- MASTER CONTROLLERS
- BRUSHLESS DRIVES & MOTORS
- STEPLESS DRIVES & MOTORS
- PERIPHERALS
- HMI: INDUSTRIAL TOUCH PANELS
- SOLUTIONS

Solution in Motion

precision and control

harmony of movement

problem solving

CMZ SISTEMI ELETTRONICI

BD SERIES

The BD series family currently consists of two systems: IBD (Integrated Brushless Drive) and NBD (Near by Brushless Drive).
The family IBD is made up of brushless motors with integrated drive very compact and high-performance. They are equipped with a single connector for DC bus at 560Vdc, supply of the logic section at 24 Vdc, STO safety function, homing input, two connectors for the input and the output of the bus EtherCAT or CANopen and one connector for I/O allowing you drastically to reduce the wiring and the space in the electrical cabinet.
The wide range of sizes (from 1,3 to 30 Nm) on flanges 60-80-100-142-190mm and IP65 protection makes the integrated servomotor IBD suitable for many multi-axis applications.
The NBD family consists of a single system powered with DC bus at 560Vdc and 24Vdc for the logic section. Rated current is 5,3 Arms (15Arms peak current) It allows the management of motors with resolver, incremental encoder, incremental encoder with hall sensor, absolute encoder HIPERFACE. Its IP65 rating makes it possible to install NBD near the motor directly on the mechanics of the machine. Also this system is equipped with STO safety functions. The fieldbus CANopen DS402 and DS402 over EtherCAT allow IBD and NBD to be used with the controller of the FCT series and with different controllers especially with controllers that use the environment CODESYS 3.5, where, using Softmotion, the customer can select the drive IBD and NBD between the different available in CODESYS.

La famiglia BD series attualmente è composta dai due sistemi IBD e NBD.
La famiglia IBD è composta da motori brushless con drive integrato molto compatti e di grandi prestazioni. Sono dotati di un unico connettore per il DC bus a 560 Vdc, dell'alimentazione della sezione logica a 24 Vdc e della funzione di sicurezza STO, dell'ingresso di homing, di 2 connettori per l'ingresso e l'uscita del bus di campo CANopen o EtherCAT e di un connettore per gli I/O permettendo di ridurre drasticamente i cablaggi e lo spazio all'interno del quadro.
L'ampia gamma di taglie (da 1,3 a 30 Nm) su flange da 60-80-100-142-190 mm e la protezione IP65 rende il servomotore integrato IBD adatto a molte applicazioni multiasse.
La famiglia NBD è composta da un unico sistema alimentato con DC bus a 560Vdc e 24Vdc per la sezione logica. La corrente nominale è di 5,8 Arms (15Arms di picco) e di 10 Arms (21 Arms di picco). Permette la gestione di motori con resolver, encoder incrementale, encoder incrementale con sensore di hall, encoder assoluti HIPERFACE. Il suo grado di protezione IP65 permette di installare NBD nei pressi del motore direttamente sulla meccanica della macchina. Anche questo sistema è dotato della funzione di sicurezza STO.
I bus di campo EtherCAT e CANopen permettono a IBD e NBD di essere utilizzati sia con il controllore FCT sia con controllori diversi e soprattutto con controllori che usano l'ambiente CODESYS 3.5, infatti con Softmotion i clienti potranno scegliere il drive IBD e NBD tra i diversi messi a disposizione da CODESYS.

NEW
PRODUCT

Ongoing *project*

Mo=1,3Nm
Flange 60mm

• INTEGRATED BRUSHLESS DRIVE

HARDWARE FEATURES

Power supply
Nominal 560Vdc (min 275Vdc max 730Vdc)
Torque range
Stall torque 1,3-1,5-2,8-4-5,6-6-15-30Nm, rated speed 3000 rpm
Feedback
HIPERFACE absolute encoder single and multiturn
On board I/O's
For sizes from 1,5Nm to 30Nm
6 digital IN 24Vdc general purpose, configurable as:
PSTOP, NSTOP, Enable, Home, Capture
3 digital OUT 24Vdc 250mA, general purpose
1 digital IN/OUT 24Vdc with configurable function
3 differential I/O's configurable as master incremental encoder and Step/Direction
1 analogue IN +/-10V
For size 1,3Nm
2 digital IN 24V PNP
Interface
EtherCAT, CANopen
Safety
STO (safe torque off)
Protection
IP65
Option
Internal brake

FUNCTIONAL FEATURES

Integrated movement features:
device profile DS402, interpolated mode, positioning, extended gearing function, homing, capture

Stand alone programmability
according to the standard IEC61131, ST language

Capture input

PC parametrization tool

Protection
I2t, Overload, Short circuit, Overtemperature, Overvoltage

CANopen® EtherCAT®

• BDPOW POWER SUPPLY

AC/DC power supply unit
From 20A to 40A with the possibility of online diagnostics and parametrization via serial connection and PC interface (SD Setup)
Power supply
Three phase rated voltage: 180 ÷ 520Vac 50/60Hz
Main filter
Integrated
Internal Braking Resistor
Resistance: 33Ω
Power rating: 180W
Pulse power rating: 20kW (0,3 sec)

Alimentatore AC/DC
Da 20A o 40A con possibilità di diagnostica e parametrizzazione online tramite connessione seriale e interfaccia su PC (SD Setup)
Alimentazione
Tensione nominale trifase: 180 ÷ 520Vac 50/60Hz
Filtro
Integrato
Resistenza di frenatura interna
Resistenza: 33Ω
Potenza nominale: 180W
Potenza istantanea: 20kW (0,3 sec)

• OVERALL DIMENSIONS

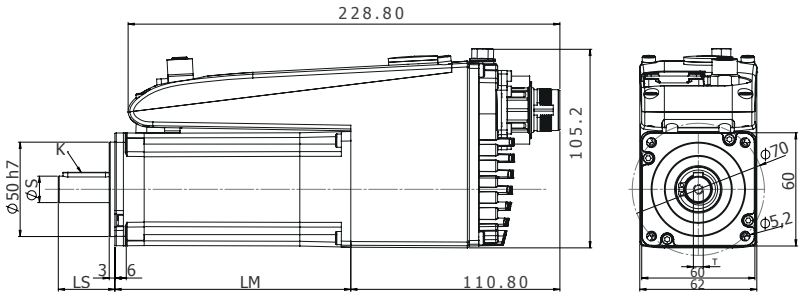
Type	BDPOW20	BDPOW40
Standard dimensions (mm) *	H352,5xW82,4xD270,6	
Weight (kg)	5,8	

*maximum overall dimensions

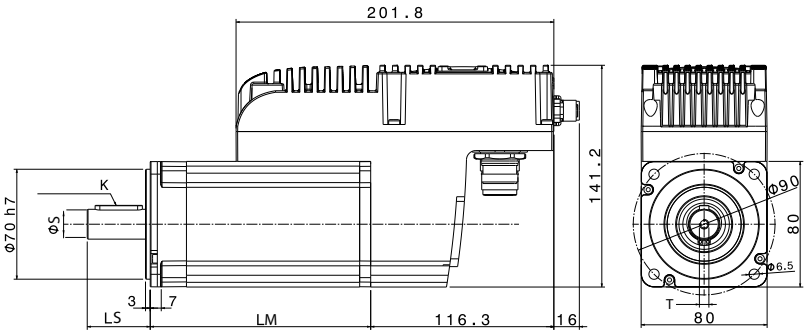
IBD

Brushless
motors & drives
integrated and Near by

IBD Flange 60 mm



IBD Flange 80 mm



• OVERALL DIMENSIONS

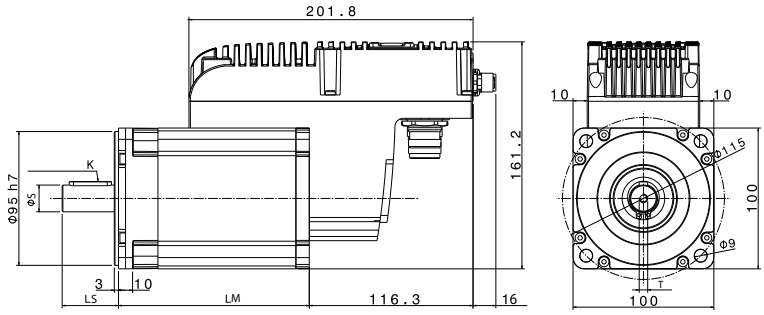
Type	IBD5662-1,3Nm	IBD5650-1,5Nm	IBD5610-2,8Nm	IBD5620-4Nm
Flange (mm)	60	80	80	80
Lenght LM without brake (mm)	125	90	115	140
Lenght LM with brake (mm)	162	132	157	182
Shaft lenght LS (mm)	30	30	40	40
Shaft diameter (ØS)	14h6	14h6	19h6	19h6
Thread (T)	M5	M5	M6	M6
Key dimensions (K)	5x5x30	5x5x25	6x6x30	6x6x30

• TECHNICAL FEATURES

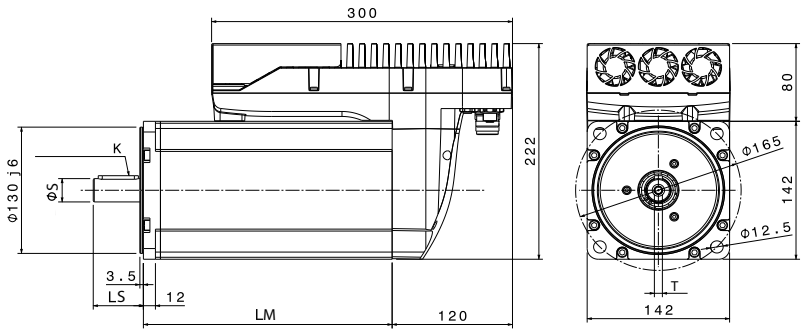
Type	*M0* Stall torque (Nm)	*Mn* Rated torque (Nm)	*Mpeak* Peak Torque (Nm)	Power Watt* (W)	*Jm* Rotor Inertia ($kgcm^2$)	*Vn* Rated Speed (rpm)	IBD Weight no brake (Kg)	IBD Weight with brake (Kg)
IBD5662	1,3	0,9	3,9	550	0,24	5000	1,8	2
IBD5650	1,5	1,4	4,5	520	0,64	3000	3,3	4
IBD5610	2,8	2,55	8,4	950	1,16	3000	4,1	4,8
IBD5620	4	3,2	12	1200	1,58	3000	5,1	5,8

*Power consumption in continuous operation

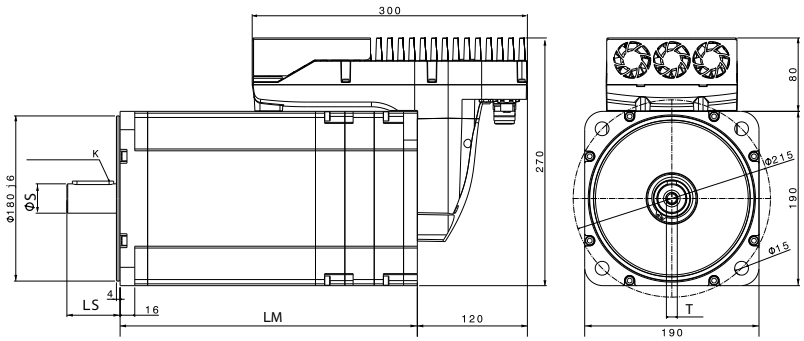
IBD Flange 100 mm



IBD Flange 142 mm



IBD Flange 190 mm



• OVERALL DIMENSIONS

Type	IBD5630-5,6Nm	IBD5640-6Nm	IBD56F0-15,4Nm	IBD56G0-30Nm
Flange (mm)	100	100	142	190
Lenght LM without brake (mm)	135,5	165,5	243	303,5
Lenght LM with brake (mm)	186	216	268	333,5
Shaft lenght LS (mm)	40	40	50	58
Shaft diameter (ØS)	19h6	19h6	24k6	32k6
Thread (T)	M6	M6	M8	M12
Key dimensions (K)	6x6x30	6x6x30	8x7x40	10x8x45

• TECHNICAL FEATURES

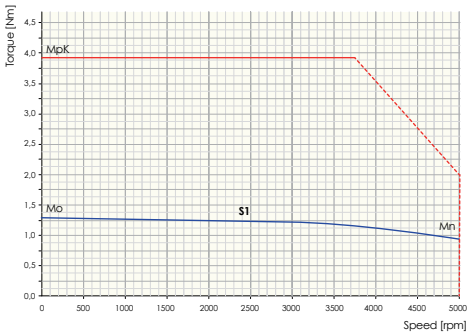
Type	*M0* Stall torque (Nm)	*Mn* Rated torque (Nm)	*Mpeak* Peak Torque (Nm)	Power Watt* (W)	*Jm* Rotor Inertia (kgcm²)	*Vn* Rated Speed (rpm)	IBD Weight no brake (Kg)	IBD Weight with brake (Kg)
IBD5630	5,6	4,3	22	1600	2,8	3000	6,7	7,9
IBD5640	6	5	22	1850	4	3000	8	9,2
IBD56F0	15,4	11,7	45	4300	11,5	3000	17	18,5
IBD56G0	30	25	70	9200	74	3000	38	43

*Power consumption in continuous operation

• TORQUE CURVES

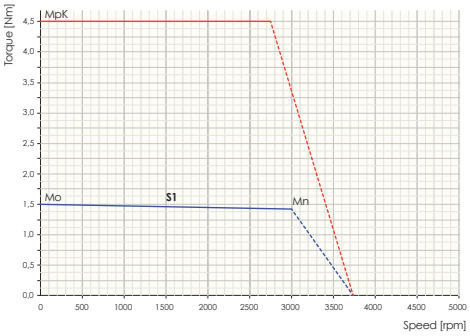
IBD5662 Flange 60 - 1,3 Nm [M0]

Speed/torque curve at 560Vdc - Te: 40°C



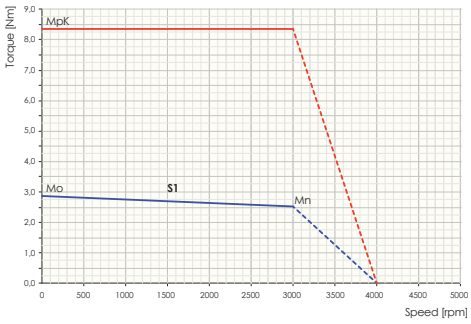
IBD5650 Flange 80 - 1,5 Nm [M0]

Speed/torque curve at 560Vdc - Te: 40°C



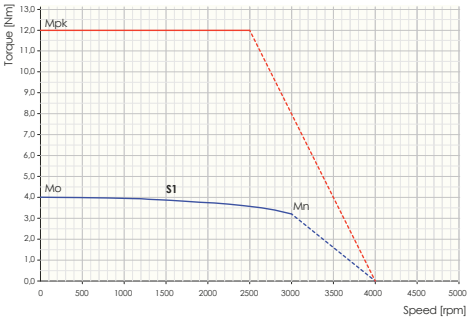
IBD5610 Flange 80 - 2,8 Nm [M0]

Speed/torque curve at 560Vdc - Te: 40°C



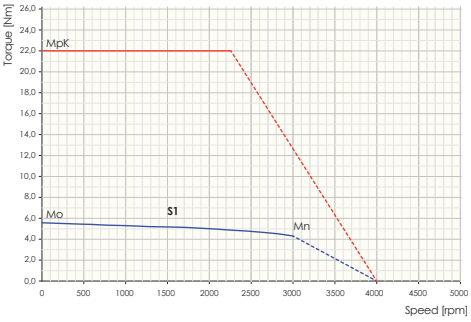
IBD5620 Flange 80 - 4 Nm [M0]

Speed/torque curve at 560Vdc - Te: 40 °C



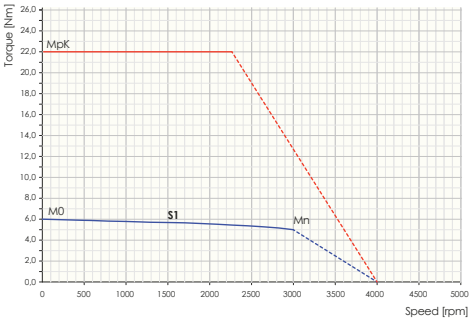
IBD5630 Flange 100 - 5,6 Nm [M0]

Speed/torque curve at 560Vdc - Te: 40°C



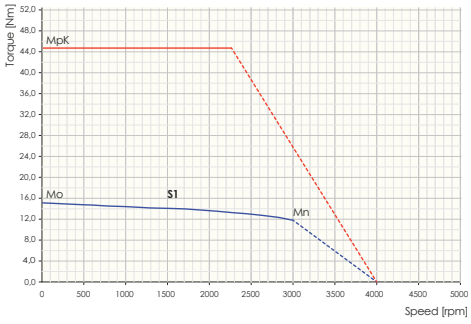
IBD5640 Flange 100 - 6 Nm [M0]

Speed/torque curve at 560Vdc - Te: 40°C



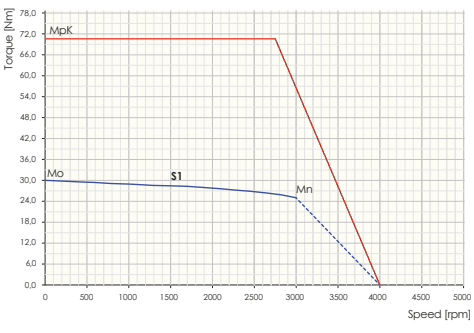
IBD56F0 Flange 142 - 15,4 Nm [M0]

Speed/torque curve at 560Vdc - Te: 40°C

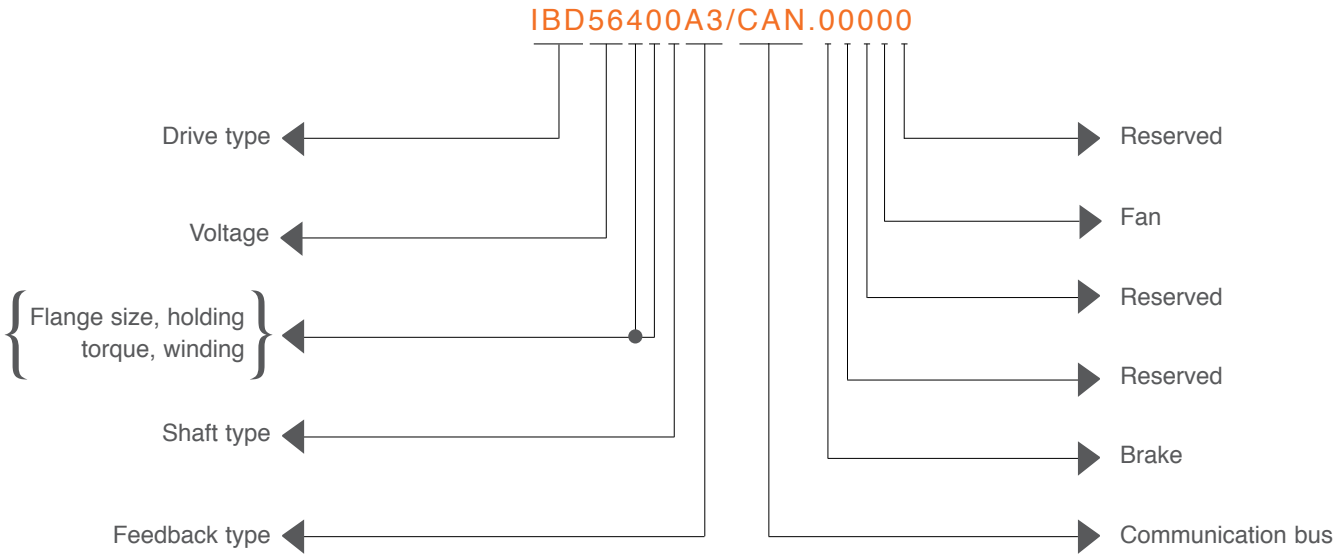


IBD56G0 Flange 190 - 30 Nm [M0]

Speed/torque curve at 560Vdc - Te: 40°C



• ORDER CODE EXAMPLE



• IBD ORDERING CODE

Ordering code with optionals:		IBD56abc/d.efghi							
Options	IBD	56	a	b	c	/d	.e	fg	hi
a	Flange 60mm - 1,3 Nm (8 poles) 560V/5000rpm		62						
	Flange 80 mm - 1,5 Nm (8 poles) 560Vdc/3000rpm		50						
	Flange 80 mm - 2 ,8 Nm (8 poles) 560Vdc/3000rpm		10						
	Flange 80 mm - 4 Nm (8 poles) 560Vdc/3000rpm		20						
	Flange 100 mm - 5,6 Nm (8 poles) 560Vdc/3000rpm		30						
	Flange 100 mm - 6 Nm (8 poles) 560Vdc/3000rpm		40						
	Flange 142 mm - 15,4 Nm (8 poles) 560Vdc/3000rpm		F0						
	Flange 190 mm - 30 Nm (10 poles) 560Vdc/3000rpm		G0						
b	Keyed shaft *			0					
	Smooth shaft			1					
c	Absolute encoder Hiperface multiturn SKM36 128sin/rev, 4096rev				A0				
	Absolute encoder Hiperface singleturn SEK37 16sin/rev				A3*				
d	CAN communication					CAN			
	EtherCAT communication					ETC			
e	No brake						0		
	With brake						1		
fg	Reserved							00	
hi	With fan								30 only for FL142/190
	Without fan								00 only for FL60/80/100

* Standard

• CABLES FOR IBD

Cable with connector motor side and drive side for **dynamic laying**: xxxx = cm

Type	Description	Lenght (mt)
CIBR. CFCG.IIPS.B.0300	Power cable for IBD	3
CMUL. CFCG.IIPS.C.0300	I/O cable for IBD	3
CCAN.DFCS.CF1S.E.0300	Interface CAN cable from CMZ MASTER to IBD	3
CCAN.DFCS.CF1S.E.1000		10
CCAN.CM1S.CF1S.E.0100	Interface CAN cable from IBD to IBD	1
CCAN.CM1S.CF1S.E.0300		3
CCAN.CM1S.CF1S.E.1000		10
CETC.RMCS.CMCS.M.0300	Interface EtherCAT cable from CMZ master (RJ45) to IBD	3
CETC.RMCS.CMCS.M.0500		5
CETC.RMCS.CMCS.M.1000		10
CETC.CMCS.CMCS.M.0100	Interface EtherCAT cable from IBD to IBD	1
CETC.CMCS.CMCS.M.0300		3
CETC.CMCS.CMCS.M.0500		5
CECT.CMCS.CMCS.M.1000		10
C232.DFCS.CMCG.K.0100	Serial RS232 interface cable for debugging	1

For cables with different lenghts ask to sale office

• POWER SUPPLY

Ordering code with optional BDPOWXX/000.abc		
BDPOW20/000.abc	Three phase power supply with output rated current 20A (10kWatt)	
a	1	one male output - (ONLY FOR SPARE)
	2	two female outputs
b	0	Reserved
c	0	Reserved
BDPOW40/000.abc	Three phase power supply with output rated current 40A (20kWatt)	
a	1	one male output - (ONLY FOR SPARE)
	2	two female outputs
b	0	Reserved
c	0	Reserved

• NEAR BY

Drive IP65 for linear and rotating brushless motors

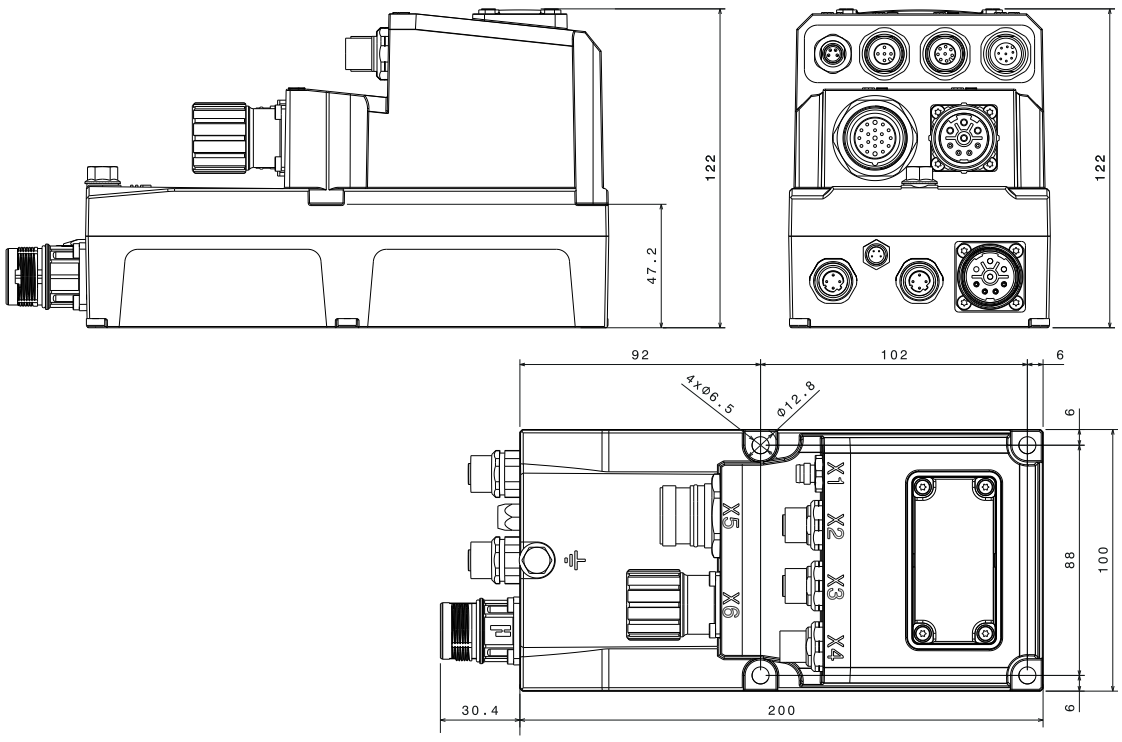
HARDWARE FEATURES

Power supply
Nominal 560Vdc (min 275Vdc max 730Vdc)
Logic supply
24Vdc
Rated current
8 Arms - 10 Arms
Peak current
15 Arms - 21Arms
Feedback
Resolver
TTL incremental encoder + HES
Single and multiturn absolute encoder HIPERFACE
On board I/O's
3 digital IN PNP 24V
2 digital OUT PNP 24V
2 digital IN/OUT bidirectional PNP
1 analog IN +/- 10V
Encoder master IN, + 5V out
Interface
EtherCAT, CANopen
Safety
STO 2 channels, SIL2
Protection
IP65

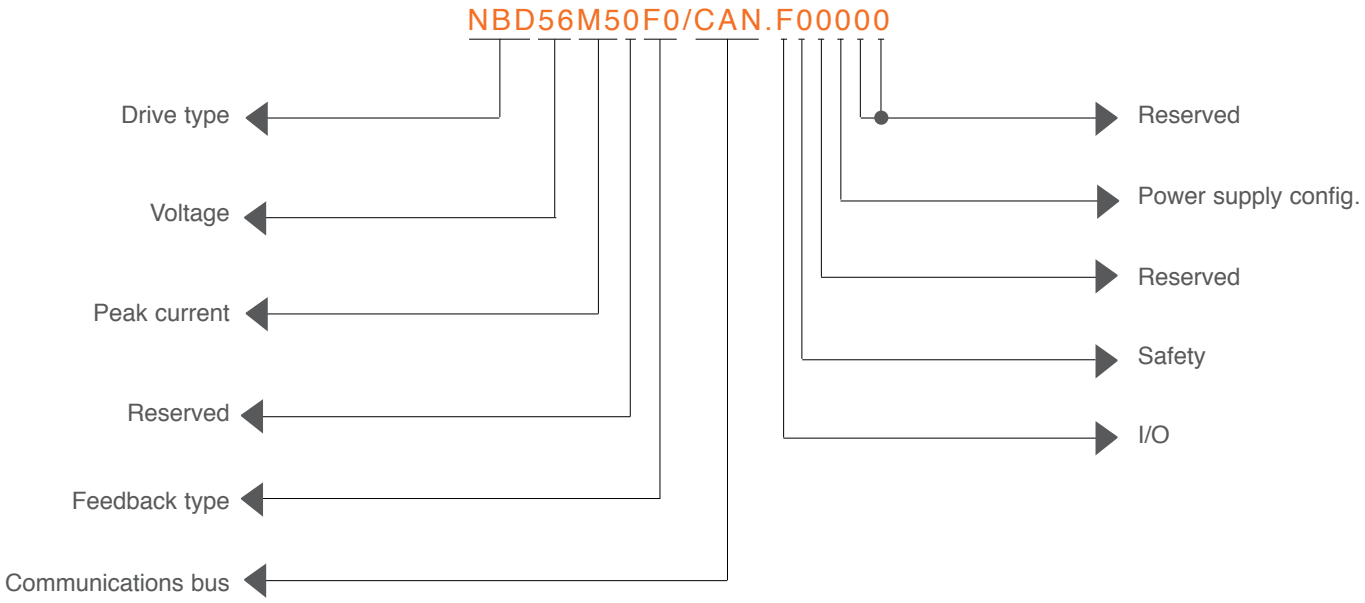
NEW

CANopen EtherCAT

• OVERALL DIMENSIONS



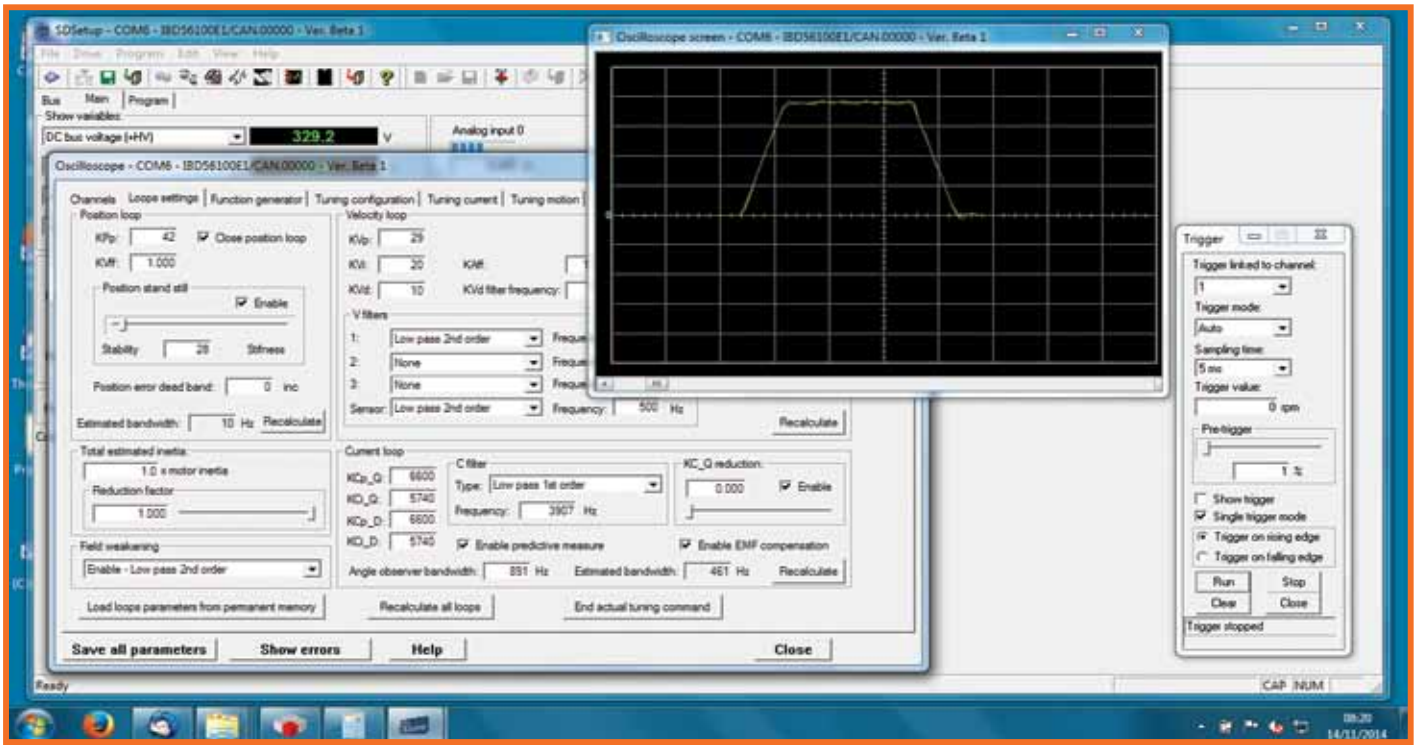
• ORDER CODE EXAMPLE



• ORDERING CODE

Ordering code with optionals:											
	NBD	56	a	b	c	/d	.e	f	g	h	il
Options											
a	*Peak current* 15A 21A		M5 H5								
b	Reserved			0							
c	TTL incremental encoder + HES				F0						
	Multiturn absolute encoder HIPERFACE										
	Single absolute encoder HIPERFACE										
	Resolver										
d	CAN communication EtherCAT communication					CAN ETC					
e	No I/O With I/O (3 conn M12) and local STO (1 conn. M8)						0 F				
f	Safety							0 STO			
g	Reserved								0		
h	Power supply configuration									0 star (single on M23)	
il	Reserved										0 0

• SD setup



SD setup is the development environment for the configuration, parameterization, tuning and programming of the drives ISD/SVM and IBD/Near by using the RS232 serial connection or a centralized connection through a fieldbus when the master controller is a controller of the FCT family.

It is a software that combines various tools such as:

- Instant monitor of the main variables of the system, but also of all the secondary variables through an access to vocabulary
- Configuration of the system (such as configuration of the digitals I/O modules and the maximum limits of speed/acceleration)
- Updating of parameters and firmware
- Auto-tuning and dedicated tuning of the current loops, speed and position, with help of procedures for self-esteem of the moment of inertia
- Oscilloscope for the analysis of the variables
- Tools for testing of basic movements (Function Generator)

Finally, recalling that the systems are also programmable, SD setup is also proposed as a tool that allows editing and debugging programs written in IEC61131 type Structured Test.

SD setup è l'ambiente di sviluppo per la configurazione, parametrizzazione, programmazione e taratura degli azionamenti ISD/SVM e IBD/Near by utilizzando la seriale RS232 o un collegamento centralizzato tramite bus di campo quando il master controller è un controllore della famiglia FCT.

Si tratta di un software che unisce diversi strumenti come:

- Monitor immediato delle principali variabili di sistema ma anche di tutte le variabili secondarie tramite un accesso a vocabolario
- Configurazione del sistema (ad esempio degli I/O digitali, dei limiti massimi di velocità/accelerazione)
- Aggiornamento di parametri e firmware
- Autotuning e taratura dedicata dei loop di corrente, velocità e posizione, con ausilio di procedure di autostima del momento di inerzia
- Oscilloscopio per l'analisi delle varie grandezze
- Strumenti per il test dei movimenti base (Function Generator)

Infine, ricordando che i sistemi sono anche programmabili, SD setup si propone anche come lo strumento che permette l'editazione e il debug dei programmi scritti in linguaggio IEC61131 di tipo Structured Test.

Solution in **Motion**

precision and control | harmony of movement | problem solving

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