esa UTOMOTION
The Powerful CNC Intelligence

Motori - Azionamenti
Motors - Drivers

VIS-600-800

Prestazioni e controllo, sempre al massimo.

I motori Esautomotion sono progettati per integrarsi perfettamente con i CNC VIS-800 e con gli azionamenti della serie EBS-EBSH. Dalle dimensioni particolarmente compatte per una più facile installazione, offrono sempre la coppia, l'inerzia e la potenza ideali per ogni tipologia di applicazione.

Performance and control, always at the top.

Esautomotion motors are designed to integrate seamlessly with VIS-800 CNCs and EBS-EBSH series drives. With particularly compact dimensions for easier installation, they always offer the ideal torque, inertia and power for every type of application.

60 anni di esperienza nell'automazione industriale, innovazione costante, passione italiana.
Questo è Esautomotion, lo specialista del CNC tecnologicamente evoluto.

60 years of experience industrial automation, constant innovation, Italian passion.
This is Esautomotion, the specialist of the most technologically advanced CNC.

Il nostro percorso di successo è iniziato quasi 60 anni fa e da allora abbiamo lanciato prodotti che hanno rivoluzionato il mercato dell'automazione industriale e del CNC. In Italia e nel mondo.

Our path of success has begun nearly 60 years ago and we have since launched products that have revolutionized the market of industrial automation and CNC. In Italy and in the world.

	I capitoli più importanti della nostra storia.	***The most important chapters in our history.***
1962	L'azienda viene fondata con il nome di ESA GV, con l'obiettivo di proporre soluzioni tecnologiche per l'automazione. È una delle prime, in Italia e in Europa, a presentare le schede elettroniche per la gestione di macchinari industriali.	*The company is founded with the name of ESA GV, with the aim of proposing technological solutions for automation. It is one of the first, in Italy and in Europe, to present electronic boards for the management of industrial machinery.*
1985	Lancio di Tria, il primo CNC con tecnologia "real time", che migliora in modo sostanziale le performance delle macchine automatiche.	*Launch of Tria, the first CNC with "real time" technology, which substantially improves the performance of automatic machines.*
2000	Nasce la serie Kvara, uno dei primi CNC PC-based e full-digital, che offre la possibilità di gestione degli assi e dei device esterni con Bus digitale e non più analogico.	*The Kvara series is born, one of the first PC-based and full-digital CNCs, which offers the possibility of managing axes and external devices with digital Bus.*
2006	Lancio della serie di CNC S500 e delle nuove famiglie di motori brushless E e ED. Esautomotion rivoluziona il mercato proponendo per prima l'idea di "Turn Key solution": il software è sempre incluso nel CNC, evitando al cliente l'ulteriore e costoso ricorso a sviluppatori o software house esterni, velocizzando così il time-to-market dei suoi progetti.	*Launch of the S500 CNC series and of the new families of E and ED brushless motors. Esautomotion revolutionizes the market by being the first to propose the idea of "Turn Key Solution": the software is always included in the CNC, avoiding to the customer the additional and costly use of external developers or software houses, thus speeding up the time-to-market of his projects.*
2011	Attraverso un buyout, ESA GV cambia proprietà e assume il nome di Esautomotion. L'obiettivo dei nuovi azionisti è di espandere significativamente il giro di affari della società attraverso forti investimenti nell'innovazione e nell'internazionalizzazione delle attività.	*Through a buyout, ESA GV changes ownership and takes the name of Esautomotion. The goal of the new shareholders is to significantly expand the company's turnover through strong investments in innovation and in the internationalization of activities.*
2014	Nasce la serie di CNC S600. La tecnologia full touch viene adottata per gli schermi di tutti i modelli.	*The S600 CNC series is born. Full touch technology is adopted for the screens of all models.*
2018	Quotazione alla Borsa di Milano per accedere a maggiori risorse economiche e cogliere ulteriori opportunità di crescita e diversificazione.	*Listing on the Milan Stock Exchange to access more financial resources and seize further opportunities for growth and diversification.*
	Trasferimento nella nuova e più spaziosa sede di Carpi, per migliorare sia la logistica che l'efficienza interna e dare un migliore servizio ai clienti.	*Transfer to the new and more spacious headquarters in Carpi, to improve both internal logistics and efficiency and provide better customer service.*
2019	Esautomotion è ormai un'azienda globalizzata, con sedi dirette in Germania, Spagna, USA, Brasile e Cina e una presenza tramite rivenditori negli altri Paesi industrialmente importanti.	*Esautomotion is now a globalized company, with direct offices in Germany, Spain, USA, Brazil and China and a presence through dealers in other industrialized important countries.*
2020	Nasce la serie VIS-800, massima espressione della tecnologia touch, della modularità e della comunicazione Ethercat full digital.	*The VIS-800 series is born, the highest expression of touch technology, modularity and full digital Ethercat communication.*
2023	Apertura filiali in Turchia, Stati Uniti ed acquisizione di Sangalli Servomotori.	*Opening of branches in Türkiye, USA and acquisition of Sangalli Servomotori.*

La filosofia di Esautomotion: offrire più valore ai clienti con i migliori CNC e il migliore livello di servizio del mercato.

La nostra mission è proporre ai clienti un'ampia offerta di prodotti, dispositivi e software evoluti che si integrino perfettamente con le parti meccaniche delle loro macchine, per automatizzarle secondo gli standard più elevati di efficienza e produttività, nel pieno rispetto delle logiche di Industria 4.0.

Le esigenze della clientela sono costantemente al centro della nostra attività: tutti i prodotti sono progettati per offrire un valore superiore e tangibile in termini di prestazioni migliori e di semplicità di utilizzo per gli operatori macchina.

The philosophy of Esautomotion: *offering higher value to customers through the best CNCs and service in the market.*

Our mission is to offer customers a wide range of advanced products, devices and software that integrate perfectly with the mechanical parts of their machines, to automate them according to the highest standards of efficiency and productivity, in full compliance with the logic of Industry 4.0.

Customer needs are constantly at the heart of our business: all products are designed to offer superior and tangible value in terms of better performance and ease of use for machine operators.

Potenza intelligente: il valore di prodotto esclusivo di Esautomotion.

Tutti gli addetti ai lavori posizionano i CNC Esautomotion saldamente tra i best in class del mercato, con punti di forza riconosciuti quali essere:

- **I CNC più potenti del mercato, grazie all'esclusiva architettura di progettazione.**
  La particolare architettura di progettazione consente di offrire in ogni situazione performance inarrivabili in termini di precisione e controllo. Con i modelli top di gamma è possibile gestire un numero praticamente illimitato di assi, rendendo fattibili lavorazioni ritenute fino a ieri irrealizzabili.

- **I CNC più intelligenti del mercato, perché i software "turn key" sono sempre inclusi.**
  Il software, sviluppato ad-hoc da Esautomotion secondo le specifiche esigenze di ogni cliente, è sempre incluso nella dotazione e rende il CNC immediatamente operativo, con un notevole risparmio a livello di costi e tempo.

- **I CNC più versatili del mercato: lo stesso hardware per tutte le applicazioni.**
  L'hardware di tutti i CNC Esautomotion può gestire tutte le applicazioni, come ad es: piegatura e taglio lamiera, lavorazione legno e marmo, general purpose. Questo si traduce in un notevole vantaggio per i clienti OEM, in termini di maggiore conoscenza dei dispositivi e ottimizzazione dell'inventario.

Intelligent power: the exclusive product value from Esautomotion.

All experts place Esautomotion CNC firmly among the best in class on the market, with recognized strengths such as:

- ***The most powerful CNC on the market, thanks to the exclusive design architecture.***
  The particular design architecture allows us to offer unrivalled performance in terms of precision and control in every situation. With the top of the range models it is possible to manage a practically unlimited number of axes, making it possible to work that was previously considered impossible.

- ***The smartest CNC on the market, because turn key software is always included.***
  The software, developed ad-hoc by Esautomotion according to the specific needs of each customer, is always included in the equipment and makes the CNC immediately operational, with considerable savings in terms of costs and time.

- ***The most versatile CNC on the market: the same hardware for all applications.***
  The hardware of all Esautomotion CNC can manage all applications, such as: sheet metal bending and cutting, wood and marble processing, general purpose. This translates into a significant advantage for OEM customers, in terms of greater knowledge of the devices and inventory optimization.

Valore per i clienti è anche un servizio di assistenza tecnica disponibile 24/7 in tutto il mondo.

Esautomotion mette a disposizione uno straordinario patrimonio di competenze sul CNC e l'automazione industriale maturato nei suoi 60 anni di attività.

Il nostro servizio di Assistenza Tecnica, formato da ingegneri e tecnici di elevata professionalità, è disponibile 7 giorni su 7 per risolvere ogni problematica tecnica, coprendo tutti i fusi orari grazie alla rete di filiali e rivenditori.

Value for customers is also a technical support service available 24/7 around the world.

Esautomotion provides an extraordinary wealth of skills on CNC and industrial automation gained in its 60 years of activity.

Our Technical Assistance service, made up of highly professional engineers and technicians, is available 7 days a week to solve any technical problem, covering all time zones thanks to the network of branches and dealers.

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400Vac Drives and Motors

DRIVE EBS

Questi drive sono stati sviluppati per realizzare una totale integrazione digitale con i CNC Esautomotion tramite bus di campo standard quali CAN open ed EtherCAT.

La gamma comprende nove taglie principali: EBS3, EBS6, EBS12, EBS18 EBS30, EBS42, EBS60, EBS80/120 ed EBS80/180.

L'alimentazione è diretta da rete (230Vac - 400Vac trifase).

Ogni convertitore è dotato di resistenza di frenatura interna, ad eccezione dei modelli EBS30, EBS42, EBS60, EBS80/120 ed EBS80/180.

Su tutti i modelli è possibile montare una resistenza di frenatura esterna.

Per questi drives è richiesta un'alimentazione di servizio di 24Vdc (-15+ 20%).

CARATTERISTICHE PRINCIPALI

- Possibilità di gestire due schede opzionali (feedback, fieldbus, espansioni I/O, ecc..).
- Gestione di 5 ingessi e 3 uscite digitali programmabili.
- Gestione di trasduttori di tipo TTL + sensori HALL, Hiperface, Smart ABS, BISS-C.
- Regolazione, di tipo vettoriale, realizzata tramite un DSP di ultima generazione. All'interno del drive sono "chiusi" l'anello di corrente e di velocità con un cycle time rispettivamente di 62,5 e 250 microsecondi.
- Gestione automatica del freno elettromeccanico, con protezioni di mancanza freno e di sovracorrente circuito freno.
- Implementazione delle seguenti protezioni:
  - Sovracorrente convertitore,
  - I2t IGBT e motore con soglia di preallarme e allarme,
  - Anomalie circuito di frenatura,
  - Anomalia circuito freno elettromeccanico,
  - Rotture/sconnessione encoders,
  - Sovra-velocità motore.

EBS DRIVES

These drives have been designed to achieve total digital integration with Esautomotio's CNCs, using standard fieldbus such as CAN open and EtherCAT.

The complete range includes nine main sizes: EBS3, EBS6, EBS12 EBS18, EBS30, EBS 42, EBS60, EBS80/120 and EBS80/180.

They are powered straight from the mains (230Vac - 400 Vac three-phase).

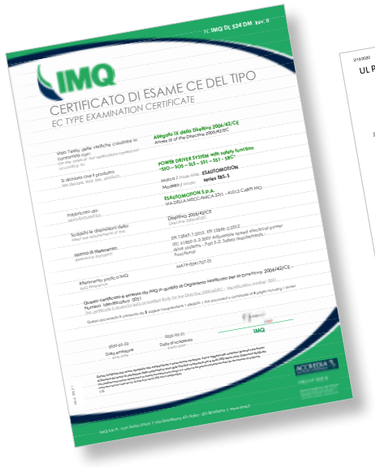
Each converter is equipped with an internal brake resistance with the exception of models EBS30, EBS42, EBS60, EBS80/120 and EBS80/180.

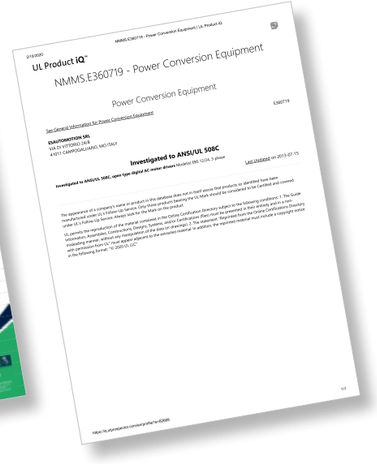
An external brake resistance can also be installed.

24Vdc (-15+ 20%) power is required for these drives.

MAIN FEATURES

- *Two optional boards can be controlled (feedback, fieldbus, I/O expansion, etc..).*
- *Management of 5 inputs and 3 outputs of the programmable digital type.*
- *Management of TTL + HALL sensor, Hiperface, Smart ABS, BISS-C transducer.*
- *Vectorial regulation is achieved by means of a latest generation DSP. The current loop and speed are "enclosed" in the drive with a cycle time of 62.5 and 250 microseconds, respectively.*
- *Automatic control of the electromechanical brake, with protection against brake failure and brake circuit overcurrent.*
- *The following protections are implemented:*
  - *Converter overcurrent,*
  - *I2t IGBT and motor with pre-alarm and alarm threshold,*
  - *Faulty brake circuit,*
  - *Faulty electromechanical brake circuit,*
  - *Breakage/disconnection of encoders,*
  - *Motor overspeed*

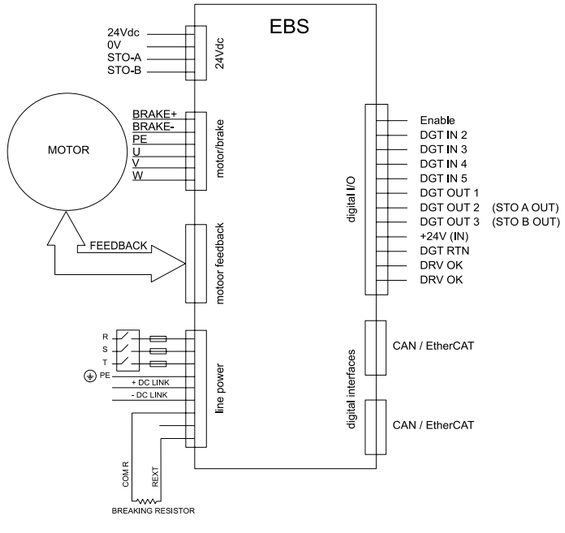




EBS Technical Data

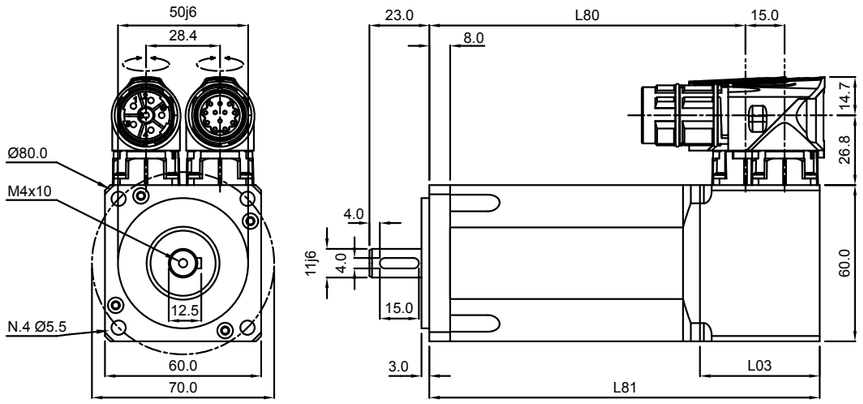
Model		EBS3/6	EBS6/12	EBS12/24	EBS18/36	EBS30/60	EBS42/84	EBS60/120	EBS80/120	EBS80/180
Output current	Arms	3 cont 6x5 sec	6 cont 12x5 sec	12 cont 24x5 sec	17 cont 34x5 sec	30 cont 60x5 sec	42 cont 84x5 sec	60 cont 120 x 5 sec	80 cont 120 x 5 sec	80 cont 180 x 5 sec
Dimensions (L x H x D)	mm	66 x 265 x 164,5		86 x 265 x 164,5		169 x 360 x 232,3		170 x358 x 246		
Threephase power supply voltage rating	Vac	230±10% / 400±10%						230±10% / 480±10%		
Bus DC rated voltage	Vda	320±10% / 566±10%						320±10% / 676±10%		
Suppliable steady current	A	3	6	12	17	30	42	60	80	80
Peak current (Max 5s)	A	6	12	24	34	60	84	120	120	180
DC bus capacitors	uF	235	235	500	500	1230	1500	2040		
Rated power output	KW	1,29	2,59	5,74	8,13	14,3	20,1	35,3	47,2	47,2
Auxiliary power supply	Vdc	24 +15% / -10%								
Current Input at +24Vdc (brake excluded)	A	0,4	0,4	0,4	0,4	0,6	0,6	0,7		
Power dissipated by drive in rated condition (400Vac)	W	50	80	150	200	350	500	750	1050	1050
Max continuous braking power on internal resistor	W	25		50		N.A.*		N.A.*		
Max peak braking power on internal resistor (0.5 sec)	KW	5		10		N.A.*		N.A.*		
Max continuous braking power on external resistor	W	1000		1500		5000		10000		
Internal resistor value	Ω	100		50		N.A.*				
External resistor value	Ω	>66		>33		>12,5		>10		
Tripping voltage of brake circuit	V	390 / 720						391 / 836		

N.A.* Not available



Square 60 mm Motors

Electrical Characteristics		E-060-60-007	E-060-60-017
Stall Torque (ΔT 100 °C) - To	Nm	0,7	1,7 (S3-60%)/1,4(S1)
Stall Current - Io	Arms	0,96	2,16 (S3-60%)/1,73(S1)
Max velocity - Nmax	rpm	6000	6000
Max current - Imax	Arms	3,9	6,6
Max torque - Tmax	Nm	2,4	4,6
Voltage constant – Ke	V/Krpm	44	49
Torque constant - Kt	Nm/A	0,73	0,81
Rotor inertia - Jr	gm²	0,013	0,023
Weight without brake - M	Kg	1,2	1,7
Nominal power - Pn	W	200	540 (S3-60%)/400(S1)
Power connector		M23	M23



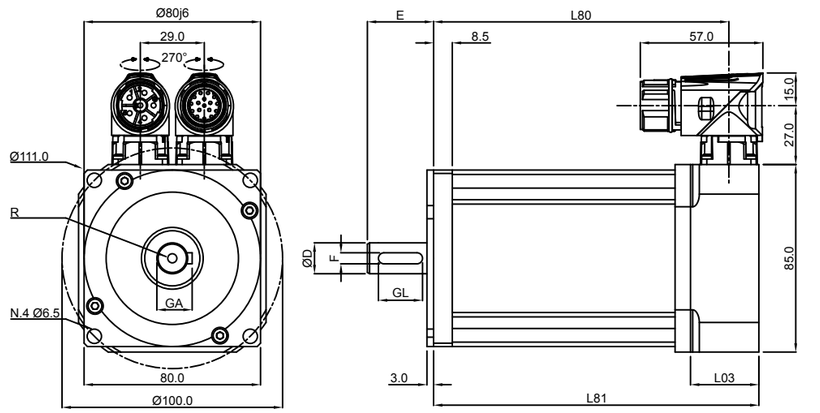
Motor's lenght		E-060-60-007	E-060-60-017
		TTL 2048 Smart ABS Hip SKM36	TTL 2048 Smart ABS Hip SKM36
L80	mm	93,5	121,5
L81	mm	122,0	150,0
L80 with brake	mm	123,9	151,9
L81 with brake	mm	152,4	180,4
L03	mm	46	46

Brake Characteristics		E-060-60-007	E-060-60-017
Supply Voltage	Vdc	24 +/- 6% @ 0,46Adc	
Braking Torque @20°C	Nm	2	
Inertia	gm²	0,01	
Weight	Kg	0,3	
Ton/Toff	ms	6/25	

Square 80 mm Motors

Electrical Characteristics		E-080-35-014	E-080-60-014	E-080-35-028	E-080-60-028	E-080-35-039	E-080-60-039
Stall Torque (ΔT 100 °C) - To	Nm	1,4		2,8		3,9	
Stall current - Io	Arms	1,15	1,8	2,15	3,5	3,1	4,9
Max velocity - Nmax	rpm	3500	6000	3500	6000	3500	6000
Max current - Imax	Arms	4,6	7,2	8,6	14	12,4	19,6
Max torque - Tmax	Nm	5		9,5		13	
Voltage constant – Ke	V/Krpm	80	49	79	48	80	48
Torque constant - Kt	Nm/A	1,323	0,81	1,307	0,794	1,323	0,794
Rotor inertia - Jr	gm²	0,077		0,142		0,21	
Weight without brake - M	Kg	1,9		2,7		3,5	
Nominal power - Pn	W	370		720		970	
Power connector		M23	M23	M23	M23	M23	M23

Shaft **		
ØD	14J6	19J6
E	30	40
GL	20	32
GA	16	21,5
F	5	6
R	M5x15	M6x16



Motor's lenght		E-080-□□-014				E-080-□□-028				E-080-□□-039			
		TTL 2048 Smart ABS		Hip SKM36		TTL 2048 Smart ABS		Hip SKM36		TTL 2048 Smart ABS		Hip SKM36	
Shaft ØD		14	19	14	19	14	19	14	19	14	19	14	19
L80	mm	83,5	93,5	98,5	108,5	108,5	118,5	123,5	133,5	133,5	143,5	148,5	158,5
L81	mm	97,5	107,5	112,5	122,5	122,5	132,5	137,5	147,5	147,5	157,5	162,5	172,5
L80 with brake	mm	135,1		150,1		160,1		175,1		185,1		200,1	
L81 with brake	mm	149,1		164,1		174,1		189,1		199,1		214,1	
L03	mm	31		46		31		46		31		46	

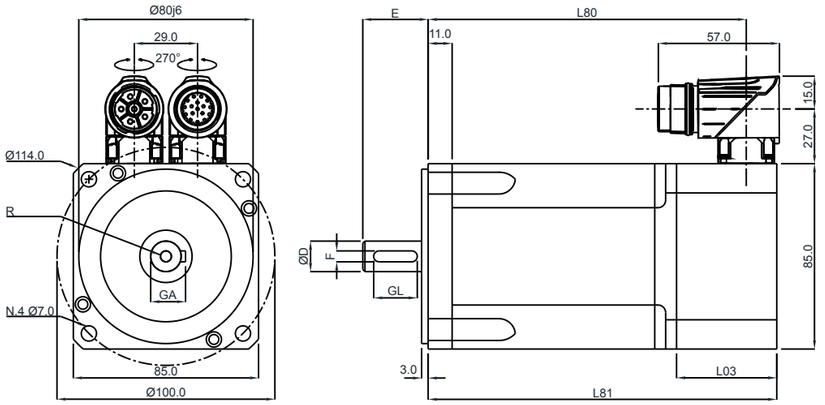
** standard shaft 14J6 – Optional shaft 19J6 on request

Brake Characteristics		E-080-□□-014	E-080-□□-028	E-080-□□-039
Supply Voltage	Vdc	24 +/- 6% @ 0,75Adc		
Braking Torque	Nm	9		
Inertia	gm²	0,06		
Weight	Kg	1		
Ton/Toff	ms	7/40		

Square 85 mm Motors

Electrical Characteristics		E-085-50-010	E-085-35-015	E-085-60-015	E-085-35-029	E-085-60-029	E-085-35-042	E-085-60-042	E-085-30-053	E-085-50-053	E-085-60-053
Stall Torque (ΔT 100 °C) - To	Nm	1	1,5		2,9		4,2		5,3		
Stall current - Io	Arms	1,1	1,05	1,65	2	3,2	2,9	4,6	3,4	5,8	8
Max velocity - Nmax	rpm	5000	3500	5800	3500	5800	3500	5800	3000	5000	6000
Max current - Imax	Arms	5	4,4	6,9	8,2	13	11	18	14	23	32
Max torque - Tmax	Nm	3,6	5,2		10		14		18		
Voltage constant – Ke	V/Krpm	56	86	55	88	55	88	55	93	55	40
Torque constant - Kt	Nm/A	0,93	1,42	0,91	1,45	0,91	1,46	0,91	1,54	0,91	0,66
Rotor inertia - Jr	gm²	0,07	0,092		0,172		0,253		0,333		
Weight without brake - M	Kg	2	2,4		3,5		4,6		5,7		
Nominal power - Pn	W	280	400		700		1000		1200		
Power connector		M23	M23		M23		M23		M23		

Shaft **		
ØD	14J6	19J6
E	30	40
GL	20	32
GA	16	21,5
F	5	6
R	M5x15	M6x16



Motor's lenght		E-085-50-010			E-085-□□-015				E-085-□□-029				E-085-□□-042				E-085-□□-053			
		TTL 2048	Smart ABS	Hip SKM36	TTL 2048 Smart ABS		Hip SKM36		TTL 2048 Smart ABS		Hip SKM36		TTL 2048 Smart ABS		Hip SKM36		TTL 2048 Smart ABS		Hip SKM36	
Shaft ØD		14	14	14	14	19	14	19	14	19	14	19	14	19	14	19	14	19	14	19
L80	mm	73,5	78,4	83,5	101	111	116	126	131	141	146	156	161	171	176	186	191	201	206	216
L81	mm	87	92	107	115	125	130	140	145	155	160	170	175	185	190	200	205	215	220	230
L80 with brake	mm	101,5	106,4	111,5	149		164		179		194		209		224		239		254	
L81 with brake	mm	115	120	135	163		178		193		208		223		238		253		268	
L03	mm	26	31	46	31		46		31		46		31		46		31		46	

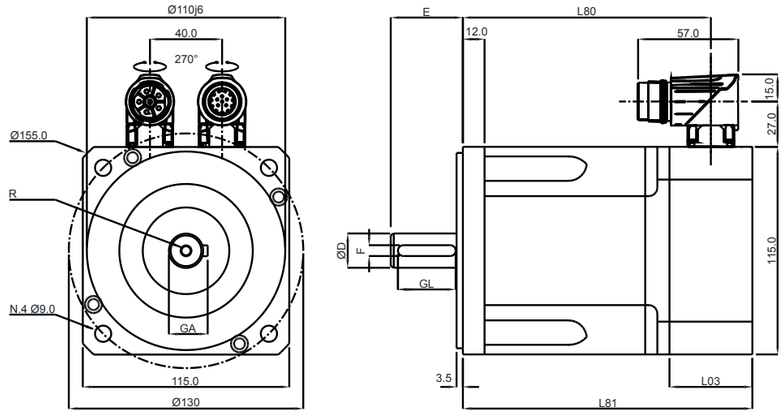
** standard shaft 14J6 – Optional shaft 19J6 on request

Brake Characteristics		E-085-50-010	E-085-□□-015	E-085-□□-029	E-085-□□-042	E-085-□□-053
Supply Voltage	Vdc	24 +/- 6% @ 0,46Adc	24 +/- 6% @ 0,75Adc			
Braking Torque	Nm	2	9			
Inertia	gm²	0,01	0,06			
Weight	Kg	0,3	1			
Ton/Toff	ms	6/25	7/40			

Square 115 mm Motors

Electrical Characteristics		E-115-50-021	E-115-30-040	E-115-60-040	E-115-30-076	E-115-50-076	E-115-60-076	E-115-30-113	E-115-50-113	E-115-60-113
Stall Torque (ΔT 100 °C) - To	Nm	2,1	4		7,6			11,3		
Stall current - Io	Arms	1,8	2,5	4,4	4,7	7,8	7,8	7	12	17
Max velocity - Nmax	rpm	5000	3000	6000	3000	5000	5500	3000	5000	6000
Max current - Imax	Arms	9	10	18	19	32	32	29	48	68
Max torque - Tmax	Nm	7,1	14		26			39		
Voltage constant – Ke	V/Krpm	61	96	55	98	59	59	98	59	41
Torque constant - Kt	Nm/A	1	1,59	0,91	1,62	0,98	0,98	1,62	0,98	0,68
Rotor inertia - Jr	gm²	0,28	0,5		0,96			1,4		
Weight without brake - M	Kg	3,6	5,6		8,5			11,4		
Nominal power - Pn	W	570	1000		1700			2400		
Power connector		M23	M23	M23	M23	M23	M23	M23	M23	M23

Shaft **		
ØD	19J6	24J6
E	40	50
GL	32	32
GA	21,5	27
F	6	8
R	M6x16	M8x15



Motor's Lengths		E-115-50-021			E-115-□□-040		E-115-□□-076		E-115-□□-113	
		TTL 2048	Smart ABS	Hip SKM36	TTL 2048 Smart ABS	Hip SKM36	TTL 2048 Smart ABS	Hip SKM36	TTL 2048 Smart ABS	Hip SKM36
L80	mm	80,5	85,5	91	132	137,5	172	177,5	212	217,5
L81	mm	94	100	114	146,5	160,5	186,5	200,5	226,5	240,5
L80 with brake	mm	124	129,1	134,6	181	186,5	221	226,5	261	266,5
L81 with brake	mm	137,6	143,6	157,6	195,5	209,5	235,5	249,5	275,5	289,5
L03	mm	26	32	46	32	46	32	46	32	46

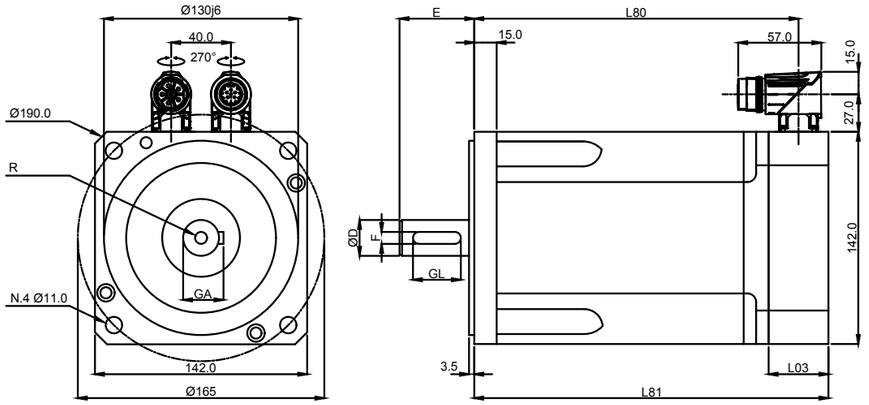
** standard shaft 19J6 – Optional shaft 24J6 on request

Brake Characteristics		E-115-50-021	E-115-□□-040	E-115-□□-076	E-115-□□-113
Supply Voltage	Vdc	24 +/- 6% @ 0,75Adc	24 +/- 6% @ @1Adc		
Braking Torque	Nm	9	18		
Inertia	gm²	0,06	0,24		
Weight	Kg	1,0	1,4		
Ton/Toff	ms	7/40	10/50		

Square 142 mm Motors

Electrical Characteristics		E-142-50-050	E-142-30-100	E-142-50-100	E-142-60-100	E-142-30-190	E-142 -45-190	E-142-60-190	E-142-30-270	E-142-45-270	E-142-50-270	E-142-30-350	E-142-40-350
Stall Torque (ΔT 100 °C) - To	Nm	5	10			19			27			35	
Stall current - Io	Arms	4.6	6,5	9,8	12	12	16	21	15	21	25	20	25
Max velocity - Nmax	rpm	5000	3000	5000	6000	3000	4500	5800	3000	4500	5000	3000	4000
Max current - Imax	Arms	19	27	41	51	50	64	82	64	87	103	80	100
Max torque - Tmax	Nm	17	35			64			94			118	
Voltage constant – Ke	V/Krpm	66	93	62	49	93	72	56	106	78	66	106	85
Torque constant - Kt	Nm/A	1,1	1,54	1,03	0,81	1,54	1,19	0,93	1,75	1,29	1,09	1,75	1,41
Rotor inertia - Jr	gm2	1,2	2,2			4,3			6,5			8,7	
Weight without brake - M	Kg	6	11			16			21			26	
Nominal power - Pn	W	1100	2400			3700			3800			4900	
Power connector		M23	M23	M23	M23	M23	M23	M40	M23	M40	M40	M40	M40

Shaft **		
ØD	24J6	32K6
E	50	58
GL	32	45
GA	27	35
F	8	10
R	M8x15	M12x22



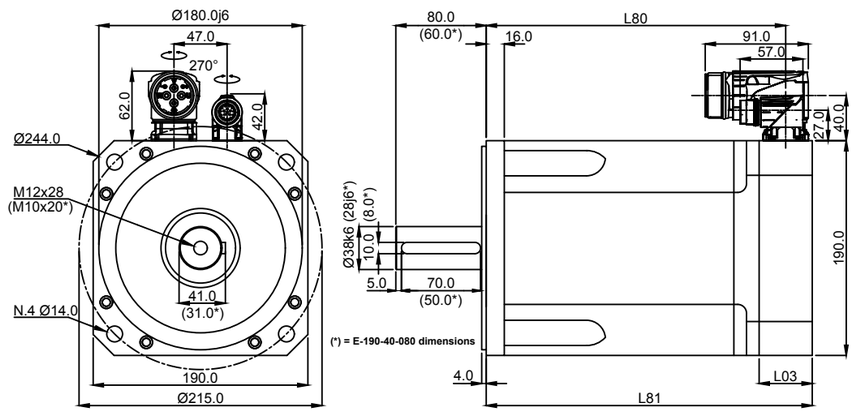
Motor's Lengths		E-142-50-050			E-142-□□-100		E-142-□□-190			E-142-□□-270			E-142-□□-350
		TTL 2048	Smart ABS	Hip SKM36	TTL 2048	Smart ABS Hip SKM36	TTL 2048		Smart ABS Hip SKM36	TTL 2048		Smart ABS Hip SKM36	TTL 2048 Smart ABS Hip SKM36
		M23	M23	M23	M23	M23	M23	M40	M23-M40	M23	M40	M23-M40	M40
L80	mm	95	99	104,5	160.5	167	210.5	217	217	260,5	267	267	317
L81	mm	108,5	113,5	124,5	174	187	224	237	237	274	287	287	337
L80 with brake	mm	134,5	138,5	144	214	220,5	264	270,5	270,5	314	320,5	320,5	370,5
L81 with brake	mm	148	153	164	227,5	240,5	277,5	290,5	290,5	327,5	340,5	340,5	390,5
L03	mm	27	32	43	27	40	27	40	40	27	40	40	40

** standard shaft 24J6 – Optional shaft 32K6 on request

Brake Characteristics		E-142-50-050	E-142-□□-100	E-142-□□-190	E-142-□□-270	E-142-□□-350
Supply Voltage	Vdc	24 +/- 6% @ 1Adc	24 +/- 6% @ 1Adc			
Braking Torque	Nm	18	40			
Inertia	gm²	0,24	1,37			
Weight	Kg	1,4	3,1			
Ton/Toff	ms	10/50	22/90			

Square 190 mm Motors

Electrical Characteristics		E-190 -40-080	E-190 -30-150	E-190 -40-150	E-190 -25-280	E-190 -40-280	E-190 -20-500	E-190 -30-500	E-190 -40-500	E-190 -20-700	E-190 -30-700
Stall Torque (ΔT 100 °C) - To	Nm	8	15		28		50			70	
Stall current - Io	Arms	6	9,1	11	13	24	18	28	36	26	39
Max velocity - Nmax	rpm	4000	3000	4000	2500	4000	2000	3000	4000	2000	3000
Max current - Imax	Arms	18	29	36	39	73	55	87	111	80	120
Max torque - Tmax	Nm	21	40		72		130			180	
Voltage constant – Ke	V/Krpm	80	100	79	134	71	169	108	84,5	162	108
Torque constant - Kt	Nm/A	1,32	1,66	1,31	2,22	1,17	2,8	1,79	1,4	2,68	1,79
Rotor inertia - Jr	gm2	2,7	5,4		9,1		17,7			26,4	
Weight without brake - M	Kg	10	17		23		36			50	
Nominal power - Pn	W	2000	3100		4000		5500			7400	
Power connector		M23	M23	M23	M40	M40	M40	M40	M40	M40	M40



Motor's Lengths		E-190-40-080			E-190-□□-150		E-190-□□-280	E-190-□□-500	E-190-□□-700
		TTL 2048	Smart ABS	Hip SKM36	TTL 2048	Smart ABS Hip SKM36	TTL 2048 /Smart ABS Hip SKM36	TTL 2048 /Smart ABS Hip SKM36	TTL 2048 / Smart ABS Hip SKM36
		M23	M23	M23	M23	M23	M40	M40	M40
L80	mm	106,5	110,5	116,5	139,5	159,5	194,5	264,5	334,5’
L81	mm	120	125	140	163	183	218	288	358
L80 with brake	mm	143,5	147,5	153,5	210	230	265	335	405
L81 with brake	mm	157	162	177	233,5	253,5	288,5	358,5	428,5
L03	mm	27	32	47	27	47	47	47	47

Brake Characteristics		E-190-40-080	E-190-□□-150	E-190-□□-280	E-190-□□-500	E-190-□□-700
Supply Voltage	Vdc	24 +/- 6% @ 1Adc	24 +/- 6% @ 1,46Adc			
Braking Torque	Nm	40	72			
Inertia	gm²	1,37	4,36			
Weight	Kg	3,1	6,9			
Ton/Toff	ms	22/90	25/140			

E Motors - EBS Drive Pairing Table

Motor	DRIVE	Stall torque (Nm)	Peak Torque (Nm)	Max Velocity (rpm)
E-060-60-007-…	EBS 3/6	0,7	2,4	6000
E-060-60-017-…	EBS 3/6	17 (S3-60%)	4,6	6000
E-080-35-014-…	EBS 3/6	1,4	5	3500
E-080-60-014-…	EBS 3/6	1,4	4,9	6000
E-080-35-028…	EBS 3/6	2,8	7,8	3500
E-080-60-028-…	EBS 6/12	2,8	9,5	6000
E-085-35-039-…	EBS 6/12	3,9	13	3500
E-085-60-039-…	EBS 6/12	3,9	9,5	6000
E-085-50-010-…	EBS 3/6	1	3,6	5000
E-085-35-015-…	EBS 3/6	1,5	5,2	3500
E-085-60-015-…	EBS 3/6	1,5	5,2	5800
E-085-35-029-…	EBS 3/6	2,9	8,7	3500
E-085-60-029-…	EBS 6/12	2,9	10	5800
E-085-35-042-…	EBS 3/6	4,2	8,7	3500
E-085-60-042-…	EBS 6/12	4,2	10,9	5800
E-085-30-053-…	EBS 6/12	5,3	18	3000
E-085-50-053-…	EBS 6/12	5,3	10,9	5000
E-085-60-053-…	EBS 12/24	5,3	15,8	6000
E-115-50-021-…	EBS 3/6	2,1	6,0	5000
E-115-30-040-…	EBS 3/6	4	9,5	3000
E-115-60-040-…	EBS 6/12	4	11	6000
E-115-30-076-…	EBS 6/12	7,6	19,5	3000
E-115-50-076-…	EBS 12/24	7,6	23,5	5000
E-115-60-076-…	EBS 12/24	7,6	23,5	5500
E-115-30-113-…	EBS 12/24	11,3	38,9	3000
E-115-50-113-…	EBS 12/24	11,3	23,5	5000
E-115-60-113-…	EBS 18/36	11,3	23	6000
	EBS 30/60	11,3	39	6000
E-142-50-050-…	EBS 6/12	5	13,2	5000
E-142-30-100-…	EBS 12/24	10	35	3000
E-142-50-100-…	EBS 12/24	10	24,5	5000
E-142-60-100-…	**EBS 12/24****	**9,7****	**19****	**6000****
	EBS 18/36	10	27,5	6000
E-142-30-190-…	EBS 18/36	19	52	3000
	EBS 30/60	19	64	3000
E-142-45-190-…	EBS 18/36	19	40	4500
	EBS 30/60	19	64	4500
E-142-60-190-…	EBS30/60	19	56	5800
E-142-30-270-…	EBS 18/36	27	59	3000
	EBS 30/60	27	94	3000
E-142-45-270-…	EBS 30/60	27	77	4500
E-142-50-270-…	EBS 30/60	27	66	5000
E-142-30-350-…	EBS 30/60	35	105	3000
E-142-40-350-…	EBS 30/60	35	85	4000
E-190-40-080-…	EBS 6/12	8	18	4000
E-190-30-150-…	EBS 12/24	15	40	3000
E-190-40-150-…	EBS 12/24	15	31,5	4000
E-190-25-280-…	EBS 18/36	28	72	2500
E-190-40-280-…	EBS 30/60	28	72	4000
E-190-20-500-…	EBS 30/60	50	130	2000
E-190-30-500-…	EBS 30/60	50	107	3000
E-190-40-500-…	EBS 42/84	50	117	4000
E-190-20-700-…	EBS 30/60	70	160	2000
E-190-30-700-…	EBS 42/84	70	150	3000

**In bold style are enhanced the configurations where the drive limits the continous torque that motor can supply

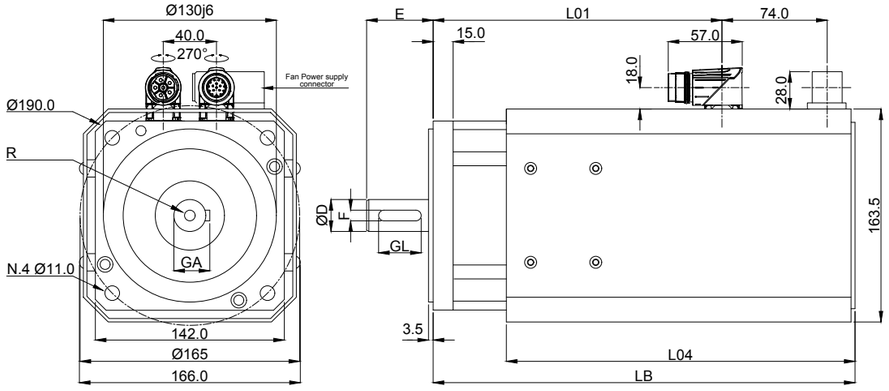
E Motors – EBS Drive - Power/Feedback Cables

Motor	Stall Current [Arms]	Connectors		EBS Drive	Power Cable				Feedback Cables	
		Power	Feedback		Motor without Brake		Motor with Brake		TTL 2048 Hip SMK36	Samrt ABS
					Type	Code	Type	Code		
E-060-60-007-…	0,96	M23	M23	EBS 3/6	4G1,5	CMT.001.□□□	4G1,5+2x1	CMT.003.□□□	CMT.022.□□□	CMT.A1A3.□□□
E-060-60-017-…	2,16	M23	M23	EBS 3/6	4G1,5	CMT.001.□□□	4G1,5+2x1	CMT.003.□□□	CMT.022.□□□	CMT.A1A3.□□□
E-080-35-014-…	1,15	M23	M23	EBS 3/6	4G1,5	CMT.001.□□□	4G1,5+2x1	CMT.003.□□□	CMT.022.□□□	CMT.A1A3.□□□
E-080-60-014-…	1,8	M23	M23	EBS 3/6	4G1,5	CMT.001.□□□	4G1,5+2x1	CMT.003.□□□	CMT.022.□□□	CMT.A1A3.□□□
E-080-35-028-…	2,15	M23	M23	EBS 3/6	4G1,5	CMT.001.□□□	4G1,5+2x1	CMT.003.□□□	CMT.022.□□□	CMT.A1A3.□□□
E-080-60-028-…	3,5	M23	M23	EBS 6/12	4G1,5	CMT.001.□□□	4G1,5+2x1	CMT.003.□□□	CMT.022.□□□	CMT.A1A3.□□□
E-080-35-039-…	3,1	M23	M23	EBS 6/12	4G1,5	CMT.001.□□□	4G1,5+2x1	CMT.003.□□□	CMT.022.□□□	CMT.A1A3.□□□
E-080-60-039-…	4,9	M23	M23	EBS 6/12	4G1,5	CMT.001.□□□	4G1,5+2x1	CMT.003.□□□	CMT.022.□□□	CMT.A1A3.□□□
E-085-50-010-…	1,1	M23	M23	EBS 3/6	4G1,5	CMT.001.□□□	4G1,5+2x1	CMT.003.□□□	CMT.022.□□□	CMT.A1A3.□□□
E-085-35-015-…	1,05	M23	M23	EBS 3/6	4G1,5	CMT.001.□□□	4G1,5+2x1	CMT.003.□□□	CMT.022.□□□	CMT.A1A3.□□□
E-085-60-015-…	1,65	M23	M23	EBS 3/6	4G1,5	CMT.001.□□□	4G1,5+2x1	CMT.003.□□□	CMT.022.□□□	CMT.A1A3.□□□
E-085-35-029-…	2	M23	M23	EBS 3/6	4G1,5	CMT.001.□□□	4G1,5+2x1	CMT.003.□□□	CMT.022.□□□	CMT.A1A3.□□□
E-085-60-029-…	3,2	M23	M23	EBS 6/12	4G1,5	CMT.001.□□□	4G1,5+2x1	CMT.003.□□□	CMT.022.□□□	CMT.A1A3.□□□
E-085-35-042-…	2,9	M23	M23	EBS 3/6	4G1,5	CMT.001.□□□	4G1,5+2x1	CMT.003.□□□	CMT.022.□□□	CMT.A1A3.□□□
E-085-60-042-…	4,6	M23	M23	EBS 6/12	4G1,5	CMT.001.□□□	4G1,5+2x1	CMT.003.□□□	CMT.022.□□□	CMT.A1A3.□□□
E-085-30-053-…	3,4	M23	M23	EBS 6/12	4G1,5	CMT.001.□□□	4G1,5+2x1	CMT.003.□□□	CMT.022.□□□	CMT.A1A3.□□□
E-085-50-053-…	5,8	M23	M23	EBS 6/12	4G1,5	CMT.001.□□□	4G1,5+2x1	CMT.003.□□□	CMT.022.□□□	CMT.A1A3.□□□
E-085-60-053-…	8	M23	M23	EBS 12/24	4G2,5	CMT.007.□□□	4G2,5+2x1	CMT.008.□□□	CMT.022.□□□	CMT.A1A3.□□□
E-115-50-021-…	2,1	M23	M23	EBS 3/6	4G1,5	CMT.001.□□□	4G1,5+2x1	CMT.003.□□□	CMT.022.□□□	CMT.A1A3.□□□
E-115-30-040-…	2,5	M23	M23	EBS 3/6	4G1,5	CMT.001.□□□	4G1,5+2x1	CMT.003.□□□	CMT.022.□□□	CMT.A1A3.□□□
E-115-60-040-…	4,4	M23	M23	EBS 6/12	4G1,5	CMT.001.□□□	4G1,5+2x1	CMT.003.□□□	CMT.022.□□□	CMT.A1A3.□□□
E-115-30-076-…	4,7	M23	M23	EBS 6/12	4G1,5	CMT.001.□□□	4G1,5+2x1	CMT.003.□□□	CMT.022.□□□	CMT.A1A3.□□□
E-115-50-076-…	7,8	M23	M23	EBS 12/24	4G2,5	CMT.007.□□□	4G2,5+2x1	CMT.008.□□□	CMT.022.□□□	CMT.A1A3.□□□
E-115-60-076-…	7,8	M23	M23	EBS 12/24	4G2,5	CMT.007.□□□	4G2,5+2x1	CMT.008.□□□	CMT.022.□□□	CMT.A1A3.□□□
E-115-30-113-…	7	M23	M23	EBS 12/24	4G2,5	CMT.007.□□□	4G2,5+2x1	CMT.008.□□□	CMT.022.□□□	CMT.A1A3.□□□
E-115-50-113-…	12	M23	M23	EBS 12/24	4G2,5	CMT.007.□□□	4G2,5+2x1	CMT.008.□□□	CMT.022.□□□	CMT.A1A3.□□□
E-115-60-113-…	17	M23	M23	EBS 18/36	4G4	CMT.005.□□□	4G4+2x1	CMT.006.□□□	CMT.022.□□□	CMT.A1A3.□□□
				EBS 30/60						
E-142-50-050-…	4,6	M23	M23	EBS 6/12	4G1,5	CMT.001.□□□	4G1,5+2x1	CMT.003.□□□	CMT.022.□□□	CMT.A1A3.□□□
E-142-30-100-…	6,5	M23	M23	EBS 12/24	4G2,5	CMT.007.□□□	4G2,5+2x1	CMT.008.□□□	CMT.022.□□□	CMT.A1A3.□□□
E-142-50-100-…	9,8	M23	M23	EBS 12/24	4G2,5	CMT.007.□□□	4G2,5+2x1	CMT.008.□□□	CMT.022.□□□	CMT.A1A3.□□□
E-142-60-100-…	12	M23	M23	EBS 12/24	4G2,5	CMT.007.□□□	4G2,5+2x1	CMT.008.□□□	CMT.022.□□□	CMT.A1A3.□□□
				EBS 18/36	4G4	CMT.005.□□□	4G4+2x1	CMT.006.□□□		
E-142-30-190-…	12	M23	M23	EBS 18/36	4G4	CMT.005.□□□	4G4+2x1	CMT.006.□□□	CMT.022.□□□	CMT.A1A3.□□□
				EBS 30/60						
E-142-45-190-…	16	M23	M23	EBS 18/36	4G4	CMT.005.□□□	4G4+2x1	CMT.006.□□□	CMT.022.□□□	CMT.A1A3.□□□
				EBS 30/60						
E-142-60-190-…	21	**M40**	M23	EBS 30/60	4G6	CMT.013.□□□	4G6+2x1	CMT.014.□□□	CMT.022.□□□	CMT.A1A3.□□□
E-142-30-270-…	15	M23	M23	EBS 18/36	4G4	CMT.005.□□□	4G4+2x1	CMT.006.□□□	CMT.022.□□□	CMT.A1A3.□□□
				EBS 30/60						
E-142-45-270-…	21	**M40**	M23	EBS 30/60	4G6	CMT.013.□□□	4G6+2x1	CMT.014.□□□	CMT.022.□□□	CMT.A1A3.□□□
E-142-50-270-…	25	**M40**	M23	EBS 30/60	4G6	CMT.013.□□□	4G6+2x1	CMT.014.□□□	CMT.022.□□□	CMT.A1A3.□□□
E-142-30-350-…	20	**M40**	M23	EBS 30/60	4G6	CMT.013.□□□	4G6+2x1	CMT.014.□□□	CMT.022.□□□	CMT.A1A3.□□□
E-142-40-350-…	25	**M40**	M23	EBS 30/60	4G6	CMT.013.□□□	4G6+2x1	CMT.014.□□□	CMT.022.□□□	CMT.A1A3.□□□
E-190-40-080-…	6	M23	M23	EBS 6/12	4G1,5	CMT.001.□□□	4G1,5+2x1	CMT.003.□□□	CMT.022.□□□	CMT.A1A3.□□□
E-190-30-150-…	9,1	M23	M23	EBS 12/24	4G2,5	CMT.007.□□□	4G2,5+2x1	CMT.008.□□□	CMT.022.□□□	CMT.A1A3.□□□
E-190-40-150-…	11	M23	M23	EBS 12/24	4G2,5	CMT.007.□□□	4G2,5+2x1	CMT.008.□□□	CMT.022.□□□	CMT.A1A3.□□□
E-190-25-280-…	13	**M40**	M23	EBS 18/36	4G4	CMT.009.□□□	4G4+2x1	CMT.010.□□□	CMT.022.□□□	CMT.A1A3.□□□
E-190-40-280-…	24	**M40**	M23	EBS 30/60	4G6	CMT.013.□□□	4G6+2x1	CMT.014.□□□	CMT.022.□□□	CMT.A1A3.□□□
E-190-20-500-…	18	**M40**	M23	EBS 30/60	4G6	CMT.013.□□□	4G6+2x1	CMT.014.□□□	CMT.022.□□□	CMT.A1A3.□□□
E-190-30-500-…	28	**M40**	M23	EBS 30/60	4G6	CMT.013.□□□	4G6+2x1	CMT.014.□□□	CMT.022.□□□	CMT.A1A3.□□□
E-190-40-500-…	36	**M40**	M23	EBS 42/84	4G10	CMT.058.□□□	4G10+2x1	CMT.059.□□□	CMT.022.□□□	CMT.A1A3.□□□
E-190-20-700-…	26	**M40**	M23	EBS 30/60	4G6	CMT.013.□□□	4G6+2x1	CMT.014.□□□	CMT.022.□□□	CMT.A1A3.□□□
E-190-30-700-…	39	**M40**	M23	EBS 42/84	4G10	CMT.058.□□□	4G10+2x1	CMT.059.□□□	CMT.022.□□□	CMT.A1A3.□□□

Forced Cooling Square 142 mm Motors

Electrical Characteristics		E-142-30-100	E-142-50-100	E-142-60-100	E-142-30-190	E-142-45-190	E-142-55-190	E-142-30-270	E-142-40-270	E-142-50-270	E-142-30-350	E-142-35-350
Stall Torque (ΔT 100 °C) - To	Nm	14			26,5			38			49	
Stall current - Io	Arms	9,1	14	17	17	22	29	22	29	35	28	35
Max velocity - Nmax	rpm	3000	5000	6000	3000	4500	5500	3000	4000	5000	3000	3600
Max current - Imax	Arms	27	41	51	50	64	82	64	87	103	80	100
Max torque - Tmax	Nm	35			64			94			118	
Voltage constant – Ke	V/Krpm	93	62	49	93	72	56	106	78	66	106	85
Torque constant - Kt	Nm/A	1,54	1,03	0,81	1,54	1,19	0,93	1,75	1,29	1,09	1,75	1,41
Rotor inertia - Jr	gm2	2,2			4,3			6,5			8,7	
Weight without brake - M	Kg	11			16			21			26	
Nominal power - Pn	W	3350			5200			5300			6900	
Power connector		M23	M23	M23	M23	M40	M40	M40	M40	M40	M40	M40

Shaft **		
ØD	24J6	32K6
E	50	58
GL	32	45
GA	27	35
F	8	10
R	M8x15	M12x22

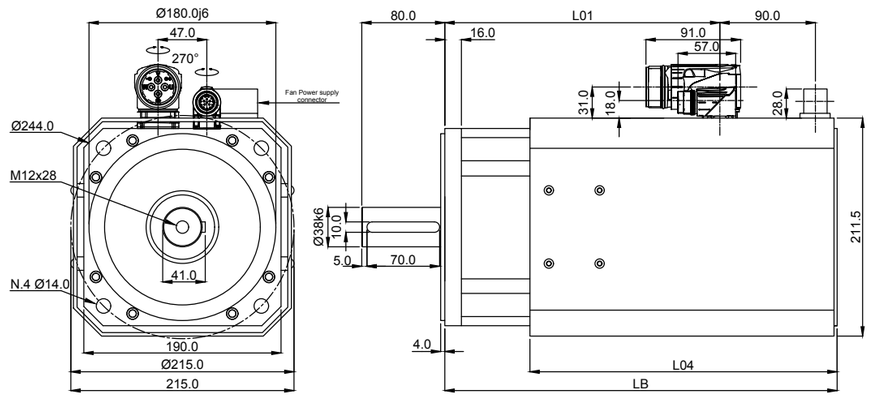


Servomotor Size	Fan Power (W)	Fan Current (A)	LB (mm)	L04 (mm)
	230Vac 1P			
E-142-□□-100-0□□-01	45	0,3	267	212
E-142-□□-190-0□□-01	45	0,3	317	262
E-142-□□-270-0□□-01	45	0,3	367	312
E-142-□□-350-0□□-01	45	0,3	417	362
E-142-□□-100-1□□-01 - Brake	45	0,3	320,5	262
E-142-□□-190-1□□-01 - Brake	45	0,3	370,5	312
E-142-□□-270-1□□-01 - Brake	45	0,3	420,5	362
E-142-□□-350-1□□-01 - Brake	45	0,3	470,5	362

Brake Characteristics		E-142-□□-100	E-142-□□-190	E-142-□□-270	E-142-□□-350
Supply Voltage	Vdc	24 +/- 6% @ 1Adc			
Braking Torque	Nm	40			
Inertia	gm²	1,37			
Weight	Kg	3,1			
Ton/Toff	ms	22/90			

Forced Cooling Square 190 mm Motors

Electrical Characteristics		E-190-25-280	E-190-40-280	E-190-20-500	E-190-30-500	E-190-40-500	E-190-20-700	E-190-30-700
Stall Torque (ΔT 100 °C) - To	Nm	40		71			98	
Stall current - Io	Arms	18	34	25	40	51	37	55
Max velocity - Nmax	rpm	2500	4000	2000	3000	4000	2000	3000
Max current - Imax	Arms	39	73	55	87	111	80	120
Max torque - Tmax	Nm	72		130			180	
Voltage constant – Ke	V/Krpm	134	71	169	108	84,5	162	108
Torque constant - Kt	Nm/A	2,22	1,17	2,8	1,79	1,4	2,68	1,79
Rotor inertia - Jr	gm2	9,1		17,7			26,4	
Weight without brake - M	Kg	24		38,5			53	
Nominal power - Pn	W	5600		7700			10400	
Power connector		M40	M40	M40	M40	M40	M40	M40



Servomotor Size	Fan Power (W)	Fan Current (A)	LB (mm)	L01 (mm)	L04 (mm)
	400Vac 3P				
E-190-□□-280-0□□-01	53	0,15	309	194,5	226
E-190-□□-500-0□□-01	53	0,15	379	264,5	296
E-190-□□-700-0□□-01	53	0,15	449	334,5	366
E-190-□□-280-0□□-01 - Brake	53	0,15	379.5	265	296
E-190-□□-500-0□□-01 - Brake	53	0,15	449,5	335	366
E-190-□□-700-0□□-01 - Brake	53	0,15	519,5	405	366

Brake Characteristics		E-190-□□-200	E-190-□□-500	E-190-□□-700
Supply Voltage	Vdc	24 +/- 6% @ 1,46 Adc		
Braking Torque	Nm	72		
Inertia	gm²	4,36		
Weight	Kg	6,9		
T on / T off	ms	25/140		

Forced Cooling E Motors - EBS Drive Pairing Table

Motor	DRIVE	Stall torque (Nm)	Peak Torque (Nm)	Max Velocity (rpm)
E-142-30-100-…	EBS 12/24	14	35	3000
E-142-50-100-…	EBS 18/36	14	24,5	5000
E-142-60-100-…	EBS 18/36	14	27,5	6000
	EBS 30/60	14	35	6000
E-142-30-190-…	EBS 18/36	26,5	52	3000
	EBS 30/60	26,5	64	3000
E-142-45-190-…	EBS 30/60	26,5	64	4500
E-142-55-190-…	EBS 30/60	26,5	55,8	5500
E-142-30-270-…	EBS30/60	38	94	3000
E-142-40-270-…	EBS30/60	38	77	4000
E-142-50-270-…	EBS 42/84	38	91	5000
E-142-30-350-…	EBS 30/60	49	105	3000
E-142-35-350-…	EBS 42/84	49	118	3500
E-190-25-280…	**EBS 18/36****	**37****	**72****	**2500****
	EBS 30/60	40	72	2500
E-190-40-280…	**EBS 30/60**	**35****	**70****	**4000****
	EBS 42/84	40	72	4000
E-190-20-500-…	EBS 30/60	71	130	2000
E-190-30-500-…	EBS 42/84	71	130	3000
E-190-40-500-…	EBS 60/120	71	130	4000
E-190-20-700-…	EBS 42/84	98	180	2000
E-190-30-700-…	EBS 60/120	98	180	3000

**In bold style are enhanced the configurations where the drive limits the continous torque that motor can supply

Forced Cooling E Motors - EBS Drive - Power/Feedback Cables

Motor	Stall Current [Arms]	Connectors		EBS Drive	Power Cable				Feedback Cables	
		Power	Feedback		Motor without Brake		Motor with Brake		TTL 2048 Hip SMK36	Samrt ABS
					Type	Code	Type	Code		
E-142-30-100-…	9,1	M23	M23	EBS 12/24	4G2,5	CMT.007.□□□	4G2,5+2x1	CMT.008.□□□	CMT.022.□□□	CMT.A1A3.□□□
E-142-50-100-…	14	M23	M23	EBS 18/36	4G4	CMT.005.□□□	4G4+2x1	CMT.006.□□□	CMT.022.□□□	CMT.A1A3.□□□
E-142-60-100-…	17	M23	M23	EBS 18/36	4G4	CMT.005.□□□	4G4+2x1	CMT.006.□□□	CMT.022.□□□	CMT.A1A3.□□□
				EBS 30/60						
E-142-30-190-…	17	M23	M23	EBS 18/36	4G4	CMT.005.□□□	4G4+2x1	CMT.006.□□□	CMT.022.□□□	CMT.A1A3.□□□
				EBS 30/60						
E-142-45-190-…	22	**M40**	M23	EBS 30/60	4G6	CMT.013.□□□	4G6+2x1	CMT.014.□□□	CMT.022.□□□	CMT.A1A3.□□□
E-142-55-190-…	29	**M40**	M23	EBS 30/60	4G6	CMT.013.□□□	4G6+2x1	CMT.014.□□□	CMT.022.□□□	CMT.A1A3.□□□
E-142-30-270-…	22	**M40**	M23	EBS 30/60	4G6	CMT.013.□□□	4G6+2x1	CMT.014.□□□	CMT.022.□□□	CMT.A1A3.□□□
E-142-40-270-…	29	**M40**	M23	EBS 30/60	4G6	CMT.013.□□□	4G6+2x1	CMT.014.□□□	CMT.022.□□□	CMT.A1A3.□□□
E-142-50-270-…	35	**M40**	M23	EBS 42/84	4G10	CMT.058.□□□	4G10+2x1	CMT.059.□□□	CMT.022.□□□	CMT.A1A3.□□□
E-142-30-350-…	28	**M40**	M23	EBS 30/60	4G6	CMT.013.□□□	4G6+2x1	CMT.014.□□□	CMT.022.□□□	CMT.A1A3.□□□
E-142-35-350-…	35	**M40**	M23	EBS 42/84	4G10	CMT.058.□□□	4G10+2x1	CMT.059.□□□	CMT.022.□□□	CMT.A1A3.□□□
E-190-25-280-…	18	**M40**	M23	EBS 18/36	4G4	CMT.009.□□□	4G4+2x1	CMT.010.□□□	CMT.022.□□□	CMT.A1A3.□□□
				EBS 30/60	4G6	CMT.013.□□□	4G6+2x1	CMT.014.□□□		
E-190-40-280-…	34	**M40**	M23	EBS 30/60	4G6	CMT.013.□□□	4G6+2x1	CMT.014.□□□	CMT.022.□□□	CMT.A1A3.□□□
				EBS 42/84	4G10	CMT.058.□□□	4G10+2x1	CMT.059.□□□		
E-190-20-500-…	25	**M40**	M23	EBS 30/60	4G6	CMT.013.□□□	4G6+2x1	CMT.014.□□□	CMT.022.□□□	CMT.A1A3.□□□
E-190-30-500-…	40	**M40**	M23	EBS 42/84	4G10	CMT.058.□□□	4G10+2x1	CMT.059.□□□	CMT.022.□□□	CMT.A1A3.□□□
E-190-40-500-…	51	**M40**	M23	EBS 60/120	4G16	CMT.088.□□□	4G16+2x1,5	CMT.029.□□□	CMT.022.□□□	CMT.A1A3.□□□
E-190-20-700-…	37	**M40**	M23	EBS 42/84	4G10	CMT.058.□□□	4G10+2x1	CMT.059.□□□	CMT.022.□□□	CMT.A1A3.□□□
E-190-30-700-…	55	**M40**	M23	EBS 60/120	4G16	CMT.088.□□□	4G16+2x1,5	CMT.029.□□□	CMT.022.□□□	CMT.A1A3.□□□

230Vac Drives and Motors

DRIVE EBSH

Questi drive sono stati sviluppati per realizzare una totale integrazione digitale con i CNC Esautomotion tramite bus di campo standard quali CAN open ed EtherCAT.
La gamma comprende:
- drive doppi in quattro taglie principali: 3A, 6A, 8A e 10A
- drive singoli in due taglie principali: 16A e 25A.

L'alimentazione è diretta da rete (220V AC trifase).
Ogni convertitore è dotato di resistenza di frenatura interna, ad eccezione dal modello doppio da 3A. Su tutti i modelli è possibile montare una resistenza di frenatura esterna.
Per questi drives è richiesta un'alimentazione di servizio di (220V AC monofase).

CARATTERISTICHE PRINCIPALI

- Gestione di 8 ingessi digitali programmabili e 6 uscite digitali programmabili.
- Gestione di trasduttori di tipo Assoluto/Incrementale 17/33Bit.
- Gestione bus di campo CANopen-
- Gestione bus di Campo EtherCAT-
- Gestione ingresso analogico comando velocita.
- Gestione ingresso analogico Torque.
- Gestione automatica del freno elettromeccanico.
- Implementazione delle seguenti protezioni:
  - Sovracorrente convertitore,
  - Sovrantensione convertitore,
  - I2t IGBT e motore con soglia di preallarme e allarme,
  - Anomalie circuito di frenatura,
  - Anomalia circuito freno elettromeccanico,
  - Rottura/sconnessione encoders,
  - Sovra-velocità motore.
- Gestione delle funzioni:
  - Regolazione del guadagno,
  - Storico allarmi,
  - Funzionamento JOG,
  - Ricerca dell'origine,
  - Rilevamento dell'inerzia.

EBSH DRIVES

These drives have been designed to achieve total digital integration with Esautomotion's CNCs, using standard fieldbuses such as open CANopen and EtherCAT.
The complete range includes:
- *Dual drives in four main sizes: 3A, 6A, 8A and 10A*
- *single drives in two main sizes: 16A and 25A.*

The power supply is directed from the mains (220V AC three-phase). Each converter is equipped with internal brake resistor, with the exception of the dual 3A model. An external brake resistor can be mounted on all models.
For these drives a service power supply of (220V AC single-phase) is required.

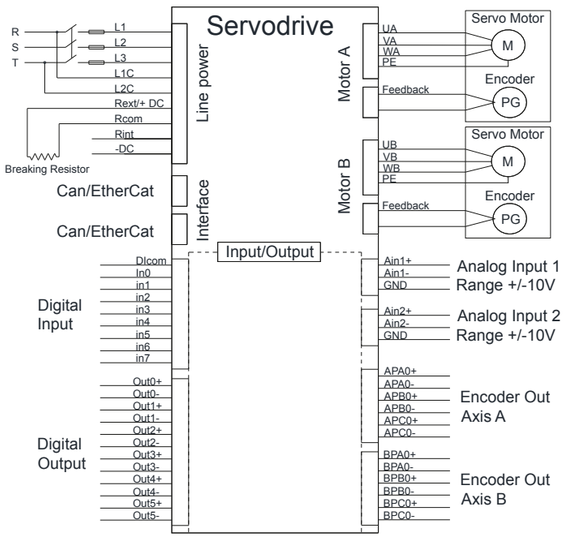
MAIN FEATURES

- *Management of 8 programmable digital inputs and 6 programmable digital outputs.*
- *Management of Absolute/Incremental transducers 17/33Bit.*
- *CANopen fieldbus management.*
- *EtherCAT Fieldbus Management.*
- *Analog input management speed control.*
- *Torque analogic input management.*
- *Automatic management of the electromechanical brake.*
- *Implementation of the following protections:*
  - *Overcurrent converter,*
  - *Converter overvoltage,*
  - *I2t IGBT and motor with early warning threshold and alarm,*
  - *Brake circuit anomalies,*
  - *Electromechanical brake circuit anomaly,*
  - *Breakage/disconnection encoders,*
  - *Motor over-speed.*
- *Function management:*
  - *Gain adjustment,*
  - *Alarm history,*
  - *JOG operation,*
  - *search for origin,*
  - *Inertia detection.*

EBSH Technical Data

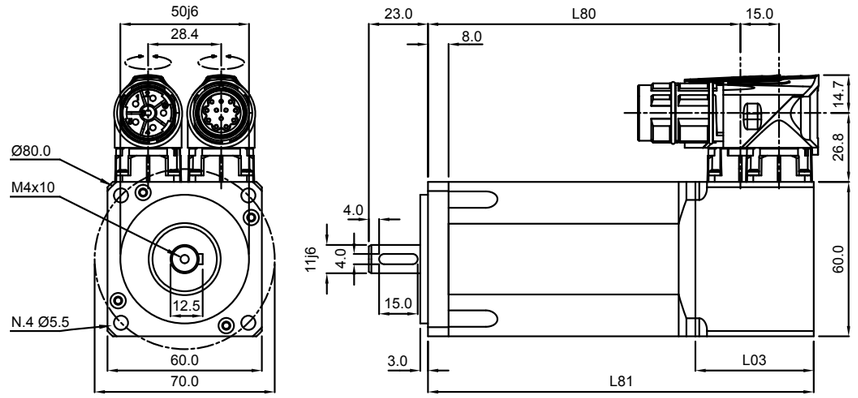
Model				EBSH 3A	EBSH 6A	EBSH 8A	EBSH 10A	EBSH 16A	EBSH 25A
Type				Dual	Dual	Dual	Dual	Single	Single
Continuous output current			Arms	3	6	8	10	16	25
Instantaneous Maximum Output Current			Arms	10.6	14.1	21.2	24.8	49.5	63.6
Dimensions (L x H x D)			mm	93,2 x 244,0 x 182,5				113,2 x 273,3 x 202,8	
Main Circuit	Threephase power supply voltage rating		Vac	AC 230 V -15% ~ +10%, 50 Hz / 60 Hz					
	Power supply current rating		Arms	5.1	10.3	14.3	16.8	10.1	15.7
Control circuit			Vac	AC 230 V -15% ~ +10%, 50 Hz / 60 Hz					
Bus DC rated voltage			Vdc	DC 320 V -15% ~ +10%,					
Power Supply Capacity			[kVA]	2.1	4.2	5.8	6.8	4.0	5.9
Regenerative Resistor	Built-In Regenerative Resistor	Resistance	[Ω]	——	40	20	20	32	32
		Capacity	[W]	——	80	80	80	150	150
	Minimum Allowable External Resistance		[Ω]	40	20	15	15	12	10
Over voltage Category				Ⅲ					
Feedback				Smart ABS - NRZ - 17/33 bit Smart ABS (incremental/absolute encoder)					
CAN Communication	Communication Protocol			CANOpen (DS301 + DS402 Protocol)					
	1 : N Communication			Up to N = 127 stations					
	Axis Address			Set with parameters.					
EtherCAT BUS	Communication Protocol			CoE (CANOpen over EtherCAT)					
	Minimum instruction time			125 µs					

The 3A specification of servodrive has no built-in regenerative resistor



Square 60 mm Motors

Electrical Characteristics		E-060-60-007	E-060-60-017
Stall Torque (ΔT 100 °C) - To	Nm	0,7	1,7 (S3-60%) / 1,4 (S1)
Stall current - Io	Arms	1,57	3,5 (S3-60%) / 2,8 (S1)
Max velocity - Nmax	rpm	6000	6000
Max current - Imax	Arms	6,4	11
Max torque - Tmax	Nm	2,4	4,6
Voltage constant – Ke	V/Krpm	27	30
Torque constant - Kt	Nm/A	0,45	0,5
Rotor inertia - Jr	gm²	0,013	0,023
Weight without brake - M	Kg	1,2	1,7
Nominal power - Pn	W	200	540 (S3-60%) / 400(S1)
Power connector		M23	M23



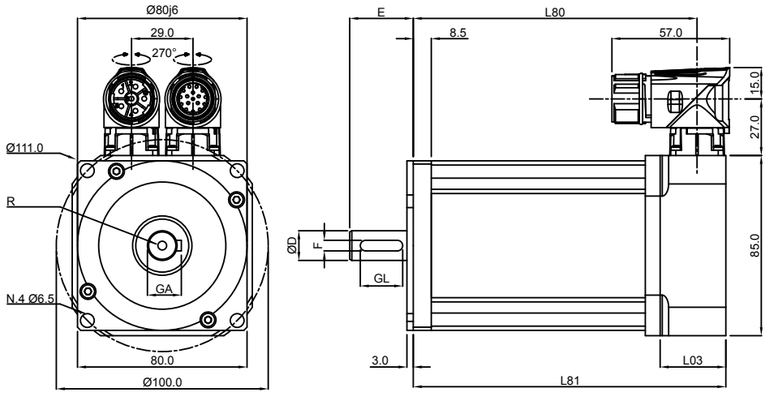
Motor's lenght		E-060-60-007 TTL 2048 Smart ABS Hip SKM36	E-060-60-017 TTL 2048 Smart ABS Hip SKM36
L80	mm	93,5	121,5
L81	mm	122,0	150,0
L80 with brake	mm	123,9	151,9
L81 with brake	mm	152,4	180,4
L03	mm	46	46

Brake Characteristics		E-060-60-007	E-060-60-017
Supply Voltage	Vdc	24 +/- 6% @ 0,46Adc	
Braking Torque @20°C	Nm	2	
Inertia	gm²	0,01	
Weight	Kg	0,3	
Ton/Toff	ms	6/25	

Square 80 mm Motors

Electrical Characteristics		E-080-35-014	E-080-50-014	E-080-35-028	E-080-50-028	E-080-35-039	E-080-50-039
Stall Torque (ΔT 100 °C) - To	Nm	1,4		2,8		3,9	
Stall current - Io	Arms	1,8	3,1	3,5	5,7	4,9	6,5
Max velocity - Nmax	rpm	3500	5000	3500	5000	3500	5000
Max current - Imax	Arms	7,2	12,8	14	22,8	19,6	26,2
Max torque - Tmax	Nm	5		9,5		13	
Voltage constant – Ke	V/Krpm	49	28	48	29	48	36
Torque constant - Kt	Nm/A	0,81	0,463	0,794	0,48	0,794	0,595
Rotor inertia - Jr	gm²	0,077		0,142		0,21	
Weight without brake - M	Kg	1,9		2,9		3,5	
Nominal power - Pn	W	370		720		970	
Power connector		M23	M23	M23	M23	M23	M23

Shaft **		
ØD	14J6	19J6
E	30	40
GL	20	32
GA	16	21,5
F	5	6
R	M5x15	M6x16



Motor's lenght		E-080-□□-014				E-080-□□-028				E-080-□□-039			
		TTL 2048 Smart ABS		Hip SKM36		TTL 2048 Smart ABS		Hip SKM36		TTL 2048 Smart ABS		Hip SKM36	
Shaft ØD		14	19	14	19	14	19	14	19	14	19	14	19
L80	mm	83,5	93,5	98,5	108,5	108,5	118,5	123,5	133,5	133,5	143,5	148,5	158,5
L81	mm	97,5	107,5	112,5	122,5	122,5	132,5	137,5	147,5	147,5	157,5	162,5	172,5
L80 with brake	mm	135,1		150,1		160,1		175,1		185,1		200,1	
L81 with brake	mm	149,1		164,1		174,1		189,1		199,1		214,1	
L03	mm	31		46		31		46		31		46	

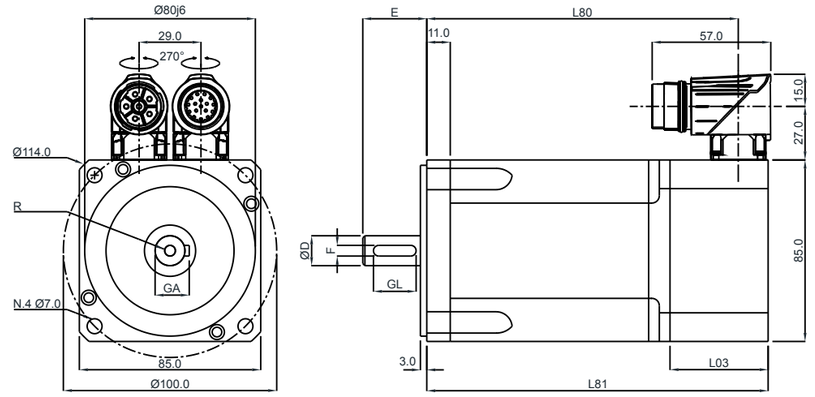
** standard shaft 14J6 – Optional shaft 19J6 on request

Brake Characteristics		E-080-□□-014	E-080-□□-028	E-080-□□-039
Supply Voltage	Vdc	24 +/- 6% @ 0,75Adc		
Braking Torque	Nm	9		
Inertia	gm²	0,06		
Weight	Kg	1		
Ton/Toff	ms	7/40		

Square 85 mm Motors

Electrical Characteristics		E-085-50-010	E-085-30-015	E-085-50-015	E-085-35-029	E-085-55-029	E-085-35-042	E-085-50-042	E-085-60-042	E-085-30-053	E-085-50-53
Stall Torque (ΔT 100 °C) - To	Nm	1	1,5		2,9		4,2			5,3	
Stall Current - Io	Arms	1,7	1,65	2,6	3,2	5,2	4,6	7,1	8,8	5,8	8
Max velocity - Nmax	rpm	4500	3100	5000	3200	5400	3300	5200	6000	3300	4700
Max current - Imax	Arms	8,0	6,9	11,0	13	21	18	28	29	23	32
Max torque - Tmax	Nm	3,6	5,2		10		14			18	
Voltage constant – Ke	V/Krpm	36	55	35	55	34	55	36	30	55	40
Torque constant - Kt	Nm/A	0,6	0,91	0,58	0,91	0,56	0,91	0,6	0,496	0,91	0,66
Rotor inertia - Jr	gm²	0,07	0,092		0,172		0,253			0,333	
Weight without brake - M	Kg	2	2,4		3,5		4,6			5,7	
Nominal power - Pn	W	280	400		700		1000			1200	
Power connector		M23	M23	M23	M23	M23	M23	M23	M23	M23	M23

Shaft		
ØD	14J6	19J6
E	30	40
GL	20	32
GA	16	21,5
F	5	6
R	M5x15	M6x16



Motor's lenght		E-085-50-010			E-085-□□-015				E-085-□□-029				E-085-□□-042				E-085-□□-053			
		TTL 2048	Smart ABS	Hip SKM36	TTL 2048 Smart ABS		Hip SKM36		TTL 2048 Smart ABS		Hip SKM36		TTL 2048 Smart ABS		Hip SKM36		TTL 2048 Smart ABS		Hip SKM36	
Shaft ØD		14	14	14	14	19	14	19	14	19	14	19	14	19	14	19	14	19	14	19
L80	mm	73,5	78,4	83,5	101	111	116	126	131	141	146	156	161	171	176	186	191	201	206	216
L81	mm	87	92	107	115	125	130	140	145	155	160	170	175	185	190	200	205	215	220	230
L80 with brake	mm	101,5	106,4	111,5	149		164		179		194		209		224		239		254	
L81 with brake	mm	115	120	135	163		178		193		208		223		238		253		268	
L03	mm	26	31	46	31		46		31		46		31		46		31		46	

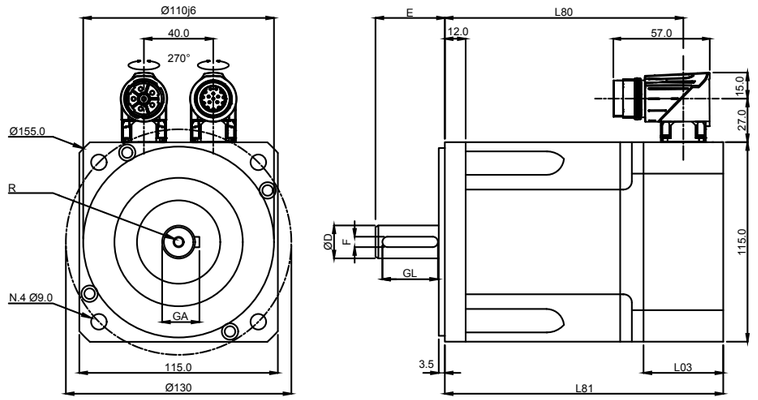
** standard shaft 14J6 – Optional shaft 19J6 on request

Brake Characteristics		E-085-50-010	E-085-□□-015	E-085-□□-029	E-085-□□-042	E-085-□□-053
Supply Voltage	Vdc	24 +/- 6% @ 0,46Adc	24 +/- 6% @ 0,75Adc			
Braking Torque	Nm	2	9			
Inertia	gm²	0,01	0,06			
Weight	Kg	0,3	1			
Ton/Toff	ms	6/25	7/40			

Square 115 mm Motors

Electrical Characteristics		E-115-45-021	E-115-30-040	E-115-40-040	E-115-55-040	E-115-30-076	E-115-40-076	E-115-50-076	E-115-30-113	E-115-45-113
Stall Torque (ΔT 100 °C) - To	Nm	2,1	4			7,6			11,3	
Stall Current - Io	Arms	3,3	4,4	5,4	6,9	7,8	10	12,8	12	17
Max velocity - Nmax	rpm	4500	3200	4100	5300	3100	4000	5000	3100	4600
Max current - Imax	Arms	13	18	23	29	32	40	51	48	68
Max torque - Tmax	Nm	7,1	14			26			39	
Voltage constant – Ke	V/Krpm	39	55	44,4	35	59	46	36	59	41
Torque constant - Kt	Nm/A	0,65	0,91	0,73	0,58	0,98	0,76	0,60	0,98	0,68
Rotor inertia - Jr	gm²	0,28	0,5			0,96			1,4	
Weight without brake - M	Kg	3,6	5,6			8,5			11,4	
Nominal power - Pn	W	570	1000			1700			2400	
Power connector		M23	M23	M23	M23	M23	M23	M23	M23	M23

Shaft **		
ØD	19J6	24J6
E	40	50
GL	32	32
GA	21,5	27
F	6	8
R	M6x16	M8x15



Motor's Lengths		E-115-45-021			E-115-□□-040		E-115-□□-076		E-115-□□-113	
		TTL 2048	Smart ABS	Hip SKM36	TTL 2048 Smart ABS	Hip SKM36	TTL 2048 Smart ABS	Hip SKM36	TTL 2048 Smart ABS	Hip SKM36
L80	mm	80,5	85,5	91	132	137,5	172	177,5	212	217,5
L81	mm	94	100	114	146,5	160,5	186,5	200,5	226,5	240,5
L80 with brake	mm	124	129,1	134,6	181	186,5	221	226,5	261	266,5
L81 with brake	mm	137,6	143,6	157,6	195,5	209,5	235,5	249,5	275,5	289,5
L03	mm	26	32	46	32	46	32	46	32	46

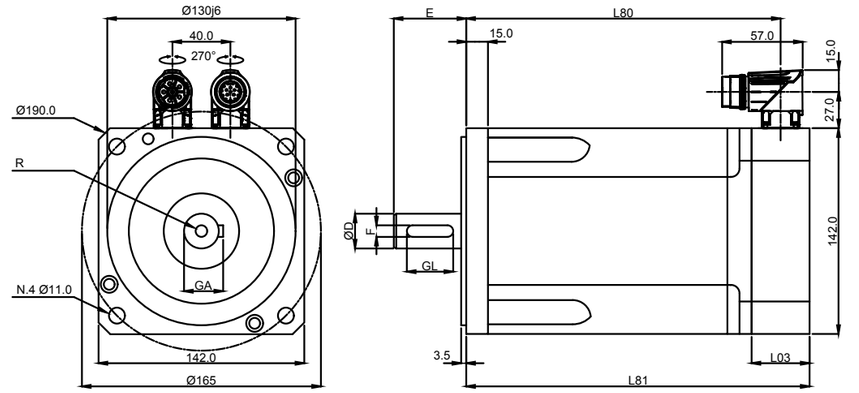
** standard shaft 19J6 – Optional shaft 24J6 on request

Brake Characteristics		E-115-45-021	E-115-□□-040	E-115-□□-076	E-115-□□-113
Supply Voltage	Vdc	24 +/- 6% @ 0,75Adc	24 +/- 6% @ @1Adc		
Braking Torque	Nm	9	18		
Inertia	gm²	0,06	0,24		
Weight	Kg	1,0	1,4		
Ton/Toff	ms	7/40	10/50		

Square 142 mm Motors

Electrical Characteristics		E-142-45-050	E-142-20-100	E-142-30-100	E-142-40-100	E-142-20-190	E-142-30-190	E-142-35-190	E-142-20-270	E-142-30-270	E-142-20-350
Stall Torque (ΔT 100 °C) - To	Nm	5	10			19			27		35
Stall Current - Io	Arms	7,4	6,5	9,8	12	12	16	21	17	25	25
Max velocity - Nmax	rpm	4500	1900	3000	3800	2000	2600	3300	2000	3000	2200
Max current - Imax	Arms	30	27	41	51	50	64	82	68	108	100
Max torque - Tmax	Nm	17	35			64			94		118
Voltage constant – Ke	V/Krpm	41	93	62	49	93	72	56	97	66	85
Torque constant - Kt	Nm/A	0,68	1,54	1,02	0,81	1,54	1,19	0,93	1,60	1,09	1,41
Rotor inertia - Jr	gm²	1,0	2,2			4,3			6,5		8,7
Weight without brake - M	Kg	6	11			16			21		26
Nominal power - Pn	W	1100	2400			3700			3800		4900
Power connector		M23	M23	M23	M23	M23	M23	M40	M23	M40	M40

Shaft **		
ØD	24J6	32K6
E	50	58
GL	32	45
GA	27	35
F	8	10
R	M8x15	M12x22



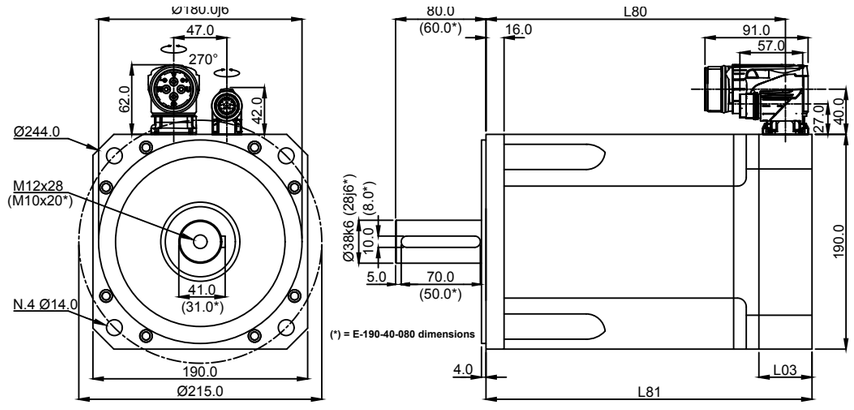
Motor's Lengths		E-142-45-050			E-142-□□-100		E-142-□□-190			E-142-□□-270			E-142-□□-350
		TTL 2048	Smart ABS	Hip SKM36	TTL 2048	Smart ABS Hip SKM36	TTL 2048		Smart ABS Hip SKM36	TTL 2048		Smart ABS Hip SKM36	TTL 2048 Smart ABS Hip SKM36
		M23	M23	M23	M23	M23	M23	M40	M23-M40	M23	M40	M23-M40	M40
L80	mm	95	99	104,5	160.5	167	210.5	217	217	260,5	267	267	317
L81	mm	108,5	113,5	124,5	174	187	224	237	237	274	287	287	337
L80 with brake	mm	134,5	138,5	144	214	220,5	264	270,5	270,5	314	320,5	320,5	370,5
L81 with brake	mm	148	153	164	227,5	240,5	277,5	290,5	290,5	327,5	340,5	340,5	390,5
L03	mm	27	32	43	27	40	27	40	40	27	40	40	40

** standard shaft 24J6 – Optional shaft 32K6 on request

Brake Characteristics		E-142-45-050	E-142-□□-100	E-142-□□-190	E-142-□□-270	E-142-□□-350
Supply Voltage	Vdc	24 +/- 6% @ 1Adc	24 +/- 6% @ 1Adc			
Braking Torque @20°C	Nm	18	40			
Inertia	gm²	0,24	1,37			
Weight	Kg	1,4	3,1			
Ton/Toff	ms	10/50	22/90			

Square 190 mm Motors

Electrical Characteristics		E-190-20-080	E-190-20-150	E-190-25-150	E-190-15-280	E-190-25-280
Stall Torque (ΔT 100 °C) - To	Nm	8	15		28	
Stall current - Io	Arms	6	9,1	11	13	24
Max velocity - Nmax	rpm	2000	1800	2300	1300	2400
Max current - Imax	Arms	18	29	36	38	73
Max torque - Tmax	Nm	21	40		72	
Voltage constant – Ke	V/Krpm	80	100	79	134	71
Torque constant - Kt	Nm/A	1,32	1,65	1,31	2,22	1,17
Rotor inertia - Jr	gm^2	2,7	5,4		9,1	
Weight without brake - M	Kg	10	17		23	
Nominal power - Pn		2000	3100		4000	
Power connector		M23	M23	M23	M40	M40



Motor's Lengths		E-190-20-080			E-190-□□-150		E-190-□□-280
		TTL 2048	Smart ABS	Hip SKM36	TTL 2048	Smart ABS Hip SKM36	TTL 2048 /Smart ABS Hip SKM36
		M23	M23	M23	M23	M23	M40
L80	mm	106,5	110,5	116,5	149,5	159,5	194,5
L81	mm	120	125	140	163	183	218
L80 with brake	mm	143,5	147,5	153,5	220	230	265
L81 with brake	mm	157	162	177	233,5	253,5	288,5
L03	mm	27	32	47	27	47	47

Brake Characteristics		E-190-20-080	E-190-□□-150	E-190-□□-280
Supply Voltage	Vdc	24 +/- 6% @ 1 Adc	24 +/- 6% @ 1,46 Adc	
Braking Torque	Nm	40	72	
Inertia	gm^2	1,37	4,36	
Weight	Kg	3,1	6,9	
Ton/Toff	ms	22/90	25/140	

E Motors - EBS Drive Pairing Table

Motor	DRIVE	Stall Torque (Nm)	Peak Torque (Nm)	Max Velocity (rpm)
E-060-60-007-…	EBSH 3A	0,7	2,4	6000
E-060-60-017-…	**EBSH 3A****	**1,5****	**4,6****	**6000****
	EBSH 6A	1,7	4,6	6000
E-080-35-014-…	EBSH 3A	1,4	5,0	3500
E-080-50-014-…	EBSH 6A	1,4	5,0	5000
E-080-35-028-…	EBSH 6A	2,8	9,5	3500
E-080-50-028-…	EBSH 6A	2,8	6,7	5000
E-080-35-039-…	EBSH 6A	3,9	11,2	3500
E-080-50-039-…	EBSH 8A	3,9	12,6	5000
E-085-50-010-…	EBSH 3A	1,0	3,6	4500
E-085-30-015-…	EBSH 3A	1,5	5,2	3100
E-085-50-015-…	EBSH 3A	1,5	5,2	5000
E-085-35-029-…	EBSH 6A	2,9	10	3200
E-085-55-029-…	EBSH 6A	2,9	7,8	5400
E-095-35-042-…	EBSH 6A	4,2	12,8	3300
E-085-50-042-…	EBSH 8A	4,2	12,7	5200
E-085-60-042-…	EBSH 10A	4,2	12,3	6000
E-085-30-053-…	EBSH 6A	5,3	12,8	3300
E-085-50-053-…	EBSH 10A	5,3	13,9	4700
E-115-45-021-…	EBSH 6A	2,1	7,1	4500
E-115-30-040-…	EBSH 6A	4,0	12,8	3200
E-115-40-040-…	EBSH 6A	4,0	10,2	4100
E-115-55-040-…	EBSH 8A	4,0	12,2	5300
E-115-30-076-…	EBSH 8A	7,6	20,7	3100
E-115-40-076-…	EBSH 10A	7,6	18,8	4000
E-115-50-076-…**	**EBSH 10A****	**6****	**14,8****	**5000****
	EBSH 16A	7,6	26	5000
E-115-30-113-…	EBSH 16A	11,3	39	3100
E-115-45-113-…	EBSH 25A	11,3	39	4600
E-142-45-050-…	EBSH 8A	5,0	14,4	4500
E-142-20-100-…	EBSH 8A	10,0	32,6	1900
E-142-30-100-…	EBSH 10A	10,0	25,5	3000
E-142-40-100-…	EBSH 16A	10,0	35	3800
E-142-20-190-…	EBSH 16A	19,0	64	2000
E-142-30-190-…	EBSH 16A	19,0	58	2600
E-142-35-190-…	EBSH 25A	19,0	59	3300
E-142-20-270-…	EBSH 25A	27,0	94	2000
E-142-30-270-…	EBSH 25A	27,0	59	3000
E-142-20-350-…	EBSH 25A	35,0	89	2200
E-190-20-080-…	EBSH 8A	8,0	21	2000
E-190-20-150-…	EBSH 10A	15,0	40	1800
E-190-25-150-…	EBSH 16A	15,0	40	2300
E-190-15-280-…	EBSH 16A	28,0	38	1300
E-190-25-280-…	EBSH 25A	28,0	72	2400

**In bold style are enhanced the configurations where the drive limits the continous torque that motor can supply

E Motors – EBSH Drive - Power/Feedback Cables

Motor	Stall Current [Arms]	Connectors		EBS Drive	Power Cable				Feedback Cables	
					Motor without Brake		Motor with Brake		TTL 2048 Hip SMK36	Samrt ABS
		Power	Feedback		Type	Code	Type	Code		
E-060-60-007-…	1,57	M23	M23	EBSH 3A	4G1,5	CMT.001.□□□	4G1,5+2x1	CMT.003.□□□	Not available	CMT.A1C3.□□□
E-060-60-017-…	3,5	M23	M23	EBSH 3A	4G1,5	CMT.001.□□□	4G1,5+2x1	CMT.003.□□□	Not available	CMT.A1C3.□□□
				EBSH 6A						
E-080-35-014-…	1,8	M23	M23	EBSH 3A	4G1,5	CMT.001.□□□	4G1,5+2x1	CMT.003.□□□	Not available	CMT.A1C3.□□□
E-080-50-014-…	3,1	M23	M23	EBSH 6A	4G1,5	CMT.001.□□□	4G1,5+2x1	CMT.003.□□□	Not available	CMT.A1C3.□□□
E-080-35-028-…	3,5	M23	M23	EBSH 6A	4G1,5	CMT.001.□□□	4G1,5+2x1	CMT.003.□□□	Not available	CMT.A1C3.□□□
E-080-50-028-…	5,7	M23	M23	EBSH 6A	4G1,5	CMT.001.□□□	4G1,5+2x1	CMT.003.□□□	Not available	CMT.A1C3.□□□
E-080-35-039-…	4,9	M23	M23	EBSH 6A	4G1,5	CMT.001.□□□	4G1,5+2x1	CMT.003.□□□	Not available	CMT.A1C3.□□□
E-080-50-039-…	6,5	M23	M23	EBSH 8A	4G1,5	CMT.001.□□□	4G1,5+2x1	CMT.003.□□□	Not available	CMT.A1C3.□□□
E-085-50-010-…	1,7	M23	M23	EBSH 3A	4G1,5	CMT.001.□□□	4G1,5+2x1	CMT.003.□□□	Not available	CMT.A1C3.□□□
E-085-30-015-…	1,65	M23	M23	EBSH 3A	4G1,5	CMT.001.□□□	4G1,5+2x1	CMT.003.□□□	Not available	CMT.A1C3.□□□
E-085-50-015-…	2,6	M23	M23	EBSH 3A	4G1,5	CMT.001.□□□	4G1,5+2x1	CMT.003.□□□	Not available	CMT.A1C3.□□□
E-085-35-029-…	3,2	M23	M23	EBSH 6A	4G1,5	CMT.001.□□□	4G1,5+2x1	CMT.003.□□□	Not available	CMT.A1C3.□□□
E-085-55-029-…	5,2	M23	M23	EBSH 6A	4G1,5	CMT.001.□□□	4G1,5+2x1	CMT.003.□□□	Not available	CMT.A1C3.□□□
E-085-35-042-…	4,6	M23	M23	EBSH 6A	4G1,5	CMT.001.□□□	4G1,5+2x1	CMT.003.□□□	Not available	CMT.A1C3.□□□
E-085-50-042-…	7,1	M23	M23	EBSH 8A	4G1,5	CMT.001.□□□	4G1,5+2x1	CMT.003.□□□	Not available	CMT.A1C3.□□□
E-085-60-042-…	8,8	M23	M23	EBSH 10A	4G2,5	CMT.007.□□□	4G2,5+2x1	CMT.008.□□□	Not available	CMT.A1C3.□□□
E-085-30-053-…	5,8	M23	M23	EBSH 6A	4G1,5	CMT.001.□□□	4G1,5+2x1	CMT.003.□□□	Not available	CMT.A1C3.□□□
E-085-50-053-…	8	M23	M23	EBSH 10A	4G2,5	CMT.007.□□□	4G2,5+2x1	CMT.008.□□□	Not available	CMT.A1C3.□□□
E-115-45-021-…	3,3	M23	M23	EBSH 6A	4G1,5	CMT.001.□□□	4G1,5+2x1	CMT.003.□□□	Not available	CMT.A1C3.□□□
E-115-30-040-…	4,4	M23	M23	EBSH 6A	4G1,5	CMT.001.□□□	4G1,5+2x1	CMT.003.□□□	Not available	CMT.A1C3.□□□
E-115-40-040-…	5,4	M23	M23	EBSH 6A	4G1,5	CMT.001.□□□	4G1,5+2x1	CMT.003.□□□	Not available	CMT.A1C3.□□□
E-115-55-040-…	6.9	M23	M23	EBSH 8A	4G1,5	CMT.001.□□□	4G1,5+2x1	CMT.003.□□□	Not available	CMT.A1C3.□□□
E-115-30-076-…	7,8	M23	M23	EBSH 8A	4G1,5	CMT.001.□□□	4G1,5+2x1	CMT.003.□□□	Not available	CMT.A1C3.□□□
E-115-40-076-…	10	M23	M23	EBSH 10A	4G2,5	CMT.007.□□□	4G2,5+2x1	CMT.008.□□□	Not available	CMT.A1C3.□□□
E-115-50-076-…	12,8	M23	M23	EBSH 10A	4G2,5	CMT.007.□□□	4G2,5+2x1	CMT.008.□□□	Not available	CMT.A1C3.□□□
				EBSH 16A	4G4	CMT.005.□□□	4G4+2x1	CMT.006.□□□		
E-115-30-113-…	12	M23	M23	EBSH 16A	4G4	CMT.005.□□□	4G4+2x1	CMT.006.□□□	Not available	CMT.A1C3.□□□
E-115-45-113-…	17	M23	M23	EBSH 25A	4G4	CMT.005.□□□	4G4+2x1	CMT.006.□□□	Not available	CMT.A1C3.□□□
E-142-45-050-…	7,4	M23	M23	EBSH 8A	4G1,5	CMT.001.□□□	4G1,5+2x1	CMT.003.□□□	Not available	CMT.A1C3.□□□
E-142-20-100-…	6,5	M23	M23	EBSH 8A	4G1,5	CMT.001.□□□	4G1,5+2x1	CMT.003.□□□	Not available	CMT.A1C3.□□□
E-142-30-100-…	9,8	M23	M23	EBSH 10A	4G2,5	CMT.007.□□□	4G2,5+2x1	CMT.008.□□□	Not available	CMT.A1C3.□□□
E-142-40-100-…	12	M23	M23	EBSH 16A	4G4	CMT.005.□□□	4G4+2x1	CMT.006.□□□	Not available	CMT.A1C3.□□□
E-142-20-190-…	12	M23	M23	EBSH 16A	4G4	CMT.005.□□□	4G4+2x1	CMT.006.□□□	Not available	CMT.A1C3.□□□
E-142-30-190-…	16	M23	M23	EBSH 16A	4G4	CMT.005.□□□	4G4+2x1	CMT.006.□□□	Not available	CMT.A1C3.□□□
E-142-35-190-…	21	**M40**	M23	EBSH 25A	4G6	CMT.013.□□□	4G6+2x1	CMT.014.□□□	Not available	CMT.A1C3.□□□
E-142-20-270-…	17	M23	M23	EBSH 25A	4G4	CMT.005.□□□	4G4+2x1	CMT.006.□□□	Not available	CMT.A1C3.□□□
E-142-30-270-…	25	**M40**	M23	EBSH 25A	4G6	CMT.013.□□□	4G6+2x1	CMT.014.□□□	Not available	CMT.A1C3.□□□
E-142-20-350-…	25	**M40**	M23	EBSH 25A	4G6	CMT.013.□□□	4G6+2x1	CMT.014.□□□	Not available	CMT.A1C3.□□□
E-190-20-080-…	8	M23	M23	EBSH 8A	4G1,5	CMT.001.□□□	4G1,5+2x1	CMT.003.□□□	Not available	CMT.A1C3.□□□
E-190-20-150-…	9,1	M23	M23	EBSH 10A	4G2,5	CMT.007.□□□	4G2,5+2x1	CMT.008.□□□	Not available	CMT.A1C3.□□□
E-190-25-150-…	11	M23	M23	EBSH 16A	4G4	CMT.005.□□□	4G4+2x1	CMT.006.□□□	Not available	CMT.A1C3.□□□
E-190-15-280-…	13	**M40**	M23	EBSH 16A	4G4	CMT.009.□□□	4G4+2x1	CMT.010.□□□	Not available	CMT.A1C3.□□□
E-190-25-280-…	24	**M40**	M23	EBSH 25A	4G6	CMT.013.□□□	4G6+2x1	CMT.014.□□□	Not available	CMT.A1C3.□□□

Motors Characteristics

Technology	Synchronous Brushless Servomotors with sinusoidal fcem. Built using last generation of Iron Boron Neodymium magnets. 8 poles construction
Thermal insulation	F class (Max T = 140°C → Ta = 40°C + ΔT = 100°C) obtained using components in F and H class
Constructive shape	B5
Degree of protection	IP65 – Natural cooling
Thermal protection	PTC
Shaft	Standard with key
Connections	FEEDBACK CONNECTORS: M23 – 17poles - 90° orientable – Transducer and PTC connections POWER CONNECTOR: M23/M40 6poles - 90° orientable – Motor and brake connections Motors with Stall current > 20A are fitted with the M40 power connector
Supply Voltage	230Vac or 400Vac
Transducer	Incremental Line Drive encoder 2048p/r with hall sensor Absolute Hiperface SKM36 Encoder Absolute Smart ABS 17/33iBit
Painting	Protective resins (half luster black)
Options	24Vdc Brake - Shaft without key Forced cooling – Coupling with epycicloidal gearbox

Motors Coding

1		2	3	4		5	6		7	8	9		10	11	12		13	14
E	-	0	8	5	-	6	0	-	0	1	5	-	x	x	x	-	x	x

Pos.	Description
1	Motor identification label: “E”
2-3-4	Size: Identify the square side of the motor expressed in mm
5-6	Max velocity: Multiplied x 00 defines the motor nominal velocity expressed in rpm
7-8-9	Stall Torque: Defines the motor stall torque expressed in tenth of Nm
10	Brake: 0 = Brake not present / 1 = 24vDC brake integrated inside the motor
11	Motor Transducer 1 = Incremental 5V Line Drive encoder 2048 p/r + Hall sensors B = Absolute Multi Turn Smart ABS 17/33bit C = Absolute Multi-Turn SinCos Encoder SKM36 MT Hiperface
12	Motor Shaft 0 = Shaft without key 1 = Shaft with key (standard)
13-14	Available for special version identification 00 = Standard version 01 = Forced Cooling 0V = 230V version 0J = E-060 Standard version – 400V JV = E-060 Standard version – 230V

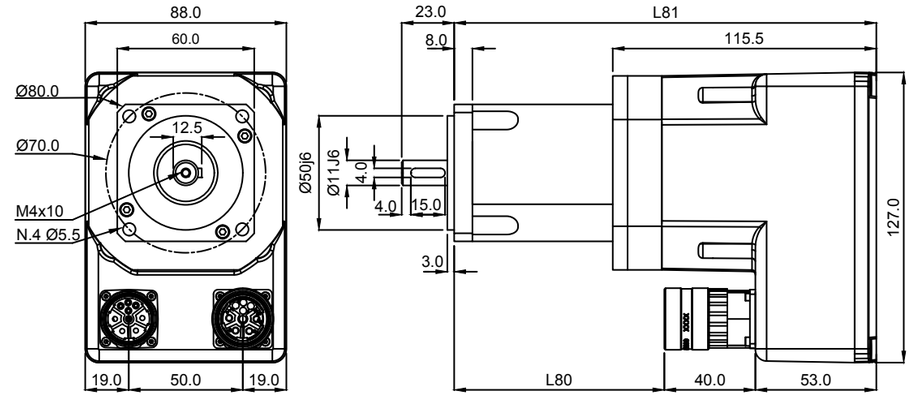
ED4 Servomotors

ED4 Power Supply Technical Data

Model		
Threephase power supply voltage rating	Vac	3 x 230 ± 10%
Input current	Arms	8
Output voltage - DC Bus (to servomotors)	Vdc	320 ± 10%
Nominal output current - DC Bus (to servomotors)	A	8
Peak output current @ 5s (to servomotors)	A	8
Nominal Output power	kW	2.6
DC bus capacitors	uF	235
Tripping voltage of brake circuit	V	390
Overvoltage	V	420
Brake resistor	Ω	25
Max. continuos brake power	W	60
Pulse brake power	kW	6 (@ 25Ω resistoe)
Auxiliary supply voltage	Vdc	24 ± 10%
Max load current – 24V output (to motor)	A	2
Dimensions (L x H x D)	Mm	48 x 170 x 93.7

Square 60 mm Motors

Electrical Characteristic		ED4-060-60-007	ED4-060-60-017
Stall Torque (ΔT 100 °C) - To	Nm	0,7	1,7 (S3-60%) 1,4 (S1)
Stall current - Io	Arms	1,57	3,5 (S3-60%) 2,8 (S1)
Max velocity - Nmax	rpm	6000	6000
Max current - Imax	Arms	6	11
Max torque - Tmax	Nm	2,4	4,6
Voltage constant – Ke	V/Krpm	27	30
Torque constant - Kt	Nm/A	0,45	0,5
Rotor inertia - Jr	gm^2	0,013	0,023
Weight without brake - M	Kg	2,1	2,7
Nominal power - Pn	W	200	540 (S3-60%) 400 (S1)
Drive Size	A	3A	6A



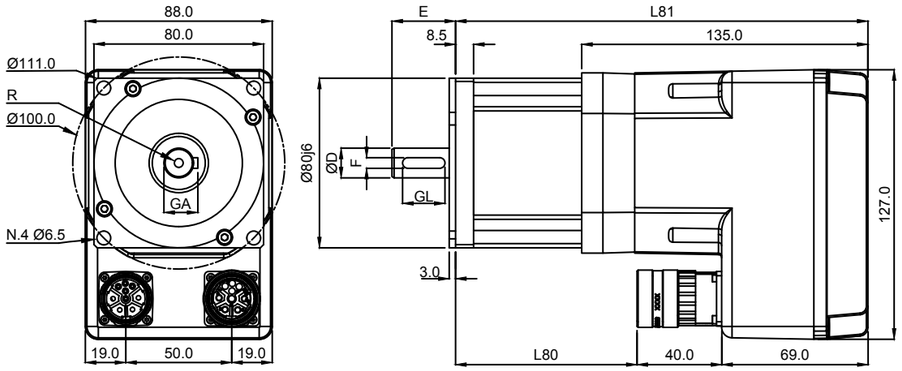
Motor's Length		ED4-060-60-007	ED4-060-60-017
L80	mm	92	120
L81	mm	185	213
L80 with brake	mm	122,4	150,4
L81 with brake	mm	215,4	243,4

Brake Characteristic		ED4-060-60-007	ED4-060-60-017
Supply Voltage	Vdc	24 +/- 6% @ 0,46Adc	
Braking Torque @20°C	Nm	2	
Inertia	gm^2	0,01	
Weight	Kg	0,3	
Ton/Toff	ms	6/25	

Square 80 mm Motors

Electrical Characteristics		ED4-080-30-014	ED4-080-50-014	ED4-080-30-028	ED4-080-50-028	ED4-080-30-039	E-080-50-039
Stall Torque (ΔT 100 °C) - To	Nm	1,4		2,8		3,9	
Stall Current - Io	Arms	1,8	3,1	3,5	5,7	4,9	6,5
Max velocity - Nmax	rpm	3000	5000	3000	5000	3000	5000
Max current - Imax	Arms	6	12	12	12	12	16
Max torque - Tmax	Nm	4,9	5	9	5,8	9,5	9,5
Voltage constant – Ke	V/Krpm	49	28	48	29	48	36
Torque constant - Kt	Nm/A	0,81	0,463	0,794	0,48	0,794	0,595
Rotor inertia - Jr	gm²	0,077		0,142		0,21	
Weight without brake - M	Kg	2,8		3,9		4,4	
Nominal power - Pn	W	370		720		970	
Drive Size	A	3A	6A	6A	6A	6A	6A

Shaft **		
ØD	14J6	19J6
E	30	40
GL	20	32
GA	16	21,5
F	5	6
R	M5x15	M6x16



Motor's lenght		ED4-080-□□-014		ED4-080-□□-028		ED4-080-□□-039	
Shaft ØD		14	19	14	19	14	19
L80	mm	85,5	95,5	110,5	120,5	135,5	145,5
L81	mm	194,5	204,5	219,5	229,5	244,5	254,5
L80 with brake	mm	137,1		162,1		187,1	
L81 with brake	mm	246,1		271,1		296,1	

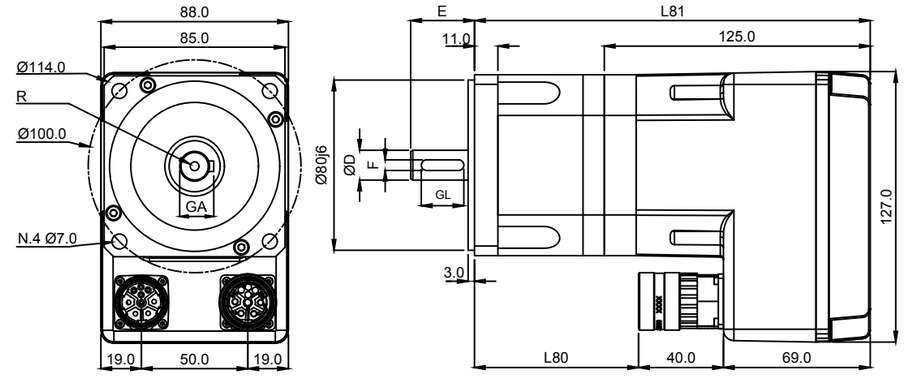
** standard shaft 14J6 – Optional shaft 19J6 on request

Brake Characteristics		ED4-080-□□-014	ED4-080-□□-028	ED4-080-□□-039
Supply Voltage	Vdc	24 +/- 6% @ 0,75Adc		
Braking Torque	Nm	9		
Inertia	gm²	0,06		
Weight	Kg	1		
Ton/Toff	ms	7/40		

Square 85 mm Motors

Electrical Characteristics		ED4-085-50-010	ED4-085-30-015	ED4-085-50-015	ED4-085-30-029	ED4-085-60-029	ED4-085-30-042	ED4-085-50-042	ED4-085-60-042	ED4-085-30-053
Stall Torque (ΔT 100 °C) - To	Nm	1	1,5		2,9		4,2		4	5,3
Stall Current - Io	Arms	1,7	1,65	2,6	3,2	5,2	4,6	7,1	8	5,8
Max velocity - Nmax	rpm	4500	3100	5000	3200	5400	3300	5200	6000	3300
Max current - Imax	Arms	6	6	6	12	12	12	16	16	12
Max torque - Tmax	Nm	3,6	5,2	3,5	10	6,7	10,9	9,6	7,9	10,9
Voltage constant – Ke	V/Krpm	36	55	35	55	34	55	36	30	55
Torque constant - Kt	Nm/A	0,6	0,91	0,58	0,91	0,56	0,91	0,6	0,496	0,91
Rotor inertia - Jr	gm²	0,07	0,092		0,172		0,253			0,333
Weight without brake - M	Kg	2,8	3,2		4,3		5,4			6,5
Nominal power - Pn	W	280	400		700		1000			1200
Drive Size		3A	3A	3A	6A	6A	6A	8A	8A	6A

Shaft		
ØD	14J6	19J6
E	30	40
GL	20	32
GA	16	21,5
F	5	6
R	M5x15	M6x16



Motor's lenght		ED4-085-50-010	ED4-085-□□-015		ED4-085-□□-029		ED4-085-□□-042		ED4-085-□□-053	
Shaft ØD		14	14	19	14	19	14	19	14	19
L80	mm	77	100	110	130	140	160	170	190	200
L81	mm	186	209	219	239	249	269	279	299	309
L80 with brake	mm	105	148		178		208		238	
L81 with brake	mm	214	257		287		317		347	

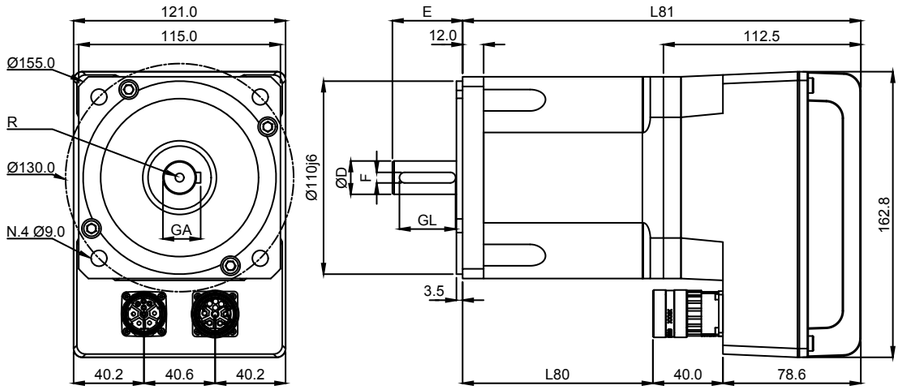
** standard shaft 14J6 – Optional shaft 19J6 on request

Brake Characteristics		ED4-085-50-010	ED4-085-□□-015	ED4-085-□□-029	ED4-085-□□-042	ED4-085-□□-053
Supply Voltage	Vdc	24 +/- 6% @ 0,46 Adc	24 +/- 6% @ 0,75 Adc			
Braking Torque	Nm	2	9			
Inertia	gm²	0,01	0,06			
Weight	Kg	0,3	1			
Ton/Toff	ms	6/25	7/40			

Square 115 mm Motors

Electrical Characteristics		ED4-115-45-021	ED4-115-30-040	ED4-115-40-040	ED4-115-50-040	ED4-115-30-076	ED4-115-40-076	ED4-115-50-076	ED4-115-30-113
Stall Torque (ΔT 100 °C) - To	Nm	2,1	4			7,6	6,1	4,8	7,8
Stall Current - Io	Arms	3,3	4,4	5,4	6,9	7,8	8	8	8
Max velocity - Nmax	rpm	4500	3200	4100	5300	3100	4000	5000	3100
Max current - Imax	Arms	12	12	16	16	16	16	16	16
Max torque - Tmax	Nm	7,1	10,9	11,7	9,3	15,6	12,2	9,6	15,7
Voltage constant – Ke	V/Krpm	39	55	44,4	35	59	46	36	59
Torque constant - Kt	Nm/A	0,65	0,91	0,73	0,58	0,98	0,76	0,60	0,98
Rotor inertia - Jr	gm²	0,28	0,5			0,96			1,4
Weight without brake - M	Kg	4,8	6,8			9,7			12,6
Nominal power - Pn	W	570	1000			1700			2400
Drive Size	A	6A	6A	6A	8A	8A	8A	8A	8A

Shaft **		
ØD	19J6	24J6
E	40	50
GL	32	32
GA	21,5	27
F	6	8
R	M6x16	M8x15



Motor's Lengths		ED4-115-45-021	ED4-115-□□-040	ED4-115-□□-076	ED4-115-□□-113
L80	mm	62	108,5	148,5	188,5
L81	mm	180,5	227	267	307
L80 with brake	mm	105,5	157,5	197,5	237
L81 with brake	mm	224	276	316	356

** standard shaft 19J6 – Optional shaft 24J6 on request

Brake Characteristics		ED4-115-45-021	ED4-115-□□-040	ED4-115-□□-076	ED4-115-□□-113
Supply Voltage	Vdc	24 +/- 6% @ 0,75Adc	24 +/- 6% @ @1Adc		
Braking Torque	Nm	9	18		
Inertia	gm²	0,06	0,24		
Weight	Kg	1,0	1,4		
Ton/Toff	ms	7/40	10/50		

ED4 Motors Coding

1		2	3	4		5	6		7	8	9		10	11	12		13	14
ED4	-	0	8	5	-	3	0	-	0	2	9	-	x	x	x	-	x	x

Pos.	Description
1	Servomotor identification label: "ED4"
2-3-4	Size: Identify the square side of the motor expressed in mm
5-6	Max velocity: Multiplied x 00 defines the motor nominal velocity expressed in rpm
7-8-9	Stall Torque: Defines the motor stall torque expressed in tenth of Nm
10	Brake. 0 = Brake not present 1 = 24vDC brake integrated inside the motor
11	Motor Transducer. 1 = Line Drive 2048p/r incremental encoder with hall sensors B = Absolute Multi Turn Smart ABS 17/33bit
12	Motor Shaft 0 = Shaft without key 1 = Shaft with key (standard)
13-	Cable exit 0 = versus motor shaft
13-14	Available for special version identification 6J = ED4-060 Standard version 00 or 60 = ED4-080, ED4-085 Standard version X0 = ED4-115 Standard version

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