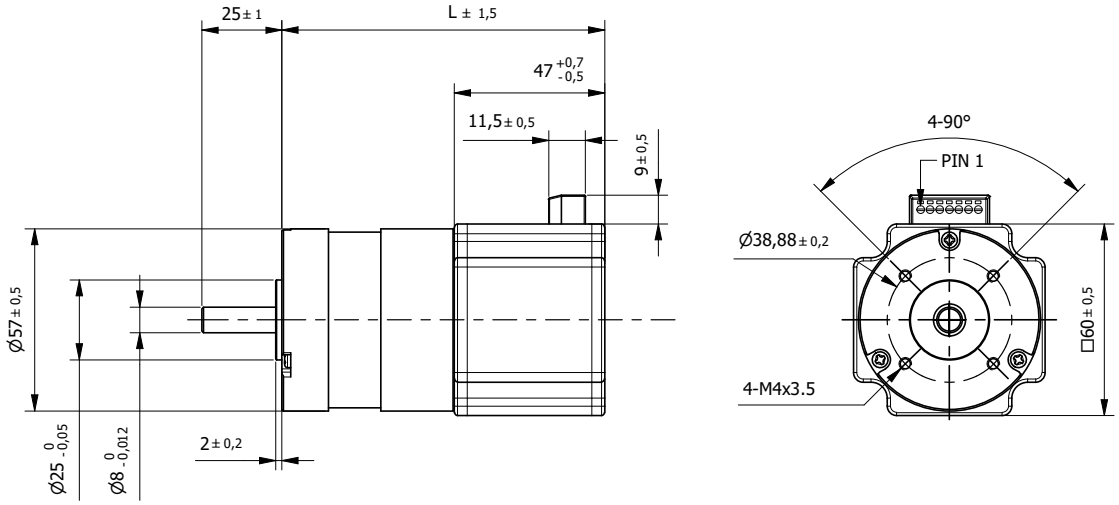
Connection		
Color	Gauge	Function
Red	UL1007 AWG22	VCC +
Black	|	GND
White	|	CW/CCW Direction
Blue	|	SV Speed Control
Yellow	|	Tacho out

Brushless Slotted Motor 57BL-IE

with Speed Controller

Ø 57mm

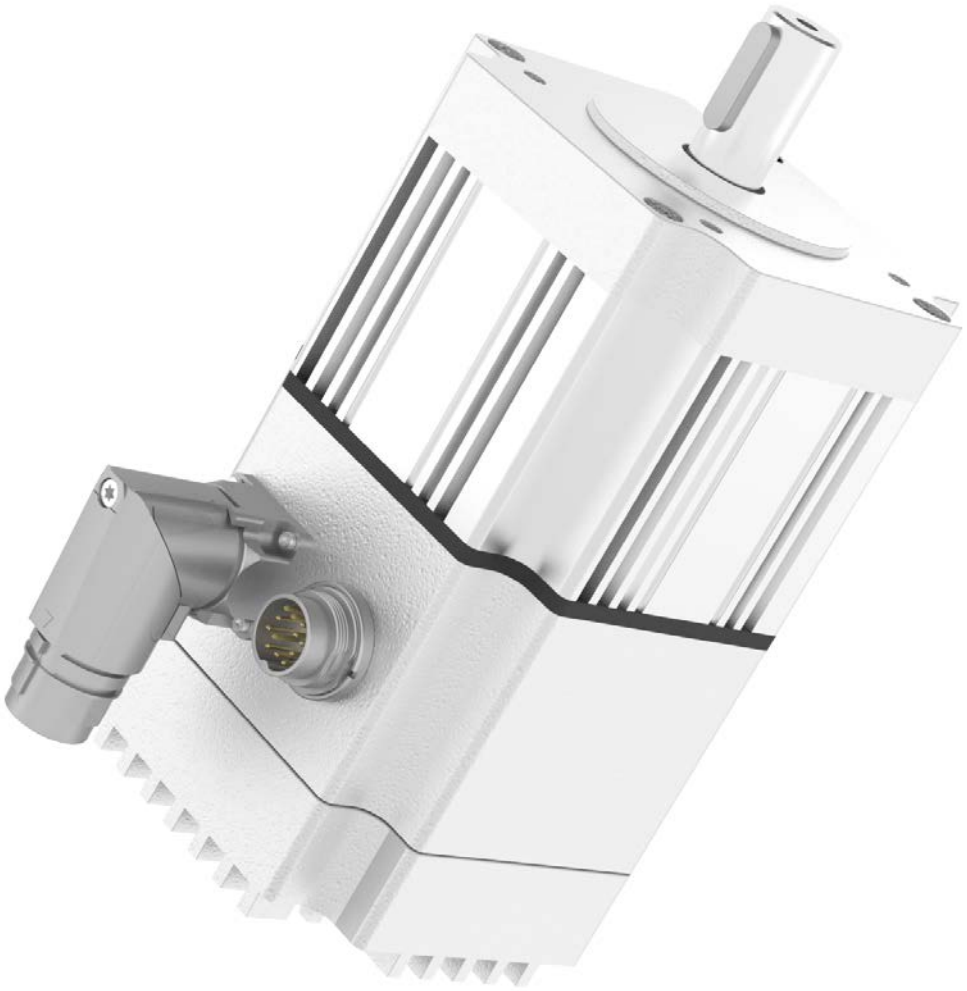
0,11 - 0,33Nm



Specification					
	Model		57BL54-IE	57BL74-IE	57BL94-IE
1	n° of Pole		4	4	4
2	n° of Phase		3	3	3
3	Rated Voltage	V	36	36	36
4	Rated Speed	rpm	4000	4000	4000
5	Rated Torque	Nm	0,11	0,22	0,33
6	Max. Peak Torque	Nm	0,39	0,7	1
7	Torque Constant	Nm/A	0,061	0,06	0,065
8	Rated Current	A	1,8	3,67	5,08
9	Max. Peak Current	A	6,8	12	16
10	No-Load Current	mA	300	400	450
11	Line to Line Resistance	Ω	1,5	0,58	0,45
12	Line to Line Inductance	mH	4,4	2	1,5
13	Rotor Inertia	gcm2	75	119	173
14	Length (L)	mm	101	121	141
15	Weight	Kg	0,67	0,9	1,2

Characteristics	
Item	
Hall Effect Angle	120°
Shaft run out	0,025mm
Insulation Class	B
Protection Class	IP40
Radial play (460g load)	0,025mm
Axial play (4000g load)	0,025mm
Max. Radial force (10mm from flange)	75N
Max. Axial force	15N
Dielectric strength (for 1 sec.)	600 VAC
Insulation Resistance (min. 500 VDC)	100 Mohm

Connection	
Pin n°	Function
1	+Vp | DC power input +36VDC
2	GND | DC power input GND
3	GND | Common ground system
4	PG | Speed pulse output TTL.6 pulse/rev.
5	SV | Reference speed voltage 0/+5V
6	F/R | Rotation direction
7	+5V | Voltage output



Brushless DC motors

with Motion controller

Advantages at a glance
Compact construction
Integrated Motion, Speed and Current control
Parametrization and programming with software

Our slotted BLDC motors with integrated controller offer the compactness of a standard motor together with all the features of our drives. These motors have digital inputs and outputs and an analogue input, and can be also equipped with several Fieldbuses such as: CANopen, Modbus RTU, EtherCAT, Modbus TCP/IP, Profinet, Powerlink, IO-Link, Ethernet/IP. To reach top performances, a single turn magnetic encoder can also be fully integrated. Several of our models are IP65 rated as standard so that they can be used in a wide variety of environments without concern.

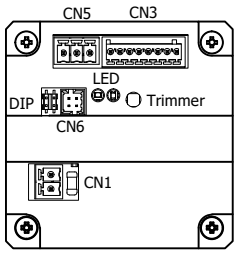
* Rated Torque

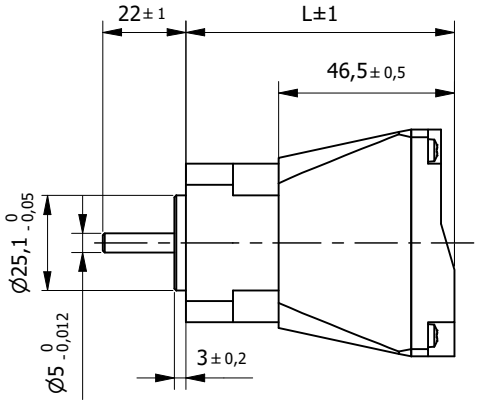
Brushless DC Motor IBS042

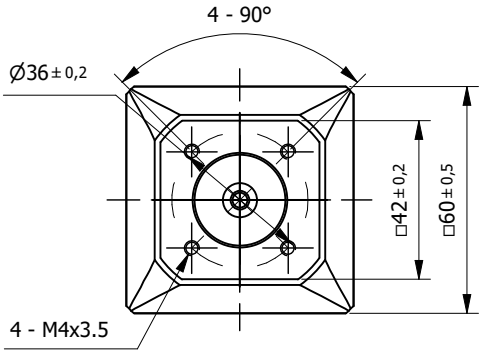
with Motion Controller

□ 42mm

0,062 - 0,25Nm







Specification

	Model		...0026N	...0050N	...0074N	...0100N
1	n° of Pole		8	8	8	8
2	Rated Voltage	VDC	24	24	24	24
3	Operating Voltage	VDC	24-36	24-36	24-36	24-36
4	Rated Power	W	26	50	74	100
5	Rated Speed	rpm	4000	4000	4000	4000
6	Torque - Rated/Peak	Nm	0,062/0,19	0,125/0,38	0,185/0,56	0,25/0,75
7	Torque Constant	Nm/A	0,035	0,036	0,038	0,036
8	Current - Rated/Peak	A	1,8/5,4	3,5/10,7	4,9/14,7	7/20,8
9	No-Load Current	A	<0,5	<0,5	<0,5	<0,6
10	Rotor Inertia	Kgcm2	0,024	0,048	0,072	0,096
11	Length (L)	mm	75	95	115	135
12	Weight	Kg	0,5	0,65	0,85	1

Characteristics

Item	
Shaft run out	0,025mm
Insulation Class	B
Protection Class	IP20
Working Temperature	+5°C to +40°C
Humidity	5% to 85% not condensing
Radial play (450g load)	0,02mm
Axial play (450g load)	0,08mm
Max. Radial force (10mm from flange)	28N
Max. Axial force	10N
Dielectric strength (for 1 min.)	500 VAC
Insulation Resistance (min. 500 VDC)	100 Mohm
Operating mode	Speed, Torque
Protective functions	Over/Under voltage, Over current, Overheating, Short circuit
Debug & configuration	Serial interface
Software*	Setup & config. - DL Studio
	Programming - DL Space

*Service SCI cable required and available on request

Product code reference

IBS 042 0026 N E 1 000 M S200	
042	Frame size
0026	Rated Power
N	Brake options (N= no brake)
E	Encoder options
1	Connector code (1= standard)
000	Other options
M	Fieldbus
S200	Protocol reference

Encoders

Type	Code
Magnetic Incremental encoder	E

Connection

Connector	Type	Function
CN1	Phoenix 1707421	DC Supply
CN3	Phoenix 1781120	Inputs and Outputs
CN5	Phoenix 1800312	Interface
CN6		Service SCI Interface

Mating connectors included. More information can be found in the product manual on our website.

Input and Output

Input	Digital	3 not isolated 5-24 Vdc NPN or Push Pull
	Analog	1 with potentiometer or 0-10 Vdc
Output	Digital	2 not isolated open drain, 5-24 Vdc 100mA

Interface Control Mode

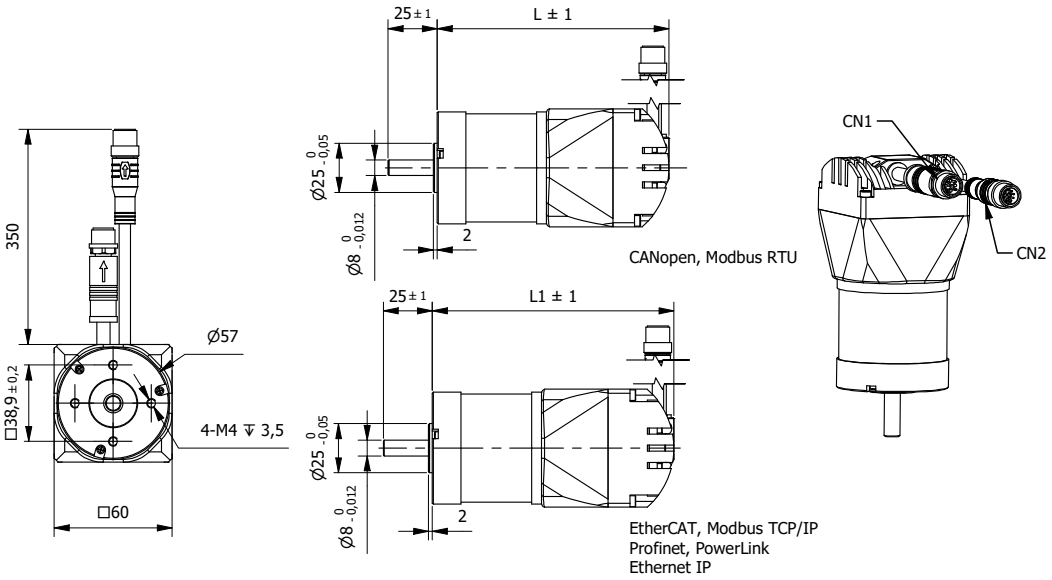
Fieldbus	Code
Analog	A-S300
RS485 Modbus-RTU (programmable)	M-S200
CANopen (programmable)	C-S200
CANopen (DS 402)	C-S402

Brushless DC Motor IBS057

with Motion Controller

Ø 57mm

0,055 - 0,44Nm



Specification							
	Model		...0022N	...0044N	...0088N	...0128N	...0168N
1	n° of Pole		4	4	4	4	4
2	Rated Voltage	VDC	36	36	36	36	36
3	Operating Voltage	VDC	24-36	24-36	24-36	24-36	24-36
4	Rated Power	W	22	44	88	128	168
5	Rated Speed	rpm	4000	4000	4000	4000	4000
6	Torque - Rated/Peak	Nm	0,055/0,16	0,11/0,33	0,22/0,66	0,33/0,99	0,44/1,3
7	Torque Constant	Nm/A	0,052	0,06	0,06	0,063	0,063
8	Current - Rated/Peak	A	1,1/3,1	1,8/5,5	3,7/11	5,2/15,7	7/20,6
9	No-Load Current	A	<0,4	<0,4	<0,5	<0,6	<0,65
10	Rotor Inertia	Kgcm2	0,03	0,075	0,119	0,173	0,23
11	Length (L)	mm	88	98	118	138	158
12	Length (L1)	mm	93	103	123	143	163
13	Weight	Kg	0,58	0,7	1	1,2	1,45

Characteristics	
Item	
Shaft run out	0,025mm
Insulation Class	B
Protection Class	IP20
Working Temperature	+5°C to +40°C
Humidity	5% to 85% not condensing
Radial play (460g load)	0,025mm
Axial play (4000g load)	0,025mm
Max. Radial force (20mm from flange)	75N
Max. Axial force	15N
Dielectric strength (for 1 min.)	500 VAC
Insulation Resistance (min. 500 VDC)	100 Mohm
Operating mode	Speed, Torque
Protective functions	Over/Under voltage, Over current, Overheating, Short circuit
Debug & configuration	Serial interface (not for A-M-C)
Software*	Setup & config. - DL Studio
	Programming - DL Space

*Service SCI cable required and available on request

Product code reference	
IBS 057 0022 N E 1 000 M S200	
057	Frame size
0022	Rated Power
N	Brake options (N= no brake)
E	Encoder options
1	Connector code (1= standard)
000	Other options
M	Fieldbus
S200	Protocol reference

Encoders	
Type	Code
Magnetic Incremental encoder	E

Connection		
Connector	Type	Function
CN1	M12 4P S-Code Male	DC Supply
CN2	M12 12P A-Code Male	Inputs/Outputs for A-M-C fieldbus
CN2	M12 17P A-Code Male	Inputs/Outputs for T-E-P-R-H fieldbus

Cable kit available on request. More information can be found in the product manual on our website.

Input and Output		
Input	Digital inputs	4 not isolated 5-24 Vdc PNP
	Analog inputs (A-M-C fieldbus)	1 not isolated | 0-10 Vdc
Output	Digital outputs	2 not isolated 24 Vdc PNP

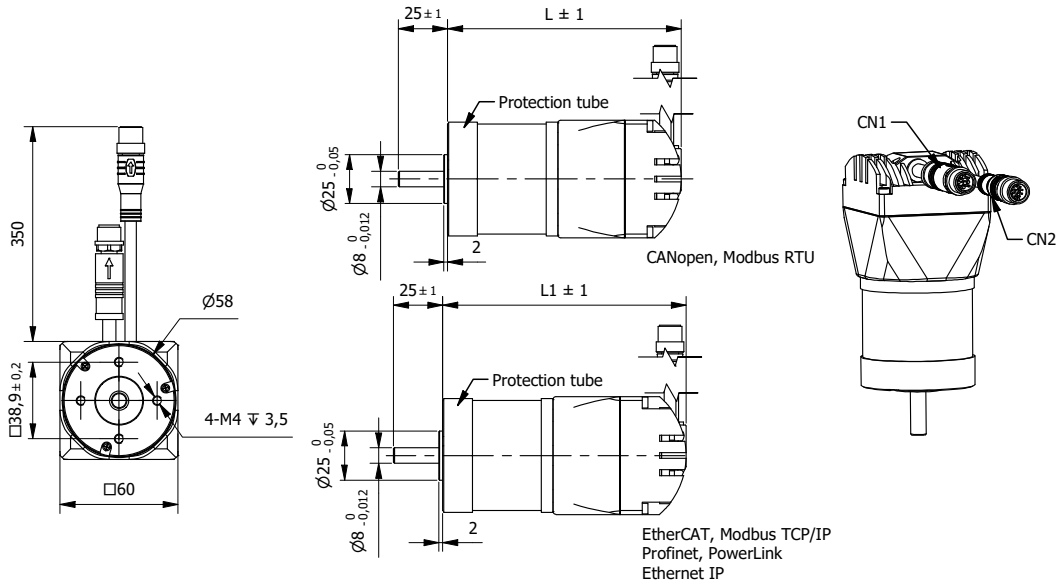
Interface Control Mode	
Fieldbus	Code
Analog	A-S300
RS485 Modbus-RTU (programmable)	M-S200
CANopen (programmable)	C-S200
CANopen (DS 402)	C-S402
Ethernet Modbus TCP/IP (programmable)	T-S200
EtherCAT (DS 402)	E-S402
Profinet (programmable)	P-S200
PowerLink (DS 402)	R-S402
EtherNet IP (programmable)	H-S200

Brushless DC Motor IBI057

with Motion Controller - IP65

Ø 57mm

0,055 - 0,44Nm



Specification							
	Model		...0022N	...0044N	...0088N	...0128N	...0168N
1	n° of Pole		4	4	4	4	4
2	Rated Voltage	VDC	36	36	36	36	36
3	Operating Voltage	VDC	24-36	24-36	24-36	24-36	24-36
4	Rated Power	W	22	44	88	128	168
5	Rated Speed	rpm	4000	4000	4000	4000	4000
6	Torque - Rated/Peak	Nm	0,055/0,16	0,11/0,33	0,22/0,66	0,33/0,99	0,44/1,3
7	Torque Constant	Nm/A	0,052	0,06	0,06	0,063	0,063
8	Current - Rated/Peak	A	1,1/3,1	1,8/5,5	3,7/11	5,2/15,7	7/20,6
9	No-Load Current	A	<0,4	<0,4	<0,5	<0,6	<0,65
10	Rotor Inertia	Kgcm2	0,03	0,075	0,119	0,173	0,23
11	Length (L)	mm	89	99	119	139	159
12	Length (L1)	mm	94	104	124	144	164
13	Weight	Kg	0,58	0,7	1	1,2	1,45

Characteristics	
Item	
Shaft run out	0,025mm
Insulation Class	B
Protection Class	IP65
Working Temperature	+5°C to +40°C
Humidity	5% to 85% not condensing
Radial play (460g load)	0,025mm
Axial play (4000g load)	0,025mm
Max. Radial force (20mm from flange)	75N
Max. Axial force	15N
Dielectric strength (for 1 min.)	500 VAC
Insulation Resistance (min. 500 VDC)	100 Mohm
Operating mode	Speed, Torque
Protective functions	Over/Under voltage, Over current, Overheating, Short circuit
Debug & configuration	Serial interface (not for A-M-C)
Software*	Setup & config. - DL Studio Programming - DL Space

*Service SCI cable required and available on request

Product code reference	
IBI 057 0022 N E 1 000 M S200	
057	Frame size
0022	Rated Power
N	Brake options (N= no brake)
E	Encoder options
1	Connector code (1= standard)
000	Other options
M	Fieldbus
S200	Protocol reference

Encoders	
Type	Code
Magnetic Incremental encoder	E

Connection		
Connector	Type	Function
CN1	M12 4P S-Code Male	DC Supply
CN2	M12 12P A-Code Male	Inputs/Outputs for A-M-C fieldbus
CN2	M12 17P A-Code Male	Inputs/Outputs for T-E-P-R-H fieldbus

Cable kit available on request. More information can be found in the product manual on our website.

Input and Output		
Input	Digital inputs	4 not isolated 5-24 Vdc PNP
	Analog inputs (A-M-C fieldbus)	1 not isolated | 0-10 Vdc
Output	Digital outputs	2 not isolated 24 Vdc PNP

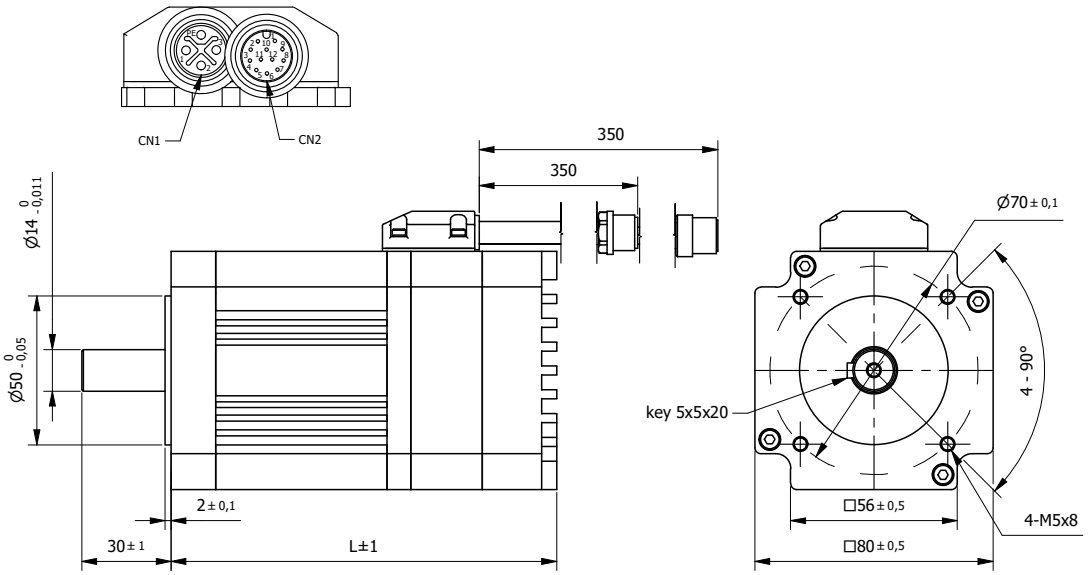
Interface Control Mode	
Fieldbus	Code
Analog	A-S300
RS485 Modbus-RTU (programmable)	M-S200
CANopen (programmable)	C-S200
CANopen (DS 402)	C-S402
Ethernet Modbus TCP/IP (programmable)	T-S200
EtherCAT (DS 402)	E-S402
Profinet (programmable)	P-S200
PowerLink (DS 402)	R-S402
EtherNet IP (programmable)	H-S200

Brushless DC Motor IBS080

with Motion Controller

□ 80mm

0,8 - 1,13Nm



UL certified: UL E531626 | UL E531627

Specification

	Model		...0290N	...0362N
1	n° of Pole		8	8
2	Rated Voltage	VDC	40	40
3	Operating Voltage	VDC	24-48	24-48
4	Rated Power	W	290	362
5	Rated Speed	rpm	3210	3210
6	Torque - Rated/Peak	Nm	0,8/2,4	1,13/3,4
7	Torque Constant	Nm/A	0,094	0,085
8	Current - Rated/Peak	A	10/30	13,3/40
9	No-Load Current	A	0,7	0,6
10	Rotor Inertia	Kgcm2	0,68	0,68
11	Length (L)	mm	120	130
12	Weight	Kg	2,1	2,3

Characteristics

Item	
Shaft run out	0,05mm
Insulation Class	F
Protection Class	IP54
Working Temperature	+5°C to +40°C
Humidity	5% to 85% not condensing
Radial play (450g load)	0,04mm
Axial play (450g load)	0,08mm
Max. Radial force (at mid-shaft)	330N
Max. Axial force	764N
Dielectric strength (for 1 min.)	500 VDC
Insulation Resistance (min. 500 VDC)	100 Mohm
Operating mode	Speed, Torque
Protective functions	Over/Under voltage, Over current, Overheating, Short circuit
Debug & configuration	CAN/RS485 interface
Software	Setup & config. - DL Studio
	Programming - DL Space

Product code reference

IBS 080 0290 N E 1 000 M S200	
080	Frame size
0290	Rated Power
N	Brake options (N= no brake)
E	Encoder options
1	Connector code (1= standard)
000	Other options
M	Fieldbus
S200	Protocol reference

Encoders

Type	Code
Magnetic Incremental encoder	E

Connection

Connector	Type	Function
CN1	M12 4P S-Code Male	DC Supply
CN2	M12 12P A-Code Male	Inputs/Outputs

Cable kit available on request. More information can be found in the product manual on our website.

Input and Output

Input	Digital inputs	4 not isolated 24 Vdc PNP
	Analog inputs	1 not isolated | 0-10 Vdc
Output	Digital outputs	2 not isolated 24 Vdc PNP

Interface Control Mode

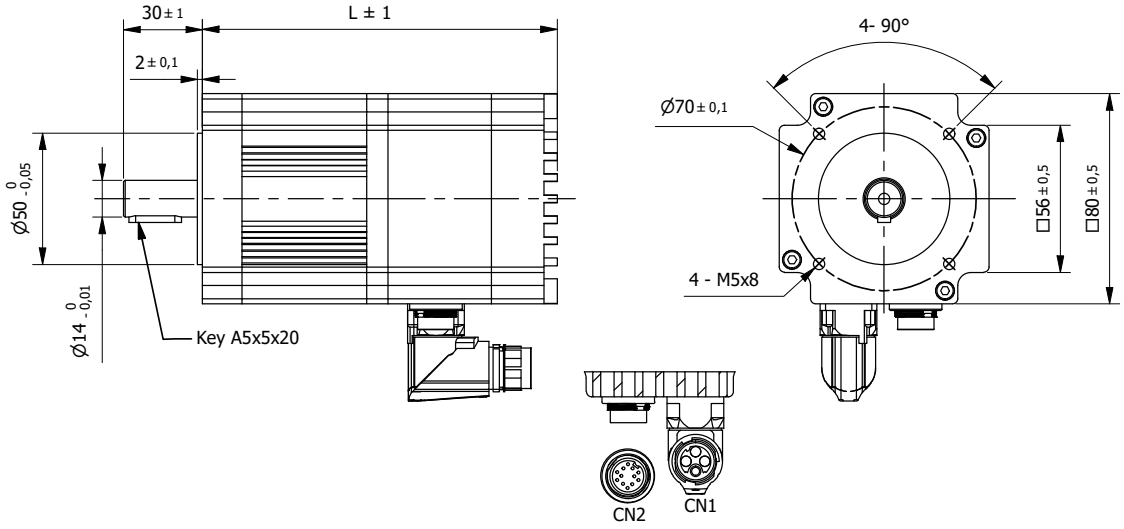
Fieldbus	Code
RS485 Modbus-RTU (programmable)	M-S200
CANopen (programmable)	C-S200
CANopen (DS 402)	C-S402

Brushless DC Motor IBI080

with Motion Controller - IP65

□ 80mm

0,8 - 1,13Nm



UL certified: UL E531626 | UL E531627

Specification

	Model		...0290N	...0362N
1	n° of Pole		8	8
2	Rated Voltage	VDC	40	40
3	Operating Voltage	VDC	24-48	24-48
4	Rated Power	W	290	362
5	Rated Speed	rpm	3210	3210
6	Torque - Rated/Peak	Nm	0,8/2,4	1,13/3,4
7	Torque Constant	Nm/A	0,094	0,085
8	Current - Rated/Peak	A	10/30	13,3/40
9	No-Load Current	A	0,7	0,6
10	Rotor Inertia	Kgcm2	0,68	0,68
11	Length (L)	mm	135	145
12	Weight	Kg	2,15	2,35

Characteristics

Item	
Shaft run out	0,05mm
Insulation Class	F
Protection Class	IP65
Working Temperature	+5°C to +40°C
Humidity	5% to 85% not condensing
Radial play (450g load)	0,04mm
Axial play (450g load)	0,08mm
Max. Radial force (at mid-shaft)	330N
Max. Axial force	764N
Dielectric strength (for 1 min.)	500 VDC
Insulation Resistance (min. 500 VDC)	100 Mohm
Operating mode	Speed, Torque
Protective functions	Over/Under voltage, Over current, Overheating, Short circuit
Debug & configuration	CAN/RS485 interface
Software	Setup & config. - DL Studio
	Programming - DL Space

Product code reference

IBI 080 0290 N E 1 000 M S200	
080	Frame size
0290	Rated Power
N	Brake options (N= no brake)
E	Encoder options
1	Connector code (1= standard)
000	Other options
M	Fieldbus
S200	Protocol reference

Encoders

Type	Code
Magnetic Incremental encoder	E

Connection

Connector	Type	Function
CN1	M17 4P TE-BGC-894N0000153A00	DC Supply
CN2	M16 12P Amphenol C09131C0121002U	Inputs/Outputs

Cable kit available on request. More information can be found in the product manual on our website.

Input and Output

Input	Digital inputs	4 not isolated 24 Vdc PNP
	Analog inputs	1 not isolated | 0-10 Vdc
Output	Digital outputs	2 not isolated 24 Vdc PNP

Interface Control Mode

Fieldbus	Code
RS485 Modbus-RTU (programmable)	M-S200
CANopen (programmable)	C-S200
CANopen (DS 402)	C-S402

Brushless Servo motors

with Motion controller

Advantages at a glance
Extra high Rated Torque
STO (Safe Torque Off) function
Parametrization and programming with software

Our Servo Motors with integrated controller offer the compactness of a standard Servo motor together with all the features of our drives. The Servo motors use rare earth neodymium-iron-boron permanent magnet rotors and provide features of low inertia, high torque density, high peak torques, low noise and low current consumption. These motors have digital inputs and outputs and an analogue input and can be also equipped with RS485 Modbus-RTU, CANopen, Modbus-TCP or Ethercat fieldbuses. All of our models are IP65 rated as standard so that they can be used in a wide variety of environments without concern.

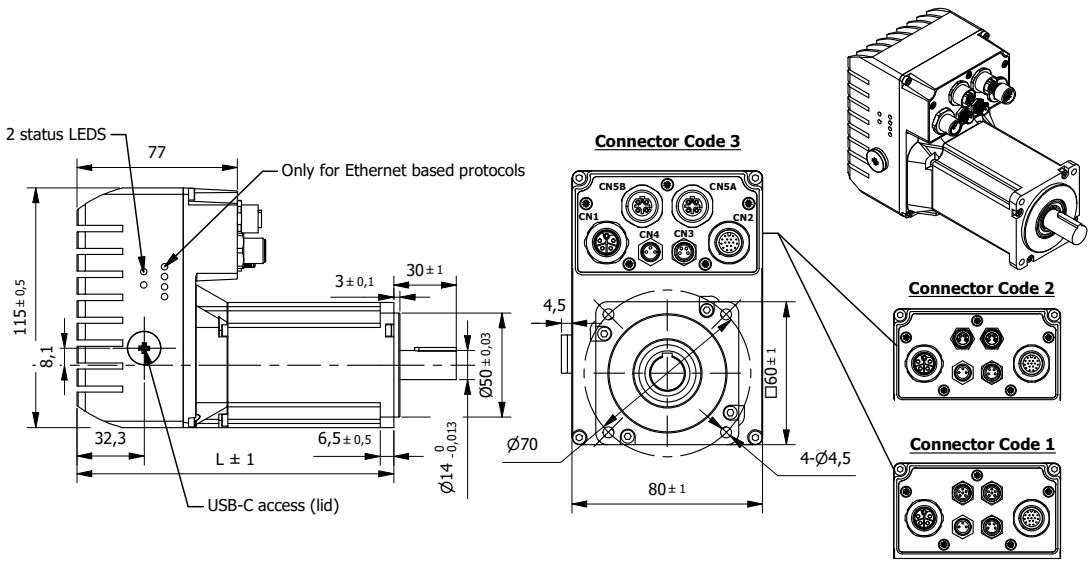
* Rated Torque

Brushless DC Servo motor IVI060

with Motion Controller - IP65

□ 60mm

0,64 - 1,27Nm



with Safe Torque Off function

Specification						
	Model		...0200N	...0200B	...0400N	...0400B
1	n° of Pole		10	10	10	10
2	Rated Voltage	VDC	48	48	48	48
3	Operating Voltage	VDC	24-48	24-48	24-48	24-48
4	Rated Power	W	200	200	400	400
5	Rated Speed	rpm	3000	3000	3000	3000
6	Torque - Rated/Peak	Nm	0,64/1,92	0,64/1,92	1,27/3,81	1,27/3,81
7	Torque Constant	Nm/A	0,107	0,107	0,107	0,107
8	Current - Rated/Peak	A	6/18	6/18	12/36	12/36
9	No-Load Current	A	0,6	0,6	<1	<1
10	Back EMF constant	V/kRPM	6,5	6,5	6,5	6,5
11	Rotor Inertia	Kgcm2	0,15	0,15	0,25	0,25
12	Brake			24VDC - 1,5Nm		24VDC - 1,5Nm
13	Length (L) - Encoder E/A	mm	131/141	167/177	152/162	188/198
14	Weight	Kg	1,43	1,86	1,82	2,25

Characteristics	
Item	
Shaft run out	0,05mm
Insulation Class	F 155°C
Protection Class	IP65
Working Temperature	+5°C to +40°C
Humidity	5% to 85% not condensing
Radial play (450g load)	0,02mm
Axial play (450g load)	0,14mm
Max. Radial force (at mid-shaft)	245N
Max. Axial force	98N
Dielectric strength (for 1 min.)	600 VAC
Insulation Resistance (min. 500 VDC)	100 Mohm
Operating mode	Position, Speed, Torque
Protective functions	Over/Under voltage, Over current, Overheating, Short circuit
Safety feature	Safe Torque Off (STO) SIL3/PLe
Debug & configuration	Serial interface
Software*	Setup & config. - DL Studio Programming - DL Space
*Service SCI cable required and available on request	

Product code reference	
IVI 060 0200 N E 1 000 M S200	
060	Frame size
0200	Rated Power
N	Brake options (N= no brake)
E	Encoder options
1	Connector code
000	Other options
M	Fieldbus
S200	Protocol reference

Encoders	
Type	Code
Optical Incremental 2500 CPR	E
Magnetic Absolute (single-turn, BiSS): 17bit, 16bit	A

Other options	
Item	Code
Standard	000
With End resistor 120Ω (for M-C fieldbus)	001

Connection			
Connector	Type	Function	Code
CN1	M12 5P L-Code Male	DC Supply	
CN2	M12 17P A-Code Male	Inputs/Outputs	
CN3	M8 4P A-Code Male	STO Input	
CN4	M8 3P A-Code Male	Brake Resistor	
CN5A/B	M8 6P A-Code Male	Fieldbus (M-C)	1
CN5A/B	M8 4P A-Code Female	Fieldbus (T-E)	2
CN5A/B	M12 4P D-Code Female	Fieldbus (T-E-P-R-H)	3
Cable kit available on request. More information can be found in the product manual on our website.			

Input and Output		
Input	Digital	4 not isolated 5-24 Vdc PNP
	Analog	2 not isolated | 0-10 Vdc
Output	Digital	2 not isolated 24 Vdc PNP

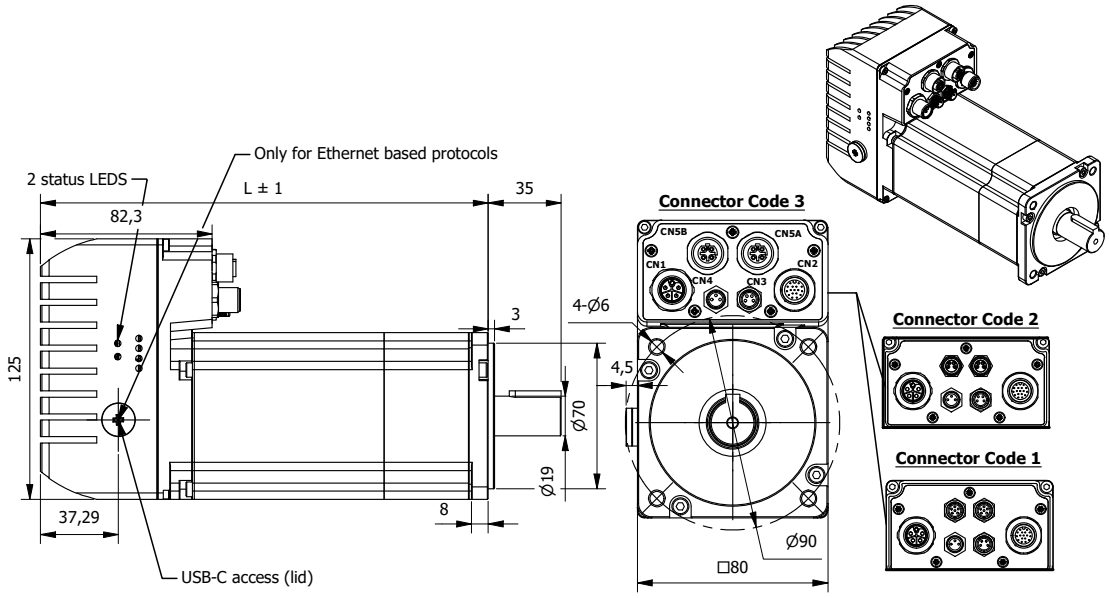
Interface Control Mode	
Fieldbus	Code
RS485 Modbus-RTU (programmable)	M-S200
CANopen (programmable)	C-S200
CANopen (DS 402)	C-S402
Ethernet Modbus TCP/IP (programmable)	T-S200
EtherCAT (DS 402)	E-S402
Profinet (programmable)	P-S200
PowerLink (DS 402)	R-S402
EtherNet IP (programmable)	H-S200

Brushless DC Servo motor IVI080

with Motion Controller - IP65

□ 80mm

2,39 - 3,18Nm



with Safe Torque Off function

Specification						
	Model		...0750N	...0750B	...1000N	...1000B
1	n° of Pole		10	10	10	10
2	Rated Voltage	VDC	48	48	48	48
3	Operating Voltage	VDC	24-48	24-48	24-48	24-48
4	Rated Power	W	750	750	1000	1000
5	Rated Speed	rpm	3000	3000	3000	3000
6	Torque - Rated/Peak	Nm	2,39/7,17	2,39/7,17	3,18/9,54	3,18/9,54
7	Torque Constant	Nm/A	0,113	0,113	0,113	0,113
8	Current - Rated/Peak	A	21/63	21/63	28/84	28/84
9	No-Load Current	A	2	2	2	2
10	Back EMF constant	V/kRPM	6,8	6,8	6,8	6,8
11	Rotor Inertia	Kgcm2	1,56	1,56	2,22	2,22
12	Brake			24VDC - 3,2Nm		24VDC - 3,2Nm
13	Length (L) - Encoder E/A	mm	165/175	195/205	185/195	215/225
14	Weight	Kg	3,15	3,74	3,8	4,39

Characteristics	
Item	
Shaft run out	0,05mm
Insulation Class	F 155°C
Protection Class	IP65
Working Temperature	+5°C to +40°C
Humidity	5% to 85% not condensing
Radial play (450g load)	0,02mm
Axial play (450g load)	0,08mm
Max. Radial force (at mid-shaft)	392N
Max. Axial force	147N
Dielectric strength (for 1 min.)	600 VAC
Insulation Resistance (min. 500 VDC)	100 Mohm
Operating mode	Position, Speed, Torque
Protective functions	Over/Under voltage, Over current, Overheating, Short circuit
Safety feature	Safe Torque Off (STO) SIL3/PLe
Debug & configuration	Serial interface
Software*	Setup & config. - DL Studio Programming - DL Space
*Service SCI cable required and available on request	

Product code reference	
IVI 080 0750 N E 1 000 M S200	
080	Frame size
0750	Rated Power
N	Brake options (N= no brake)
E	Encoder options
1	Connector code
000	Other options
M	Fieldbus
S200	Protocol reference

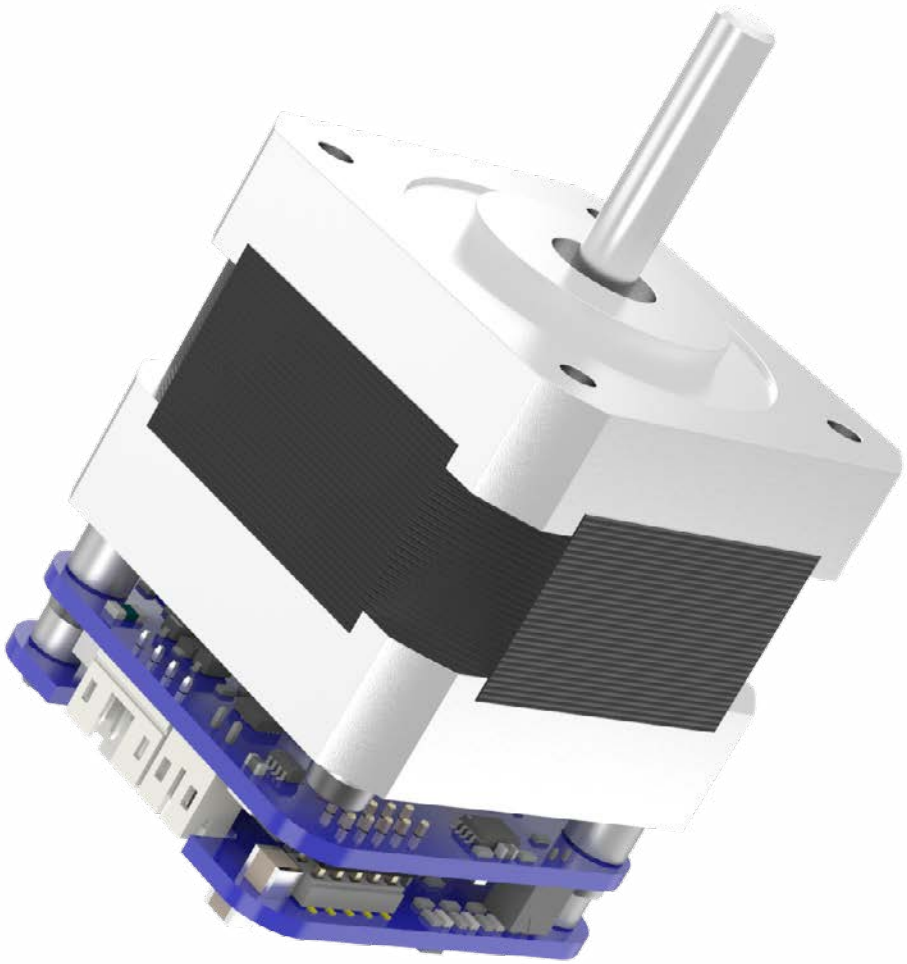
Encoders	
Type	Code
Optical Incremental 2500 CPR	E
Magnetic Absolute (single-turn, BiSS): 17bit, 16bit	A

Other options	
Item	Code
Standard	000
With End resistor 120Ω (for M-C fieldbus)	001

Connection			
Connector	Type	Function	Code
CN1	M12 5P L-Code Male	DC Supply	
CN2	M12 17P A-Code Male	Inputs/Outputs	
CN3	M8 4P A-Code Male	STO Input	
CN4	M8 3P A-Code Male	Brake Resistor	
CN5A/B	M8 6P A-Code Male	Fieldbus (M-C)	1
CN5A/B	M8 4P A-Code Female	Fieldbus (T-E)	2
CN5A/B	M12 4P D-Code Female	Fieldbus (T-E-P-R-H)	3
Cable kit available on request. More information can be found in the product manual on our website.			

Input and Output		
Input	Digital	4 not isolated 5-24 Vdc PNP
	Analog	2 not isolated | 0-10 Vdc
Output	Digital	2 not isolated 24 Vdc PNP

Interface Control Mode	
Fieldbus	Code
RS485 Modbus-RTU (programmable)	M-S200
CANopen (programmable)	C-S200
CANopen (DS 402)	C-S402
Ethernet Modbus TCP/IP (programmable)	T-S200
EtherCAT (DS 402)	E-S402
Profinet (programmable)	P-S200
PowerLink (DS 402)	R-S402
EtherNet IP (programmable)	H-S200



Stepper motors
with Motion controller

Advantages at a glance
Compact construction
Integrated Motion, Speed and Current control
Parametrization and programming with software

Our stepper motors with integrated electronics use stepless control technology for 65,536 microsteps per revolution and offer encoder options such as magnetic incremental, single-turn absolute, or multi-turn absolute, to meet a wide range of applications. Communication options include CANopen, Modbus RTU, EtherCAT, Modbus TCP/IP, Profinet, PowerLink, IO-Link and Ethernet-IP, so the motors can be easily connected to any industrial network.

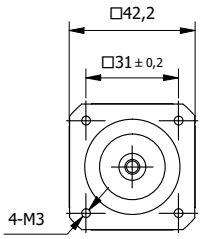
With a smart stepper motor, designers and machine builders can achieve cost savings of 20 to 40 percent over a conventional stepper motor with separate drive and controller. Several of our models are IP65 rated, so they can be used in a wide range of environments where moisture or water spray is present.

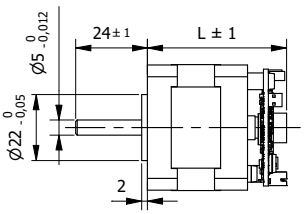
** Holding Torque

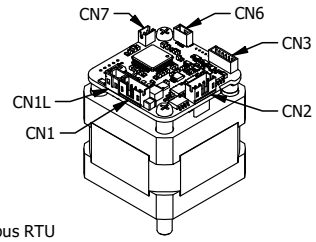
Stepper Motor ISS042
with Motion Controller

□ 42mm

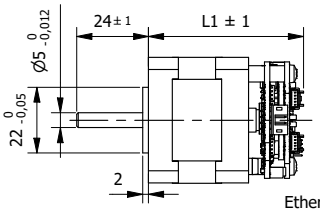
0,22 - 0,8Nm

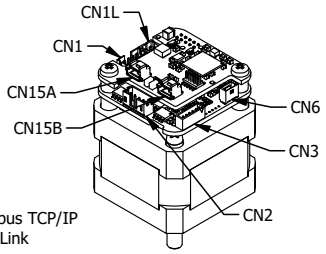






CANopen, Modbus RTU





EtherCAT, Modbus TCP/IP
Profinet, PowerLink
Ethernet IP

Specification

	Model		...0047N	...0053N	...0061N	...0073N
1	Operating Voltage	VDC	12÷36	12÷36	12÷36	12÷36
2	Current/Phase	A	2	2	2	2
3	Resistance/Phase	Ω	0,95	1	1,4	2,1
4	Inductance/Phase	mH	1,4	2,2	2,5	4,7
5	Holding Torque	Nm	0,22	0,36	0,44	0,8
6	Rotor Inertia	gcm2	38	54	75	102
7	Length (L)	mm	47	53	61	73
8	Length (L1)	mm	52	58	66	79
9	Weight	Kg	0,27	0,32	0,39	0,52

Characteristics

Item	
Step angle	1,8°
Step angle Accuracy	±5%
Protection Class	IP00
Working Temperature	+5°C to +40°C
Humidity	5% to 85% not condensing
Max. Temp. Rise (rated current, 2-phase on)	80°C
Max. Shaft Radial play (450g load)	0,02mm
Max. Shaft Axial play (450g load)	0,08mm
Max. Radial Force (20mm from front flange)	28N
Max Axial Force	10N
Dielectric Strength (for 1 min.)	500 VAC
Insulation Resistance (min. 500 VDC)	100 Mohm
Operating mode	Position, Speed, Torque
Protective functions	Over/Under voltage, Over current, Overheating
Debug & configuration	Serial interface
Software*	Setup & config. - DL Studio Programming - DL Space
*Service SCI cable required and available on request	

Product code reference

ISS 042 0047 N E 1 000 M S200	
042	Frame size
0047	Motor length
N	Brake options (N= no brake)
E	Encoder options
1	Connector code (1= standard)
000	Other options
M	Fieldbus
S200	Protocol reference

Encoders

Type	Code
Magnetic Incremental 4096 CPR or Absolute Single turn encoder	E

Connection

Connector	Type	Function
CN1	JST B4B-PH	Power and Fieldbus (M-C)
CN1L	JST B2B-PH	Logic
CN2	JST B4B-PH-B	Motor connection
CN3	JST B6B-ZR	Inputs/Outputs
CN6	Molex 203562-0505	Service SCI Interface
CN7	JST B2B-ZR	Analog Input (M-C fieldbus)
CN15A/B	Molex 203562-0505	Fieldbus (T-E-P-R-H)

Cable kit available on request. More information can be found in the product manual on our website.

Input and Output		
Input	Digital	3 not isolated 5-24 Vdc PNP
	Analog (M-C fieldbus)	1 with potentiometer or 0-10 Vdc not isolated
Output	Digital	2 not isolated open drain, 5-24 Vdc 100mA

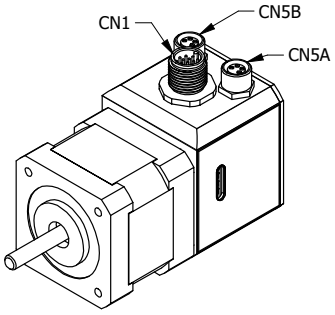
Interface Control Mode

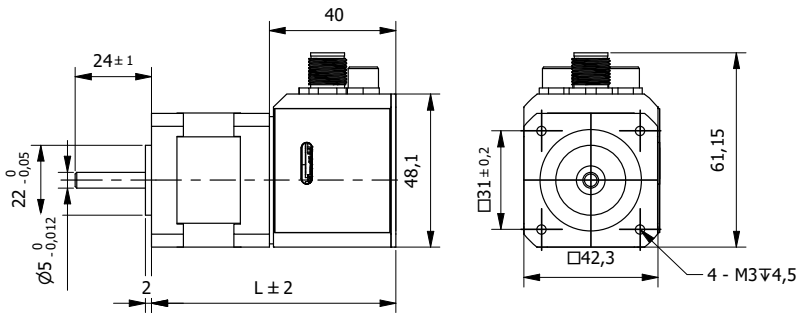
Fieldbus	Code
RS485 Modbus-RTU (programmable)	M-S200
CANopen (programmable)	C-S200
CANopen (DS 402)	C-S402
Ethernet Modbus TCP/IP (programmable)	T-S200
EtherCAT (DS 402)	E-S402
Profinet (programmable)	P-S200
PowerLink (DS 402)	R-S402
EtherNet IP (programmable)	H-S200

Stepper Motor ISI042
with Motion Controller - IP65

□ 42mm

0,22 - 0,8Nm





Specification						
	Model		...0077N	...0083N	...0091N	...0104N
1	Operating Voltage	VDC	12÷30	12÷30	12÷30	12÷30
2	Current/Phase	A	1,5	1,5	1,5	1,5
3	Resistance/Phase	Ω	1,6	1,95	2,3	3,2
4	Inductance/Phase	mH	2,2	4,5	4,6	8
5	Holding Torque	Nm	0,22	0,36	0,44	0,8
6	Rotor Inertia	gcm2	35	54	68	102
7	Length (L)	mm	77	83	91	104
8	Weight	Kg	0,35	0,41	0,48	0,61

Characteristics	
Item	
Step angle	1,8°
Step angle Accuracy	±5%
Protection Class	IP65
Working Temperature	+5°C to +40°C
Humidity	5% to 85% not condensing
Max. Temp. Rise (rated current, 2-phase on)	80°C
Max. Shaft Radial play (450g load)	0,02mm
Max. Shaft Axial play (450g load)	0,08mm
Max. Radial Force (20mm from front flange)	28N
Max Axial Force	10N
Dielectric Strength (for 1 min.)	500 VAC
Insulation Resistance (min. 500 VDC)	100 Mohm
Operating mode	Position, Speed, Torque
Protective functions	Over/Under voltage, Over current, Overheating
Debug & configuration	Serial interface (not for M-C)
Software*	Setup & config. - DL Studio Programming - DL Space
*Service SCI cable required and available on request	

Product code reference	
ISS 042 0077 N E 1 000 M S200	
042	Frame size
0077	Motor length
N	Brake options (N= no brake)
E	Encoder options
1	Connector code (1= standard)
000	Other options
M	Fieldbus
S200	Protocol reference

Encoders	
Type	Code
Magnetic Incremental 4096 CPR or Absolute Single turn encoder	E

Other options	
Item	Code
Standard	000
With End resistor 120Ω (for M-C fieldbus)	001

Connection		
Connector	Type	Function
CN1	M12 17P A-Code Male	Power, Logic, Inputs/Outputs
CN5A/B	M8 4P A-Code Female	Fieldbus
Cable kit available on request. More information can be found in the product manual on our website.		

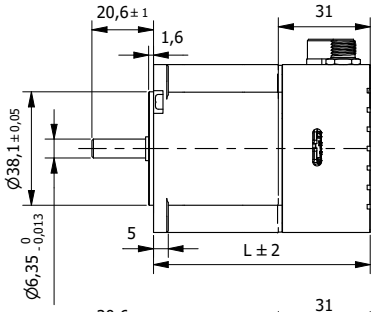
Input and Output		
Input	Digital	3 not isolated 5-24 Vdc PNP
	Analog (M-C fieldbus)	1 with potentiometer or 0-10 Vdc not isolated
Output	Digital	2 not isolated open drain, 5-24 Vdc 100mA

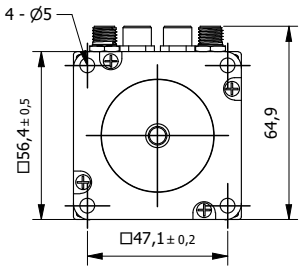
Interface Control Mode	
Fieldbus	Code
RS485 Modbus-RTU (programmable)	M-S200
CANopen (programmable)	C-S200
CANopen (DS 402)	C-S402
Ethernet Modbus TCP/IP (programmable)	T-S200
EtherCAT (DS 402)	E-S402
Profinet (programmable)	P-S200
PowerLink (DS 402)	R-S402
EtherNet IP (programmable)	H-S200

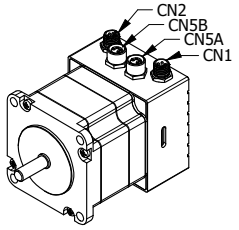
Stepper Motor ISS057
with Motion Controller

□ 57mm

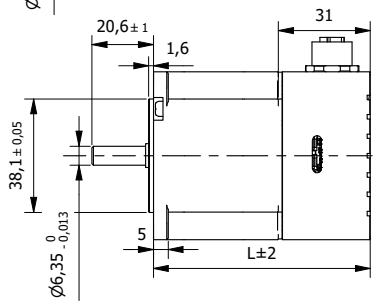
0,55 - 1,89Nm

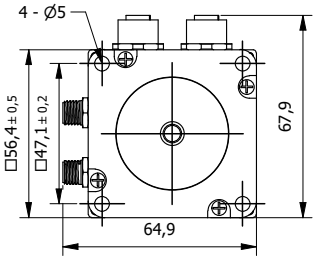


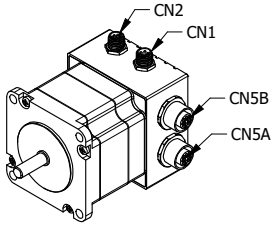




CONNECTOR CODE 1: CANopen, Modbus RTU, Modbus TCP/IP, EtherCAT







CONNECTOR CODE 2: EtherCAT, Modbus TCP/IP, Profinet, PowerLink, Ethernet IP

Integrated Brake available on request

Specification						
	Model		...0071N	...0081N	...0085N	...0106N
1	Operating Voltage	VDC	12÷48	12÷48	12÷48	12÷48
2	Current/Phase	A	3	3	3	3
3	Resistance/Phase	Ω	0,7	0,83	0,83	1,13
4	Inductance/Phase	mH	1,4	2,5	2,8	4
5	Holding Torque	Nm	0,55	1	1,26	1,89
6	Rotor Inertia	gcm2	120	275	300	480
7	Detent Torque	Nm	0,021	0,036	0,04	0,067
8	Length (L)	mm	71	81	85	106
9	Weight	Kg	0,54	0,71	0,78	1,12

Characteristics	
Item	
Step angle	1,8°
Step angle Accuracy	±5%
Protection Class	IP30
Working Temperature	+5°C to +40°C
Humidity	5% to 85% not condensing
Max. Temp. Rise (rated current, 2-phase on)	80°C
Max. Shaft Radial play (450g load)	0,02mm
Max. Shaft Axial play (450g load)	0,08mm
Max. Radial Force (20mm from front flange)	75 N
Max Axial Force	15 N
Dielectric Strength (for 1 min.)	500 VAC
Insulation Resistance (min. 500 VDC)	100 Mohm
Operating mode	Position, Speed, Torque
Protective functions	Over/Under voltage, Over current, Overheating, Short circuit
Debug & configuration	Serial interface (not for M-C)
Software*	Setup & config. - DL Studio
	Programming - DL Space
*Service SCI cable required and available on request	

Product code reference	
ISS 057 0071 N E 1 000 M S200	
057	Frame size
0071	Motor length
N	Brake options (N= no brake)
E	Encoder options
1	Connector code
000	Other options
M	Fieldbus
S200	Protocol reference

Encoders	
Type	Code
Magnetic Incremental 4096 CPR or Absolute Single turn encoder	E
Other options on request	

Other options	
Item	Code
Standard	000
With End resistor 120Ω (for M-C fieldbus)	001

Connection			
Connector	Type	Function	Code
CN1	M8 4P A-Code Male	Power/Logic	
CN2	M8 8P A-Code Male	Inputs/Outputs	
CN5A/B	M8 4P A-Code Female	Fieldbus (M-C-T-E)	1
CN5A/B	M12 4P D-Code Female	Fieldbus (T-E-P-R-H)	2
Cable kit available on request. More information can be found in the product manual on our website.			

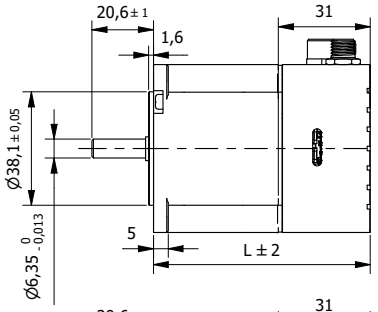
Input and Output		
Input	Digital	Up to 4 not isolated 5-24 Vdc PNP
	Analog (M-C fieldbus)	1 with potentiometer or 0-10 Vdc not isolated
Output	Digital	Up to 2 not isolated open drain, 5-24 Vdc 100mA

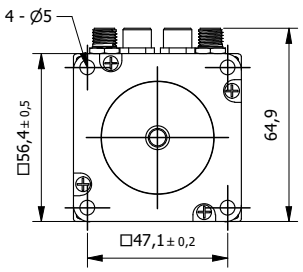
Interface Control Mode	
Fieldbus	Code
RS485 Modbus-RTU (programmable)	M-S200
CANopen (programmable)	C-S200
CANopen (DS 402)	C-S402
Ethernet Modbus TCP/IP (programmable)	T-S200
EtherCAT (DS 402)	E-S402
Profinet (programmable)	P-S200
PowerLink (DS 402)	R-S402
EtherNet IP (programmable)	H-S200

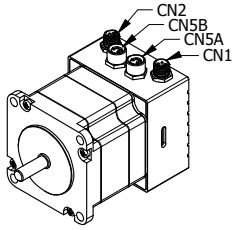
Stepper Motor ISI057
with Motion Controller - IP65

□ 57mm

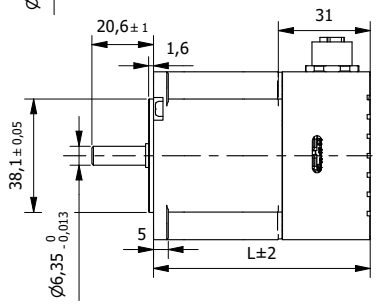
0,55 - 1,89Nm

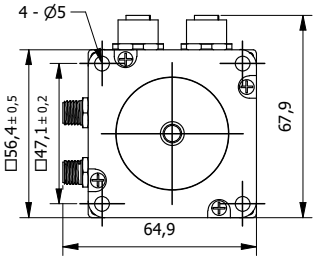


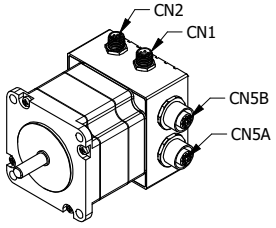




CONNECTOR CODE 1: CANopen, Modbus RTU, Modbus TCP/IP, EtherCAT







CONNECTOR CODE 2: EtherCAT, Modbus TCP/IP, Profinet, PowerLink, Ethernet IP

Integrated Brake available on request

Specification						
	Model		...0073N	...0083N	...0087N	...0108N
1	Operating Voltage	VDC	12÷48	12÷48	12÷48	12÷48
2	Current/Phase	A	3	3	3	3
3	Resistance/Phase	Ω	0,7	0,83	0,83	1,13
4	Inductance/Phase	mH	1,4	2,5	2,8	4
5	Holding Torque	Nm	0,55	1	1,26	1,89
6	Rotor Inertia	gcm2	120	275	300	480
7	Detent Torque	Nm	0,021	0,036	0,04	0,067
8	Length (L)	mm	73	83	87	108
9	Weight	Kg	0,56	0,73	0,79	1,13

Characteristics	
Item	
Step angle	1,8°
Step angle Accuracy	±5%
Protection Class	IP65
Working Temperature	+5°C to +40°C
Humidity	5% to 85% not condensing
Max. Temp. Rise (rated current, 2-phase on)	80°C
Max. Shaft Radial play (450g load)	0,02mm
Max. Shaft Axial play (450g load)	0,08mm
Max. Radial Force (20mm from front flange)	75 N
Max Axial Force	15 N
Dielectric Strength (for 1 min.)	500 VAC
Insulation Resistance (min. 500 VDC)	100 Mohm
Operating mode	Position, Speed, Torque
Protective functions	Over/Under voltage, Over current, Overheating, Short circuit
Debug & configuration	Serial interface (not for M-C)
Software*	Setup & config. - DL Studio
	Programming - DL Space
*Service SCI cable required and available on request	

Product code reference	
ISI 057 0073 N E 1 000 M S200	
057	Frame size
0073	Motor length
N	Brake options (N= no brake)
E	Encoder options
1	Connector code
000	Other options
M	Fieldbus
S200	Protocol reference

Encoders	
Type	Code
Magnetic Incremental 4096 CPR or Absolute Single turn encoder	E
Other options on request	

Other options	
Item	Code
Standard	000
With End resistor 120Ω (for M-C fieldbus)	001

Connection			
Connector	Type	Function	Code
CN1	M8 4P A-Code Male	Power/Logic	
CN2	M8 8P A-Code Male	Inputs/Outputs	
CN5A/B	M8 4P A-Code Female	Fieldbus (M-C-T-E)	1
CN5A/B	M12 4P D-Code Female	Fieldbus (T-E-P-R-H)	2
Cable kit available on request. More information can be found in the product manual on our website.			

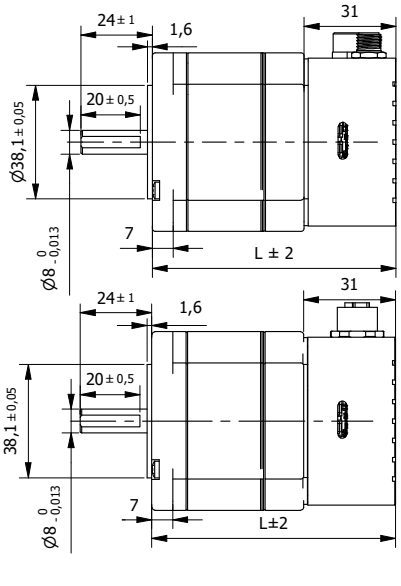
Input and Output		
Input	Digital	Up to 4 not isolated 5-24 Vdc PNP
	Analog (M-C fieldbus)	1 with potentiometer or 0-10 Vdc not isolated
Output	Digital	Up to 2 not isolated open drain, 5-24 Vdc 100mA

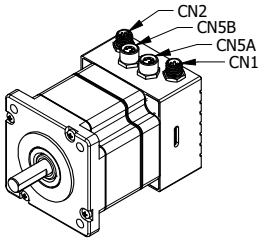
Interface Control Mode	
Fieldbus	Code
RS485 Modbus-RTU (programmable)	M-S200
CANopen (programmable)	C-S200
CANopen (DS 402)	C-S402
Ethernet Modbus TCP/IP (programmable)	T-S200
EtherCAT (DS 402)	E-S402
Profinet (programmable)	P-S200
PowerLink (DS 402)	R-S402
EtherNet IP (programmable)	H-S200

Stepper Motor ISS060
with Motion Controller

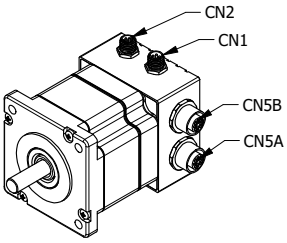
□ 60mm

1 - 3,1Nm





CONNECTOR CODE 1: CANopen, Modbus RTU, Modbus TCP/IP, EtherCAT



CONNECTOR CODE 2: EtherCAT, Modbus TCP/IP, Profinet, PowerLink, Ethernet IP

Integrated Brake available on request

Specification

	Model		...0080N	...0089N	...0100N	...0121N
1	Operating Voltage	VDC	12÷48	12÷48	12÷48	12÷48
2	Current/Phase	A	3	3	3	3
3	Resistance/Phase	Ω	0,68	0,8	0,98	1,2
4	Inductance/Phase	mH	1,7	3	3	5,4
5	Holding Torque	Nm	1	1,75	2,1	3,1
6	Rotor Inertia	gcm2	275	440	570	840
7	Detent Torque	Nm	0,05	0,069	0,088	0,098
8	Length (L)	mm	80	89	100	121
9	Weight	Kg	0,76	0,94	1,14	1,55

Characteristics

Item	
Step angle	1,8°
Step angle Accuracy	±5%
Protection Class	IP30
Working Temperature	+5°C to +40°C
Humidity	5% to 85% not condensing
Max. Temp. Rise (rated current, 2-phase on)	80°C
Max. Shaft Radial play (450g load)	0,02mm
Max. Shaft Axial play (450g load)	0,08mm
Max. Radial Force (20mm from front flange)	75 N
Max Axial Force	15 N
Dielectric Strength (for 1 min.)	500 VAC
Insulation Resistance (min. 500 VDC)	100 Mohm
Operating mode	Position, Speed, Torque
Protective functions	Over/Under voltage, Over current, Overheating, Short circuit
Debug & configuration	Serial interface (not for M-C)
Software*	Setup & config. - DL Studio
	Programming - DL Space
*Service SCI cable required and available on request	

Product code reference

ISS 060 0080 N E 1 000 M S200	
060	Frame size
0080	Motor length
N	Brake options (N= no brake)
E	Encoder options
1	Connector code
000	Other options
M	Fieldbus
S200	Protocol reference

Encoders

Type	Code
Magnetic Incremental 4096 CPR or Absolute Single turn encoder	E
Other options on request	

Other options

Item	Code
Standard	000
With End resistor 120Ω (for M-C fieldbus)	001

Connection

Connector	Type	Function	Code
CN1	M8 4P A-Code Male	Power/Logic	
CN2	M8 8P A-Code Male	Inputs/Outputs	
CN5A/B	M8 4P A-Code Female	Fieldbus (M-C-T-E)	1
CN5A/B	M12 4P D-Code Female	Fieldbus (T-E-P-R-H)	2

Cable kit available on request. More information can be found in the product manual on our website.

Input and Output

Input	Digital	Up to 4 not isolated 5-24 Vdc PNP
	Analog (M-C fieldbus)	1 with potentiometer or 0-10 Vdc not isolated
Output	Digital	Up to 2 not isolated open drain, 5-24 Vdc 100mA

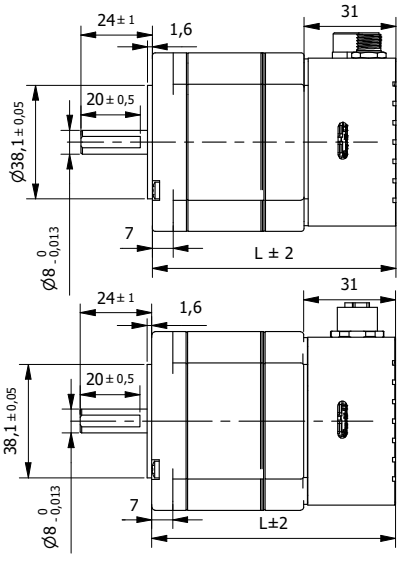
Interface Control Mode

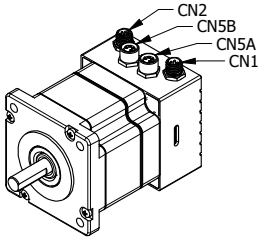
Fieldbus	Code
RS485 Modbus-RTU (programmable)	M-S200
CANopen (programmable)	C-S200
CANopen (DS 402)	C-S402
Ethernet Modbus TCP/IP (programmable)	T-S200
EtherCAT (DS 402)	E-S402
Profinet (programmable)	P-S200
PowerLink (DS 402)	R-S402
EtherNet IP (programmable)	H-S200

Stepper Motor ISI060
with Motion Controller - IP65

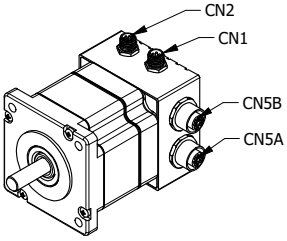
□ 60mm

1 - 3,1Nm





CONNECTOR CODE 1: CANopen, Modbus RTU, Modbus TCP/IP, EtherCAT



CONNECTOR CODE 2: EtherCAT, Modbus TCP/IP, Profinet, PowerLink, Ethernet IP

Integrated Brake available on request

Specification

	Model		...0082N	...0091N	...0102N	...0123N
1	Operating Voltage	VDC	12÷48	12÷48	12÷48	12÷48
2	Current/Phase	A	3	3	3	3
3	Resistance/Phase	Ω	0,68	0,8	0,98	1,2
4	Inductance/Phase	mH	1,7	3	3	5,4
5	Holding Torque	Nm	1	1,75	2,1	3,1
6	Rotor Inertia	gcm2	275	440	570	840
7	Detent Torque	Nm	0,05	0,069	0,088	0,098
8	Length (L)	mm	82	91	102	123
9	Weight	Kg	0,78	0,95	1,16	1,57

Characteristics

Item	
Step angle	1,8°
Step angle Accuracy	±5%
Protection Class	IP65
Working Temperature	+5°C to +40°C
Humidity	5% to 85% not condensing
Max. Temp. Rise (rated current, 2-phase on)	80°C
Max. Shaft Radial play (450g load)	0,02mm
Max. Shaft Axial play (450g load)	0,08mm
Max. Radial Force (20mm from front flange)	75 N
Max Axial Force	15 N
Dielectric Strength (for 1 min.)	500 VAC
Insulation Resistance (min. 500 VDC)	100 Mohm
Operating mode	Position, Speed, Torque
Protective functions	Over/Under voltage, Over current, Overheating, Short circuit
Debug & configuration	Serial interface (not for M-C)
Software*	Setup & config. - DL Studio
	Programming - DL Space
*Service SCI cable required and available on request	

Product code reference

ISI 060 0082 N E 1 000 M S200	
060	Frame size
0082	Motor length
N	Brake options (N= no brake)
E	Encoder options
1	Connector code
000	Other options
M	Fieldbus
S200	Protocol reference

Encoders

Type	Code
Magnetic Incremental 4096 CPR or Absolute Single turn encoder	E
Other options on request	

Other options

Item	Code
Standard	000
With End resistor 120Ω (for M-C fieldbus)	001

Connection

Connector	Type	Function	Code
CN1	M8 4P A-Code Male	Power/Logic	
CN2	M8 8P A-Code Male	Inputs/Outputs	
CN5A/B	M8 4P A-Code Female	Fieldbus (M-C-T-E)	1
CN5A/B	M12 4P D-Code Female	Fieldbus (T-E-P-R-H)	2

Cable kit available on request. More information can be found in the product manual on our website.

Input and Output		
Input	Digital	Up to 4 not isolated 5-24 Vdc PNP
	Analog (M-C fieldbus)	1 with potentiometer or 0-10 Vdc not isolated
Output	Digital	Up to 2 not isolated open drain, 5-24 Vdc 100mA

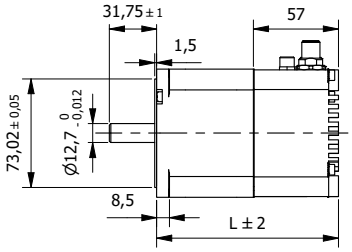
Interface Control Mode

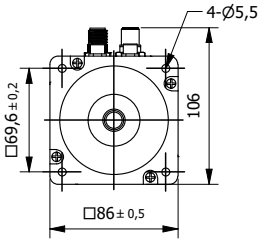
Fieldbus	Code
RS485 Modbus-RTU (programmable)	M-S200
CANopen (programmable)	C-S200
CANopen (DS 402)	C-S402
Ethernet Modbus TCP/IP (programmable)	T-S200
EtherCAT (DS 402)	E-S402
Profinet (programmable)	P-S200
PowerLink (DS 402)	R-S402
EtherNet IP (programmable)	H-S200

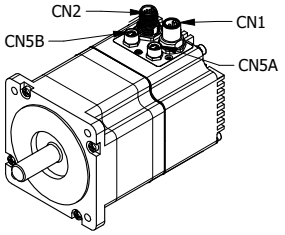
Stepper Motor ISS086
with Motion Controller

□ 86mm

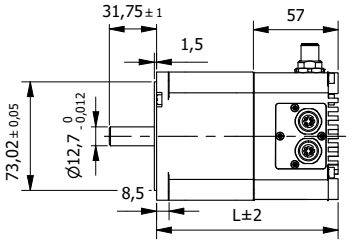
2,2 - 12Nm

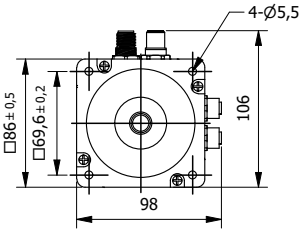


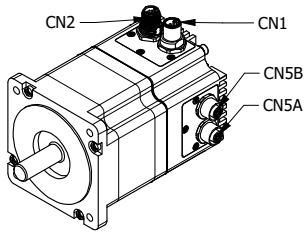




CONNECTOR CODE 1: CANopen, Modbus RTU, Modbus TCP/IP, EtherCAT







CONNECTOR CODE 2: EtherCAT, Modbus TCP/IP, Profinet, PowerLink, Ethernet IP

Integrated Brake available on request

Specification

	Model		...0122N	...0135N	...0156N	...0173N	...0212N
1	Operating Voltage	VDC	12÷48	12÷48	12÷48	12÷48	12÷48
2	Current/Phase	A	3	5,5	5,5	6	6,2
3	Resistance/Phase	Ω	1,14	0,42	0,47	0,5	0,68
4	Inductance/Phase	mH	6,8	3,5	4,5	6	9
5	Holding Torque	Nm	2,2	4,5	7	8,5	12
6	Rotor Inertia	gcm2	1000	1400	2700	2700	4000
7	Detent Torque	Nm	0,08	0,12	0,12	0,24	0,36
8	Length (L)	mm	122	135	156	173	212
9	Weight	Kg	2,19	2,79	3,29	4,29	5,89

Characteristics

Item	
Step angle	1,8°
Step angle Accuracy	±5%
Protection Class	IP30
Working Temperature	+5°C to +40°C
Humidity	5% to 85% not condensing
Max. Temp. Rise (rated current, 2-phase on)	80°C
Max. Shaft Radial play (450g load)	0,02mm
Max. Shaft Axial play (450g load)	0,08mm
Max. Radial Force (20mm from front flange)	220 N
Max Axial Force	60 N
Dielectric Strength (for 1 min.)	600 VAC
Insulation Resistance (min. 500 VDC)	100 Mohm
Operating mode	Position, Speed, Torque
Protective functions	Over/Under voltage, Over current, Overheating, Short circuit
Debug & configuration	Serial interface (not for M-C)
Software*	Setup & config. - DL Studio
	Programming - DL Space
*Service SCI cable required and available on request	

Product code reference

ISS 086 0122 N E 1 000 M S200	
086	Frame size
0122	Motor length
N	Brake options (N= no brake)
E	Encoder options
1	Connector code
000	Other options
M	Fieldbus
S200	Protocol reference

Encoders

Type	Code
Magnetic Incremental 4096 CPR or Absolute Single turn encoder	E
Other options on request	

Other options

Item	Code
Standard	000
With End resistor 120Ω (for M-C fieldbus)	001

Connection

Connector	Type	Function	Code
CN1	M12 5P L-Code Male	Power/Logic	
CN2	M12 12P A-Code Male	Inputs/Outputs	
CN5A/B	M8 4P A-Code Female	Fieldbus (M-C-T-E)	1
CN5A/B	M12 4P D-Code Female	Fieldbus (T-E-P-R-H)	2

Cable kit available on request. More information can be found in the product manual on our website.

Input and Output		
Input	Digital	4 not isolated 5-24 Vdc PNP
	Analog (M-C fieldbus)	2 with potentiometer or 0-10 Vdc not isolated
Output	Digital	2 not isolated open drain, 5-24 Vdc 100mA

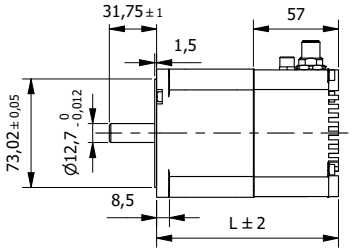
Interface Control Mode

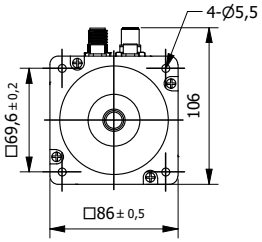
Fieldbus	Code
RS485 Modbus-RTU (programmable)	M-S200
CANopen (programmable)	C-S200
CANopen (DS 402)	C-S402
Ethernet Modbus TCP/IP (programmable)	T-S200
EtherCAT (DS 402)	E-S402
Profinet (programmable)	P-S200
PowerLink (DS 402)	R-S402
EtherNet IP (programmable)	H-S200

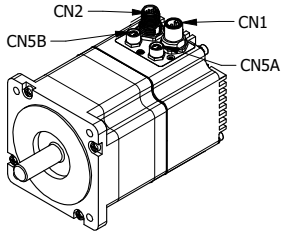
Stepper Motor ISI086
with Motion Controller - IP65

□ 86mm

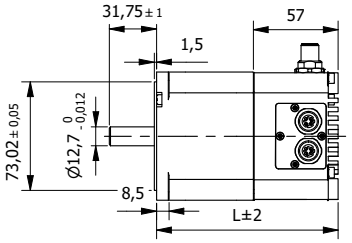
2,2 - 12Nm

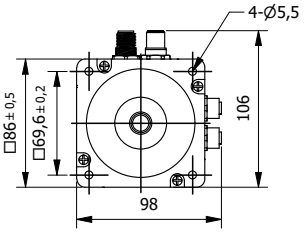


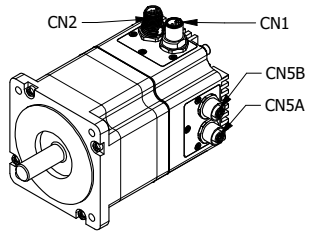




CONNECTOR CODE 1: CANopen, Modbus RTU, Modbus TCP/IP, EtherCAT







CONNECTOR CODE 2: EtherCAT, Modbus TCP/IP, Profinet, PowerLink, Ethernet IP

Integrated Brake available on request

Specification

	Model		...0122N	...0135N	...0156N	...0173N	...0212N
1	Operating Voltage	VDC	12÷48	12÷48	12÷48	12÷48	12÷48
2	Current/Phase	A	3	5,5	5,5	6	6,2
3	Resistance/Phase	Ω	1,14	0,42	0,47	0,5	0,68
4	Inductance/Phase	mH	6,8	3,5	4,5	6	9
5	Holding Torque	Nm	2,2	4,5	7	8,5	12
6	Rotor Inertia	gcm2	1000	1400	2700	2700	4000
7	Detent Torque	Nm	0,08	0,12	0,12	0,24	0,36
8	Length (L)	mm	122	135	156	173	212
9	Weight	Kg	2,19	2,79	3,29	4,29	5,89

Characteristics

Item	
Step angle	1,8°
Step angle Accuracy	±5%
Protection Class	IP65
Working Temperature	+5°C to +40°C
Humidity	5% to 85% not condensing
Max. Temp. Rise (rated current, 2-phase on)	80°C
Max. Shaft Radial play (450g load)	0,02mm
Max. Shaft Axial play (450g load)	0,08mm
Max. Radial Force (20mm from front flange)	220 N
Max Axial Force	60 N
Dielectric Strength (for 1 min.)	600 VAC
Insulation Resistance (min. 500 VDC)	100 Mohm
Operating mode	Position, Speed, Torque
Protective functions	Over/Under voltage, Over current, Overheating, Short circuit
Debug & configuration	Serial interface (not for M-C)
Software*	Setup & config. - DL Studio
	Programming - DL Space
*Service SCI cable required and available on request	

Product code reference

ISS 086 0122 N E 1 000 M S200	
086	Frame size
0122	Motor length
N	Brake options (N= no brake)
E	Encoder options
1	Connector code
000	Other options
M	Fieldbus
S200	Protocol reference

Encoders

Type	Code
Magnetic Incremental 4096 CPR or Absolute Single turn encoder	E
Other options on request	

Other options

Item	Code
Standard	000
With End resistor 120Ω (for M-C fieldbus)	001

Connection

Connector	Type	Function	Code
CN1	M12 5P L-Code Male	Power/Logic	
CN2	M12 12P A-Code Male	Inputs/Outputs	
CN5A/B	M8 4P A-Code Female	Fieldbus (M-C-T-E)	1
CN5A/B	M12 4P D-Code Female	Fieldbus (T-E-P-R-H)	2

Cable kit available on request. More information can be found in the product manual on our website.

Input and Output		
Input	Digital	4 not isolated 5-24 Vdc PNP
	Analog (M-C fieldbus)	2 with potentiometer or 0-10 Vdc not isolated
Output	Digital	2 not isolated open drain, 5-24 Vdc 100mA

Interface Control Mode

Fieldbus	Code
RS485 Modbus-RTU (programmable)	M-S200
CANopen (programmable)	C-S200
CANopen (DS 402)	C-S402
Ethernet Modbus TCP/IP (programmable)	T-S200
EtherCAT (DS 402)	E-S402
Profinet (programmable)	P-S200
PowerLink (DS 402)	R-S402
EtherNet IP (programmable)	H-S200

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_ Hollow shaft

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