- 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

CMZ SISTEMI ELETTRONICI

Solution in **Motion**

Master controllers
p. 08

FCT200 8 axes motion controller
FCT300 99 axes motion controller

Brushless Drives & motors
p. 14

LBD Brushless drive 230-400V
EASY Brushless drive 230V
MMB Servo motors
IBD Integrated Brushless Drive
NEAR BY Drive for brushless and linear motors

Stepless Drives & motors
p. 44

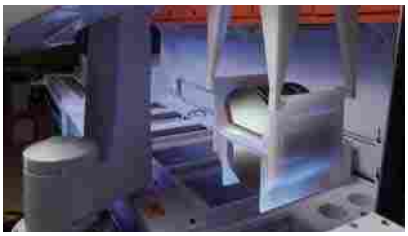
ISD Integrated Stepless Drive
SVM Stepless drive
MM Stepless motors

Peripherals
p. 58

CANopen modules
I/O modules

HMI: Industrial touch panels
p. 64

PK Series embedded systems
PT Series embedded systems



Solutions
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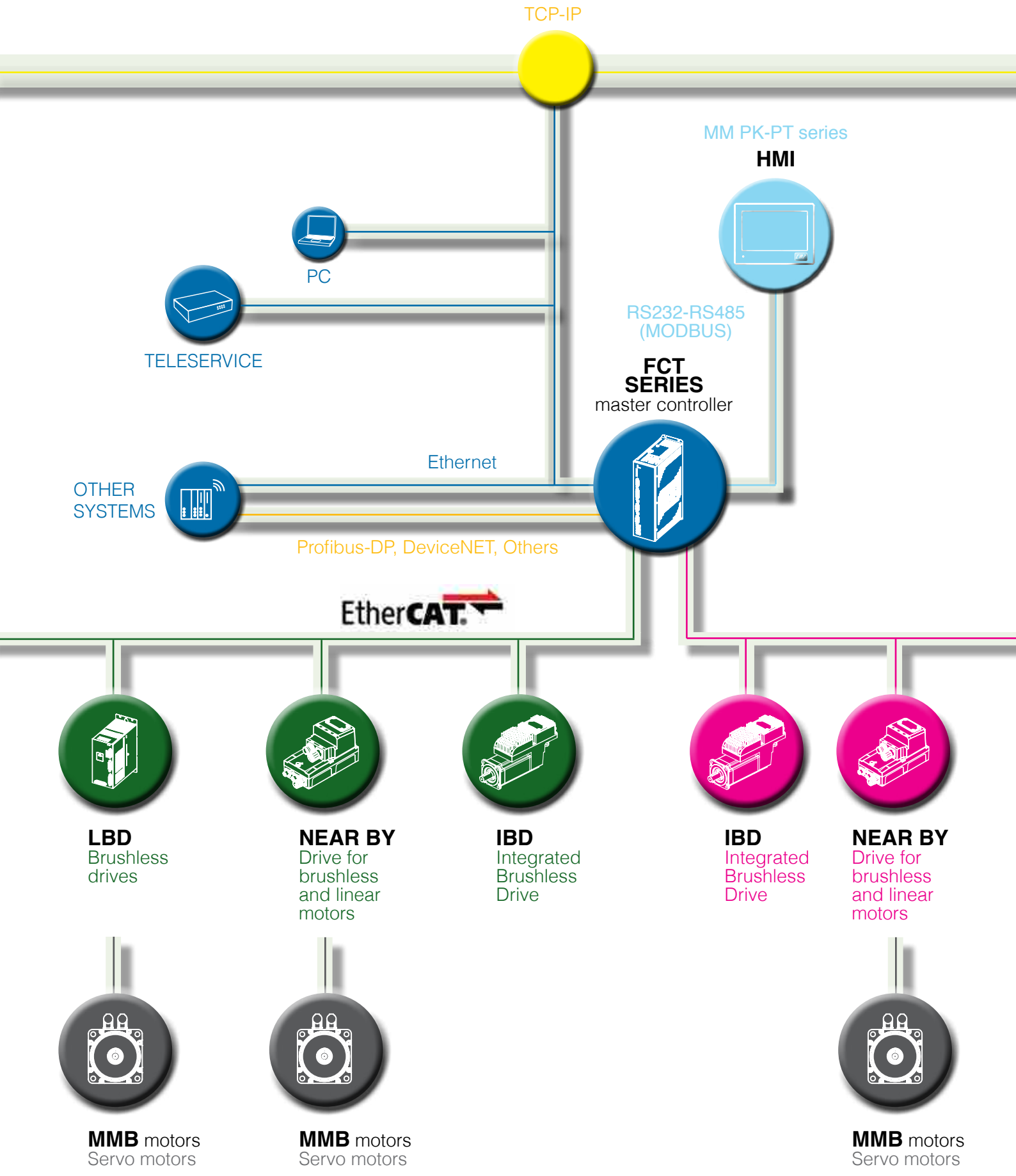
Solution for OEM industry
New activity vision

Company profile
p. 80

History
Staff
Production Process
Service network and Distribution
Marketing communication


TCP-IP
MM PK-PT series
HMI
PC
TELESERVICE
RS232-RS485
(MODBUS)
FCT
SERIES
master controller
Ethernet
OTHER
SYSTEMS
Profibus-DP, DeviceNET, Others
EtherCAT.
LBD
Brushless
drives
NEAR BY
Drive for
brushless
and linear
motors
IBD
Integrated
Brushless
Drive
IBD
Integrated
Brushless
Drive
NEAR BY
Drive for
brushless
and linear
motors
MMB motors
Servo motors
MMB motors
Servo motors
MMB motors
Servo motors

CMZ SISTEMI ELETTRONICI

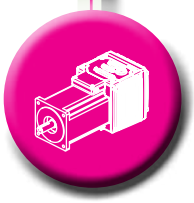
Global solution
Soluzione Globale

The global solution for automation proposed by CMZ is based on a complete range of products suitable for the total realization of a machine from the point of view of ‘”automation and drive” with particular attention to the flexibility of the solutions and the utilization of the most important fieldbus.
Starting from motion control as a core component, the proposal is developed towards the fieldbus, with a wide range of motors and drives and input/output devices, and towards the user thanks to our panels. The long experience in the field of applications is added as a guarantee of good results.

La soluzione globale per l’automazione proposta da CMZ si basa su una gamma completa di prodotti atti alla realizzazione totale di una macchina dal punto di vista dell’ “automation and drive” con particolare attenzione alla flessibilità delle soluzioni e all’uso dei più importanti bus di campo.
A partire dal motion control, come componente centrale, la proposta si sviluppa verso il bus di campo, con un’ampia gamma di motori e azionamenti e dispositivi di input/output e verso l’utilizzatore grazie alla proposta di pannelli. La longeva esperienza di CMZ nel campo delle applicazioni si aggiunge come garanzia di ottimi risultati.

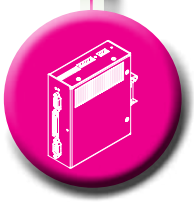
CANopen

LBD/EASY
Brushless drives



ISD
Integrated Stepless Drive

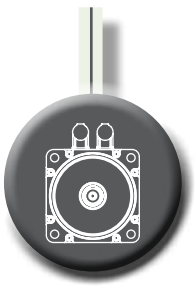
SVM
Stepless drives



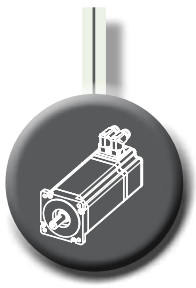
CPENCA
Axis module

I/O
modules

Encoder



MMB motors
Servo motors



MM motors
Stepless motors

FCT SERIES

Master CANopen-EtherCAT

The controllers of the FCT series are black box motion controllers equipped with a PowerPC microprocessor, and programmable according to the standard IEC61131.
The systems are CANopen and EtherCAT master and they are based on a real-time operating system (Precise MQX) with drivers developed by CMZ.
With the IEC61131 approach the libraries can also be developed by the customer/user.
CMZ has developed a wide range of libraries providing the functionality for all most common applications: electronic cams, interpolation, flying shear, weight and temperature control and libraries dedicated to the realization of whole machine.

I controllori della FCT series sono sistemi in formato black box dotati di un processore PowerPC e programmabili secondo lo standard IEC61131.
I sistemi sono Master CANopen e EtherCAT, ciò consente l'interfacciamento verso azionamenti e periferiche CMZ o altri dispositivi di commercio. Inoltre sono basati su un sistema operativo standard real-time (Precise MQX) con drivers sviluppati da CMZ.
Con l'approccio IEC61131 le librerie possono essere sviluppate anche dal cliente/utilizzatore.
CMZ ha sviluppato una vasta gamma di librerie garantendo le funzionalità per tutte le applicazioni più comuni: camme elettroniche, interpolazione, taglio al volo, controllo peso, controllo temperatura, librerie dedicate alla realizzazione dell'intera macchina.

EtherCAT® CANopen

FCT200

Master contollers

• HARDWARE FEATURES

Processor
PowerPC family

Dynamic RAM
16 MByte - SDRAM 132MHz

Boot Flash eprom
1 MByte

Serial Flash Eprom
32 MByte

Ferromagnetic serial FRAM
32 KByte

Communication ports
RS232C, Ethernet 10/100 Mbps, serial RS422-485, synchronous communication (SMI port)

Standard bus on board
1xCANopen port

Optional bus
1xAuxiliary CANopen, Profibus DP slave

Mass memory
SD card for user data storage

System time clock management

Power supply 24Vdc±20%

Dimensions (mm)
H 170 x W 54 x D 110

Weight (Kg)
0.8

Master CANopen

• SOFTWARE FEATURES

Real Time OS: PRECISE MQX
IEC61131 Environment: 4 CONTROL or CODESYS
CMZ Motion libraries
CMZ Application libraries
CMZ Configurator

• ORDERING CODE FOR HARDWARE

CODE	DESCRIPTION
FCT200.1101.XXX	FCT200 System full version 2 CAN+ETH+RS232+SMI+PROFIBUS
FCT200.2106.XXX	FCT200 System reduced version 2 CAN+ETH+RS232+SMI
FCT200.0100.XXX	FCT200 System reduced version CAN+ETH+RS232+SMI
	The final code “xxx” concerns the software licence for the devolepment environment 4CONTROL or CODESYS. See the table below. For more information on order codes contact CMZ sales office.

• ORDERING CODE FOR SOFTWARE RUNTIME LICENCES “.xxx”

CODE	DESCRIPTION
.000	4CONTROL
.101	CODESYS with PLC
.102	CODESYS with PLC+WebVisu
.103	CODESYS with Soft Motion
.104	CODESYS with Soft Motion + CNC
.105	CODESYS with Soft Motion +WebVisu
.106	CODESYS with Soft Motion + CNC + WebVisu

• HARDWARE FEATURES

Processor
PowerPC family

Dynamic RAM
512 MByte - DDR2 528MHz

Boot Flash eprom
8 MByte

Serial Flash Eprom
64 MByte

Ferromagnetic serial FRAM
128 KByte

Communication ports
RS232, 2xEthernet 10/100/1000 Mbps,
serial RS422-485, synchronous communication (SMI port)

Standard bus on board
2xCANopen ports, 1xEtherCAT

Optional bus
2xAuxiliary CANopen, 2xEthernet 10/100 Mbps,
Profibus DP slave, DeviceNet, EtherNet/IP

Mass memory
1xSD card for user data storage 1x internal SD card slot

System time clock management

Power supply 24Vdc±20%

Dimensions (mm)
H 250 x W 78 x D 165

Weight (Kg)
1.8

Master CANopen-EtherCAT

• SOFTWARE FEATURES

Real Time OS: PRECISE MQX
IEC61131 Environment: 4 CONTROL or CODESYS
CMZ Motion libraries
CMZ Application libraries
CMZ Configurator

• ORDERING CODE FOR HARDWARE

CODE	DESCRIPTION
FCT300.0100.XXX	FCT300 system basic version 2 CAN+2 ETH GBIT+RS232+SMI
FCT300.1101.XXX	FCT300 system base version 4 CAN+ 4 ETH GBIT+ RS232+SMI
FCT300.2102.XXX	FCT300 system full version 4 CAN+2 ETH GBIT+2 ETH 10/100+ RS232+SMI+PROFIBUS DP
FCT300.3103.XXX	FCT300 system full version 4 CAN+2 ETH GBIT+2 ETH 10/100 + RS232+SMI+DEVICENET
FCT300.4103.XXX	FCT300 system full version 4 CAN+2 ETH GBIT+2 ETH 10/100 + RS232+SMI+ETHERNET IP
FCT300.5103.XXX	FCT300 system full version 4 CAN+2 ETH GBIT+2 ETH 10/100 + RS232+SMI+PROFINET IO 2P
	The final code “xxx” concerns the software licence for the devolepment environment 4CONTROL or CODESYS. See the table below. For more information on order codes contact CMZ sales office.

• ORDERING CODE FOR SOFTWARE RUNTIME LICENCES “.xxx”

CODE	DESCRIPTION
.000	4CONTROL
.101	CODESYS with PLC
.102	CODESYS with PLC+WebVisu
.103	CODESYS with Soft Motion
.104	CODESYS with Soft Motion + CNC
.105	CODESYS with Soft Motion +WebVisu
.106	CODESYS with Soft Motion + CNC + WebVisu

4CONTROL

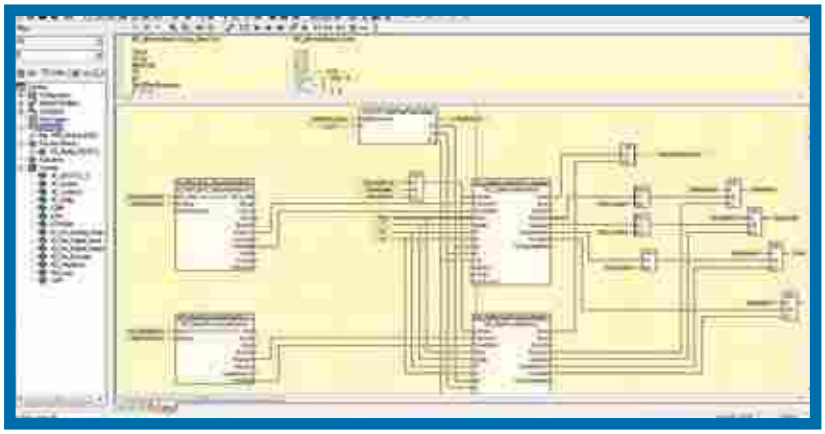
The Environment

Master Contollers

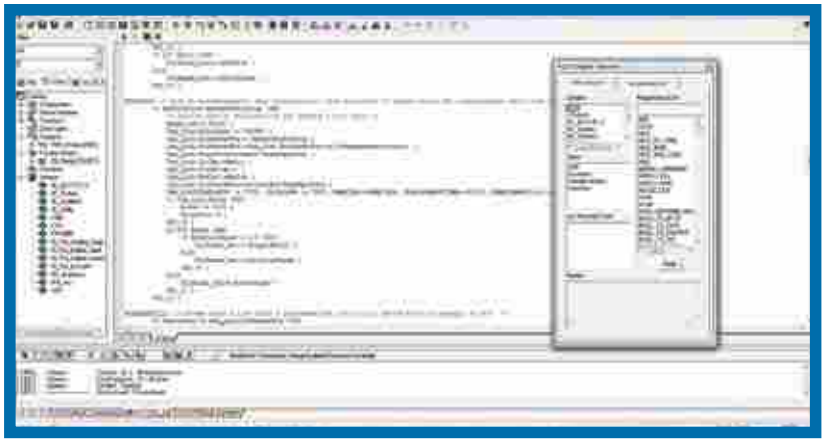
It is a IEC61131 environment equipped with five program languages, three of them graphical (ladder, FBD and SFC) and two textual (Structured Text and IL). The standard IEC libraries have been complemented by utility libraries for the management of the fieldbus CANopen and EtherCAT, as well as by important libraries for motion such as the management of electronic cams, axis interpolation, G-Code interpreter with which we can address the implementation of application programs for the most important types of automation machines. The environment 4Control is complemented by a CONFIGURATOR that allows you to easily define the hardware pheriferal s (local or remote, on the fieldbus) managed by the controller and to monitor the entire configuration (fieldbus, boards, I / O performance of the system etc.)

Si tratta di un ambiente IEC61131 dotato di cinque differenti linguaggi di programmazione di cui due di tipo testuale (Structured Test e InstructionList) e tre di tipo grafico (Function Blocks Diagram, Ladder Diagram e Sequential Flow Chart). Le librerie standard IEC sono state affiancate da librerie di utilità per la gestione dei bus di campo CANopen e EtherCAT nonché di importanti librerie per il motion quali la gestione di camme elettroniche, l'interpolazione assi, l'interpretazione dei file G-Code con le quali si può affrontare la realizzazione di programmi applicativi per le più importanti tipologie di macchine automatiche. L'ambiente 4Control è completato da un configuratore di sistema che permette di definire facilmente le periferiche HW (locali o remote sui bus di campo) gestite dal controllore e di monitorare l'intera configurazione (bus di campo, assi, I/O, prestazioni del sistema ecc.)

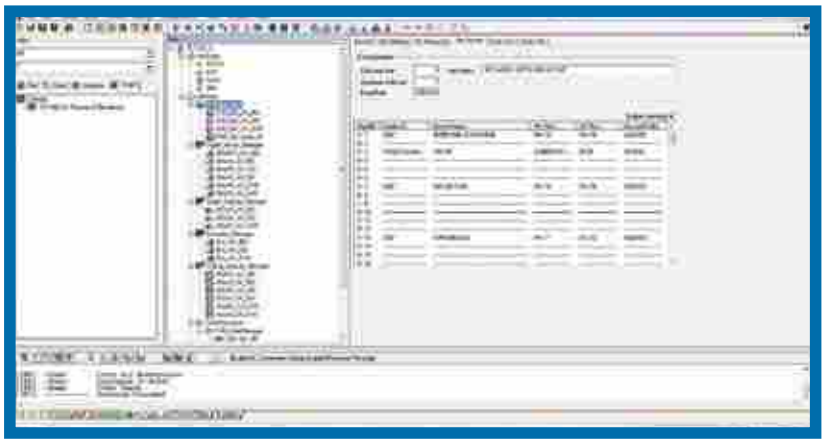
• Function block diagram



• Structured text language



• Ladder language and simulator



CODESYS

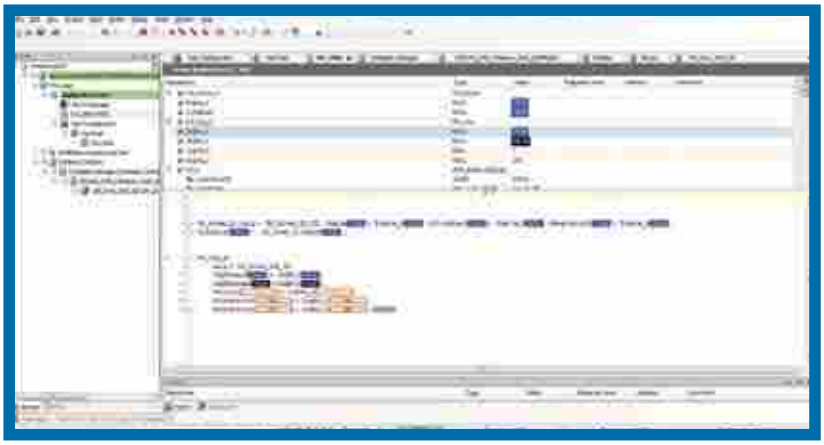
The Environment

Master Contollers

It is currently the most widespread and well-known development environment non-proprietary. Thanks to CODESYS, the controllers of FCT series become controllers open to all CODESYS users, who can then take advantage of the libraries, programming techniques, examples, and in general the services that the world CODESYS provides. **Even in the case of CODESYS CMZ provides motion and applicative libraries**.

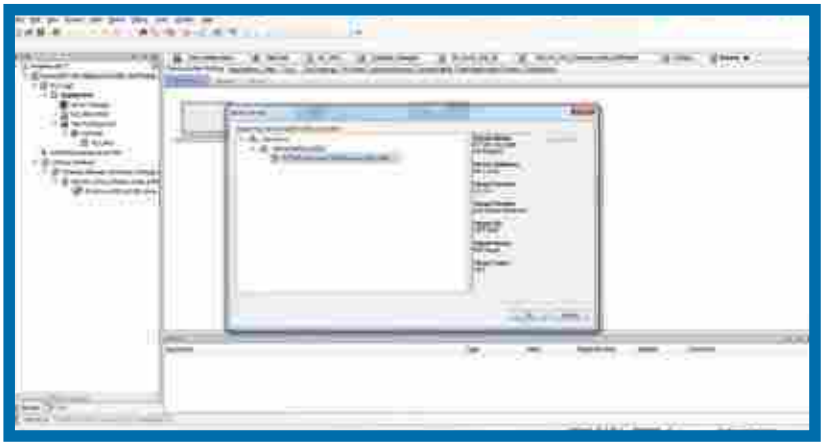
Si tratta attualmente del più conosciuto e diffuso ambiente di sviluppo non proprietario.
Grazie a CODESYS la serie di controllori della linea FCT diviene un controllore aperto a tutti gli utenti di CODESYS che potranno quindi usufruire delle librerie, delle tecniche di programmazione, degli esempi e in generale dei servizi che il mondo CODESYS mette a disposizione. **Anche nel caso di CODESYS CMZ mette a disposizione librerie di motion e applicative**.

- **Debugging**



- **Softmotion**

- **Network**



LBD & EASY DRIVE

CMZ offers a complete set of servo drives suitable for all requirements of performance and price.
We offer two types of brushless drive: **LBD** and **EASY** series, both standalone drives for cabinet for synchronous AC motors.
LBD Drive is a stand alone brushless drive to install on cabinet for synchronous AC motors extremely compact, reliable trustworthy and great high-performance. The wide range with 230 Vac single phase solutions and 400 three-phase solutions in combination with the brushless motors of the MMB series makes it suitable for all applications on machines with high kinematic performance. The CANopen and EtherCAT interface makes it particularly suitable for use with FCT controllers. Also available interfacing analog inputs and stepper motor simulation. The system is equipped with the standard safety functions STO at SIL2 level.
EASY, the drive easy-to-use, which is also extremely compact and performing is available in the version to 110-230 Vac. Due to its cost and its enhanced features, it is extremely useful and practical for applications where price is a factor.

CMZ offre una serie completa di servo azionamenti adatta a tutte le esigenze di performance e di prezzo. Proponiamo due tipologie di azionamento brushless: serie **LBD** e **EASY**, entrambi azionamenti stand alone da quadro per motori AC sincroni.
L'azionamento **LBD**, estremamente compatto e affidabile, è proposto all'interno di un'ampia gamma di taglie con soluzioni sia a 230 Vac monofase che 400 Vac trifase in abbinamento ai motori della serie MMB ed è adatto a tutte le applicazione su macchine con alte prestazioni cinematiche. L'interfaccia CANopen e EtherCAT lo rende particolarmente adatto all'uso con i controllori FCT. Disponibile anche l'interfacciamento con ingresso analogico e simulazione stepper. Il sistema è dotato della funzione standard di sicurezza STO a livello SIL2.
EASY, l' azionamento easy-to-use, anch'esso estremamente compatto e performante viene proposto nella versione a 110-230 Vac.
Grazie alla sua economicità e alle sue funzioni ottimizzate, è estremamente utile e pratico per applicazioni in cui il prezzo è un fattore determinante.

LBD 23

Brushless motors & drives stand alone

• BRUSHLESS DRIVE 230 VAC

with **CANopen & EtherCAT** interface dedicated to the FCT series motion controller

Power supply
230Vac single phase
Logic supply
24Vdc
Rated current
230Vac: 5,5A - 8,5A
Peak current
230Vac: 11A - 17A
Interface
CANopen DS402 (2 RJ45 connectors), EtherCAT
± 10V, Pulse/direction
Feedback
Resolver, TTL incremental encoder, TTL incremental encoder+HES
SinCos, SinCos+HES, HIPERFACE absolute encoder single and multiturn, digital HIPERFACE DSL absolute encoder, digital EnDat 2.2 absolute encoder, linear absolute encoder
Encoder emulation
Incremental TTL (differential output)
2 Analog inputs
12bits +/-10V
1 Analog output
8 bits +/- 2,5V
5 Digital inputs
24Vdc optoisolated: general purpose or configurable as Capture, Index, Limit switch +/-, Enable, STEP/DIR
3 Digital outputs
Parametrable 24Vdc max 300mA with dedicated terminal connection for motor brake control (external power device required)
Braking resistor
30W included. External connections available
STO function
2 channels, SIL2
Motor thermal sensor
PTC/NTC
EMC filter
Choke integrated
Certifications: CE

• OVERALL DIMENSIONS

Type	LBD23	
Peak current	11	17
Standard dimensions (mm)	H148xW70xD143	
Weight (Kg)	1,5	

• BRUSHLESS DRIVE 400 VAC

with **CANopen & EtherCAT** interface dedicated to the FCT series motion controller

Power supply
400Vac three phase
Logic supply
24Vdc
Rated current
400Vac: 4 - 10 - 22,5* - 35* - 75* A
Peak current
400Vac: 8 - 20 - 45* - 100* - 200* A
Interface
CANopen DS402 (2 RJ45 connectors), EtherCAT
± 10V, Pulse/direction
Feedback
Resolver, TTL incremental encoder, TTL incremental encoder+HES, SinCos, SinCos+HES, HIPERFACE absolute encoder single and multi-turn, digital HIPERFACE DSL absolute encoder, digital EnDat 2.2 absolute encoder, linear absolute encoder
Encoder emulation
Incremental TTL (differential output)
2 Analog inputs
12bits +/-10V
1 Analog output
8 bits +/- 2,5V
5 Digital inputs
24Vdc optoisolated: general purpose or configurable as Capture, Index, Limit switch +/-, Enable, STEP/DIR
3 Digital outputs
Parametrable 24Vdc max 300mA with dedicated terminal connection for motor brake control (external power device required)
Braking resistor
35W included. External connections available
STO function
2 channels, SIL2
Motor thermal sensor
PTC/NTC
EMC filter
Choke integrated
Certifications: CE

* external power supply unit (code **MMGDPS - 400** / 16.000)
(code **MMGDPS - 400** / 32.000)
(code **MMGDPS - 400** / 64.000)

• OVERALL DIMENSIONS

Type	LBD40				
Peak current	008	020	045	100	200
Standard dimensions (mm)	H220xW70xD182			220x80x206	H295xW166,60xD215X
Weight (Kg)	2,2		2,4	3,3	8,5

EASY DRIVE 23

Brushless motors & drives stand alone

• BRUSHLESS DRIVE 230 VAC

with CANopen interface dedicated to the FCT series motion controller

Power supply
110-230 Vac single phase
Logic supply
24Vdc
Rated current
230Vac: 5 A
Peak current
230Vac: 17 A
Interface
CANopen DS402, +/- 10V
Feedback
Resolver, TTL incremental encoder, TTL incremental encoder + HES, Hall effect sensors (HES) only, sensorless
Encoder emulation
Incremental TTL (differential output)
1 Analog inputs
12bits +/-10V
4 Digital inputs
24Vdc optoisolated: general purpose or configurable as Capture, Index, Limit switch +/-
2 Digital outputs
Parametrable 24Vdc max 500mA
Braking resistor
External connections
STO function
1 channels, SIL 1
Motor thermal sensor
PTC/NTC
EMC filter
Choke integrated
Certifications: CE

• OVERALL DIMENSIONS

Type	EASY23
Peak current	17
Standard dimensions (mm)	H182xW54xD125
Weight (Kg)	1,5

• ORDERING CODE

230VAC - LBD23cc.xxx.abc

Type	Power supply	Peak current (cc)	Interface (xxx)	Option (ab)	Option (c)
LBD	23(230V)	11 (11 A)	CAN or ETC	reserved	customiz.
LBD	23(230V)	17 (17 A)	CAN or ETC	reserved	customiz.

• ORDERING CODE

400VAC - LBD40ccc/xxx.abc

Type	Power supply	Peak current (ccc)	Interface (xxx)	Option (ab)	Option (c)
LBD	40(400V)	008 (8 A)	CAN or ETC	a=0 standard a=1 Push through ver b=reserved	customiz.
LBD	40(400V)	020 (20 A)	CAN or ETC	a=0 standard a=1 Push through ver b=reserved	customiz.
LBD	40(400V)	045 (45 A)*	CAN or ETC	a=0 standard a=1 Push through ver b=reserved	customiz.
LBD	40(400V)	100 (100 A)*	CAN or ETC	a=0 standard a=1 Push through ver b=reserved	customiz.
LBD	40(400V)	200 (200 A)*	CAN or ETC	a=0 standard a=1 Push through ver b=reserved	customiz.

*external power supply unit required

• ORDERING CODE

230VAC - EASY2317/CAN.abc

Type	Power supply	Peak current (cc)	Interface (xxx)	Option (a)	Option (b)	Option (c)
EASY	23(230V)	17 (17 A)	CAN	2 external kit connectors POWER+MOTOR e CAN Connector	0	0

• ORDERING CODE

POWER SUPPLY

ORDERING CODE: MMGDPS-400/pp.000

MMGDPS-400/16.000	Power supply 16 kW with kit external connector
MMGDPS-400/32.000	Power supply 32 kW with kit external connector
MMGDPS-400/64.000	Power supply 64 kW with kit external connector

GDS

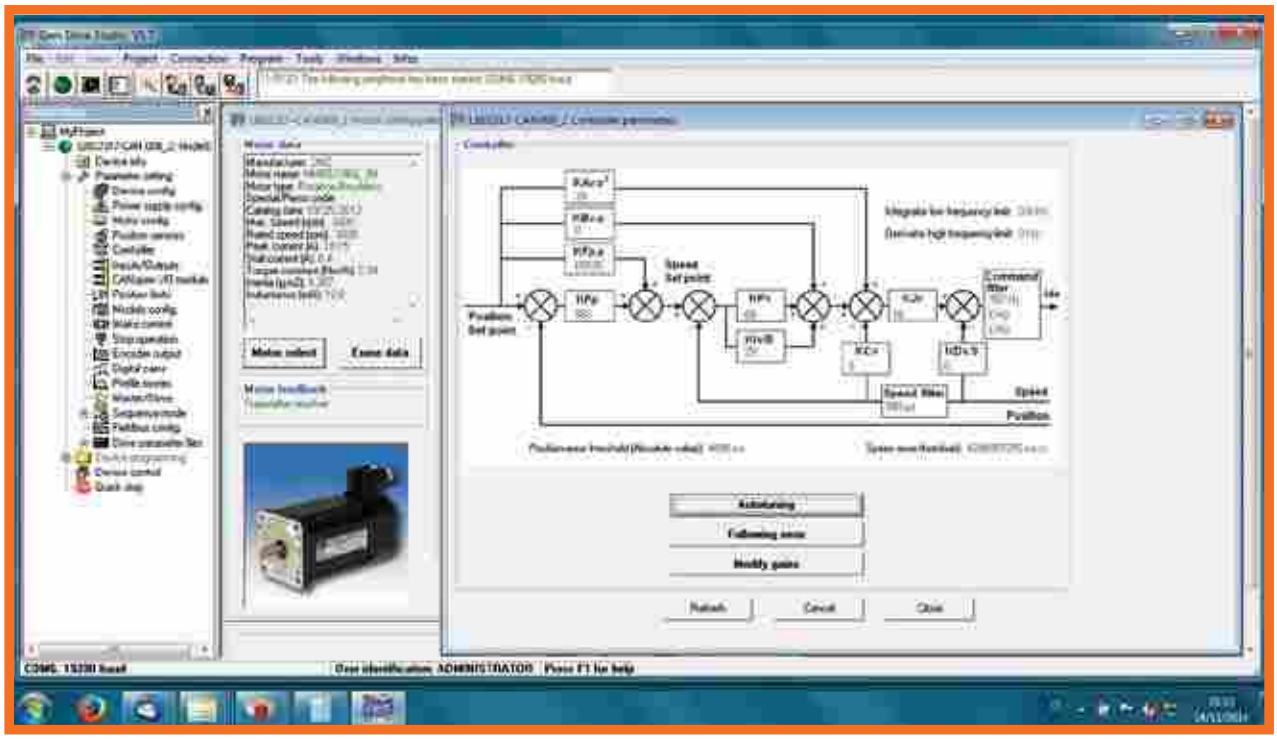
The Environment

Brushless
motors & drives
stand alone

• GEM DRIVE STUDIO FOR LBD AND EASY DRIVE

Gem Drive Studio (GDS) is the development environment for configuration, parameterization and tuning of the LBD and EASY drives using RS232 or a centralized connection via fieldbus. The software can be configured into different levels depending on the experience of the user and provides many tools for the configuration, tuning and monitoring of the drive.

Gem Drive Studio (GDS) è l'ambiente di sviluppo per la configurazione, parametrizzazione e taratura degli azionamenti LBD e EASY utilizzando la seriale RS232 o un collegamento centralizzato tramite bus di campo.
Il software può essere configurato in diversi livelli a seconda dell'esperienza dell'utilizzatore e mette a disposizione molti strumenti per la configurazione, la taratura e il monitor dell'azionamento.



• CONTROL FEATURES

PWM: 8KHz
Digital current loop: 62,5μs
Digital speed loop: 500μs
Position loop: 500μs
Auto-phasing: motor phase and resolver
Auto-tuning: 3 bands, 2 filters
Motor cogging torque compensation

Range: from 1,2 up to 120Nm - Voltage: 230/400 Vac - Protection: IP65 - IP67 on request

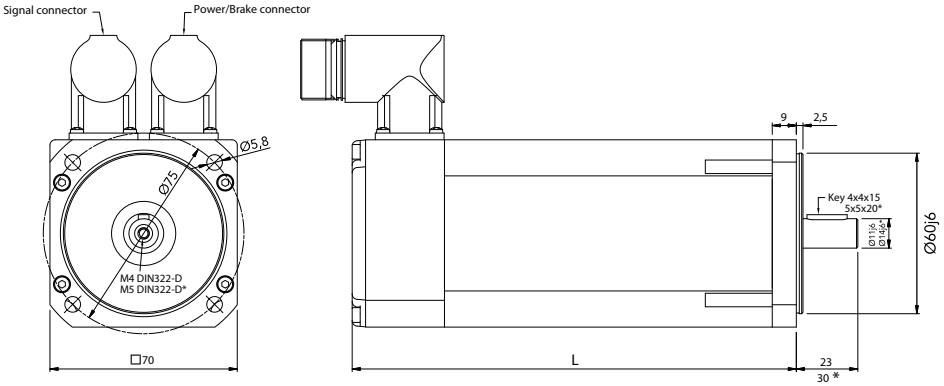
TECHNICAL FEATURES

Stall torque (Nm)	Type	Peak torque Tp (Nm)	Stall current (Arms)	Type	Peak torque Tp (Nm)	Stall current (Arms)	Type	Peak torque Tp (Nm)	Stall current (Arms)	Type	Peak torque Tp (Nm)	Stall current (Arms)
Nm	**400V, 3000 rpm, kt 1,45** (Nm/A)			**400V, 6000 rpm, kt 0,73** (Nm/A)			**230V, 3000 rpm, kt 0,85** (Nm/A)			**230V, 6000 rpm, kt 0,42** (Nm/A)		
1,2	MMB36.E2Q_3H	4,2	0,8	MMB36.E2Q_6H	4,2	1,6	MMB36.E2Q_3M	4,2	1,4	MMB36.E2Q_6M	4,2	2,9
2,4	MMB36.F4Q_3H	8,5	1,7	MMB36.F4Q_6H	8,5	3,3	MMB36.F4Q_3M	8,5	2,8	MMB36.F4Q_6M	8,5	5,8
Nm	**400V, 3000 rpm, kt 1,63 (Nm/A)**			**400V, 6000 rpm, kt 0,81** (Nm/A)			**230V, 3000 rpm, kt 0,94 (Nm/A)**			**230V, 6000 rpm, kt 0,47**(Nm/A)		
1,35	MMB56.E3Q_3H	5	0,8	MMB56.E3Q_6H	5	1,2	MMB56.E3Q_3M	5	1,40	MMB56.E3Q_6M	5	2,1
2,6	MMB56.F6Q_3H	10	1,6	MMB56.F6Q_6H	10	2,1	MMB56.F6Q_3M	10	2,7	MMB56.F6Q_6M	10	3,6
3,6	MMB56.G5Q_3H	15	2,2	MMB56.G5Q_6H	15	2,5	MMB56.G5Q_3M	15	3,3	MMB56.G5Q_6M	15	4,3
4,5	MMB56.H5Q_3H	20	2,8	MMB56.H5Q_6H	20	2,8	MMB56.H5Q_3M	18	4,2	MMB56.H5Q_6M	18	4,9
Nm	**400V, 3000 rpm, kt 1,63** (Nm/A)			**400V, 4500 rpm, kt 1,09** (Nm/A)			**230V, 3000 rpm, kt 0,94** (Nm/A)			**230V, 4500 rpm, kt 0,63** (Nm/A)		
4	MMB63.04Q_3H	12	2,5	MMB63.04Q_DH	12	3,7	MMB63.04Q_3M	12	4,3	MMB63.04Q_DM	12	6,4
6	MMB63.06Q_3H	18	3,7	MMB63.06Q_DH	18	5,5	MMB63.06Q_3M	18	6,4	MMB63.06Q_DM	18	9,6
8	MMB63.08Q_3H	24	4,9	MMB63.08Q_DH	24	7,4	MMB63.08Q_3M	24	8,5	MMB63.08Q_DM	24	12,8
10	MMB63.10Q_3H	30	6,1	MMB63.10Q_DH	30	9,2	MMB63.10Q_3M	30	10,6	MMB63.10Q_DM	30	15,9
Nm	**400V, 3000 rpm, kt 1,63** (Nm/A)			**400V, 4500 rpm, kt 1,09** (Nm/A)								
4,5	MMB71.04Q_3H	13,8	2,8	MMB71.04Q_DH	13,8	4,1						
9	MMB71.08Q_3H	27,6	5,5	MMB71.08Q_DH	27,6	8,3						
12,5	MMB71.12Q_3H	41,4	7,7	MMB71.12Q_DH	41,4	11,5						
16	MMB71.16Q_3H	55,2	9,8	MMB71.16Q_DH	55,2	14,7						
20	MMB71.20Q_3H	69,0	12,3	MMB71.20Q_DH	69,0	18,4						
26	MMB71.26Q_3H	96,6	16,0	MMB71.26Q_3H	96,6	23,9						
29	MMB71.29Q_3H	110,4	17,8	MMB71.29Q_3H	110,4	26,7						
Nm	**400V, 2000 rpm, kt 2,45** (Nm/A)			**400V, 3000 rpm, kt 1,63** (Nm/A)								
20	MMB10.20J_2H	75	8,2	MMB10.20J_3H	75	12,3						
28	MMB10.28J_2H	108	11,4	MMB10.28J_3H	108	17,2						
36	MMB10.36J_2H	144	14,7	MMB10.36J_3H	144	22,1						
42	MMB10.42J_2H	180	17,2	MMB10.42J_3H	180	25,8						
56	MMB10.56J_2H	230	22,9	MMB10.56J_3H	230	34,4						
68	MMB10.68J_2H	322	27,8	MMB10.68J_3H	322	41,7						
80	MMB10.80J_2H	396	32,7	MMB10.80J_3H	396	49,1						
Nm	**400V, 1500 rpm, kt 3,26** (Nm/A)			**400V, 2000 rpm, kt 2,44** (Nm/A)								
42	MMB13.42I_AH	120	12,9	MMB13.42I_2H	120	17,2						
58	MMB13.58I_AH	162	17,8	MMB13.58I_2H	162	23,7						
73	MMB13.73I_AH	204	22,4	MMB13.73I_2H	204	29,9						
81	MMB13.81I_AH	231	24,8	MMB13.81I_2H	231	33,1						
98	MMB13.98I_AH	280	30,1	MMB13.98I_2H	280	40,1						
120	MMB13.C2I_AH	345	36,8	MMB13.C2I_2H	345	49,1						

MMB 36Q

Brushless motors & drives stand alone

Number of poles:
Sinusoidal 8
Voltage:
H(400V) e M(230V)
Available torque:
from 1,2Nm to 2,4Nm



*Only for type B36.F4Q

• ELECTRICAL DATA

Type	Stall torque (Δt=105°C) M0 (Nm)	Rated speed n (rpm)	Rated apower Pn (kW)	Rated torque Mn (Nm)	Peak torque Mpk (Nm)	Moment of inertia Jm (10^{-4}kgm²)	Peak torque acceleration apk (rad/sec²)	Thermal time costant T_{th} (min)	Thermal protection threshold (°C)	Voltage constant ke (Vs)	Torque constant Kt (Nm/A)	BEMF at rated speed En (V)	Phase to phase resistance R (Ω)	Phase to phase inductance L (mH)	Stall current I_0 (Arms)	Nominal current I_n (Arms)
Voltage H (400 Volt) - 3000 Min-1- connection Y																
MMB36.E2Q_3H	1,2	3000	0,346	1,1	4,2	0,44	95455	32	140	0,84	1,45	264	36,2	69,6	0,8	0,8
MMB36.F4Q_3H	2,4	3000	0,691	2,2	8,5	1,05	103659	36	140	0,84	1,45	264	15	36	1,7	1,5
Voltage H (400 Volt) - 6000 Min-1- connection Y																
MMB36.E2Q_6H	1,2	6000	0,628	1,0	4,2	0,77	95455	32	140	0,42	0,73	264	9,04	17,4	1,6	1,4
MMB36.F4Q_6H	2,4	6000	1,225	2,0	8,5	1,05	103659	36	140	0,42	0,73	264	3,75	9,0	3,3	2,7
Voltage M (230 Volt) - 3000 Min-1- connection Y																
MMB36.E2Q_3M	1,2	3000	0,346	1,1	4,2	0,44	95455	32	140	0,49	0,85	152	12,1	23,2	1,4	0,8
MMB36.F4Q_3M	2,4	3000	0,691	2,2	8,5	0,82	103659	36	140	0,49	0,85	152	5,0	12,0	2,8	1,5
Voltage M (230 Volt) - 6000 Min-1- connection Y																
MMB36.E2Q_6M	1,2	6000	0,628	1,0	4,2	0,44	95455	32	140	0,24	0,42	152	3,00	5,8	2,9	1,4
MMB36.F4Q_6M	2,4	6000	1,225	2,2	8,5	0,82	103659	36	140	0,24	0,42	152	51,25	3,0	5,8	2,7

• OVERALL DIMENSIONS

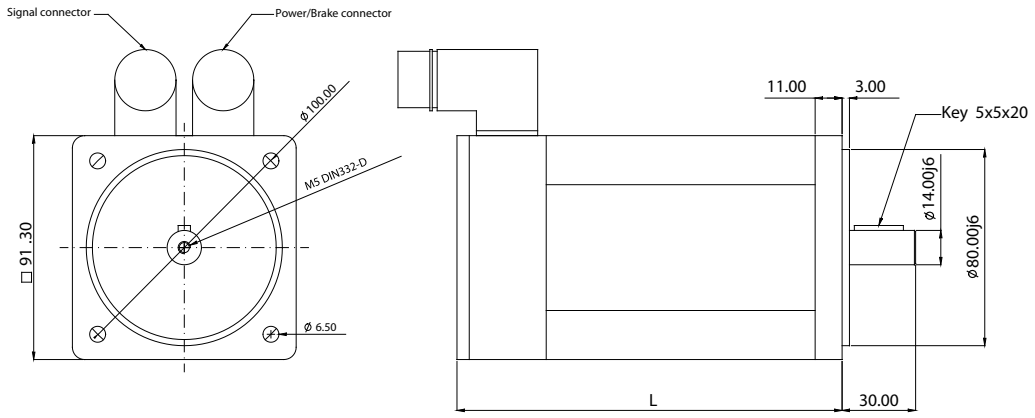
Type	Stall Torque (Nm)	Lenght with RESOLVER		Lenght with ENCODER		Motor weight (Kg)	Motor weight with brake (Kg)
		Without brake	With brake	Without brake	With brake		
MMB36.E2Q	1,2	127	162	138	173	2,2	2,8
MMB36.F4Q	2,4	167	198	180	211	3,6	4,2

Power connector size: SIZE 1 (M23), see page 29

MMB 56Q

Brushless motors & drives stand alone

Number of poles:
Sinusoidal 8
Voltage:
H(400V) e M(230V)
Available torque:
from 1,35Nm to 4,5Nm



• ELECTRICAL DATA

Type	Stall torque (Δt=105°C)	Rated speed	Rated power	Rated torque	Peak torque	Moment of inertia	Peak torque accelleration	Thermal time costant	Thermal protection threshold	Voltage constant	Torque constant	BEMF at rated speed	Phase to phase resistance	Phase to phase inductance	Stall current	Nominal current
	M0 (Nm)	n (rpm)	Pn (kW	Mn (Nm)	Mpk (Nm)	Jm (10^{-4}kgm^2)	apk (rad/sec^2)	T_{th} (min)	(°C)	ke (Vs)	Kt (Nm/A)	En (V)	R (Ω)	L (mH)	I_0 (Arms)	I_n (Arms)
Voltage H (400 Volt) - 3000 Min-1- connection Y																
MMB56.E3Q_3H	1,35	3000	0,4	1,3	5	0,47	106383	31	140	0,94	1,63	296	37,4	137	0,8	0,8
MMB56.F6Q_3H	2,60	3000	0,8	2,5	10	0,88	113636	34	140	0,94	1,63	296	18,9	73,7	1,6	1,5
MMB56.G5Q_3H	3,60	3000	1,0	3,1	14	1,09	128440	36	140	0,94	1,63	296	10,7	54,7	2,1	1,9
MMB56.H5Q_3H	4,50	3000	1,2	3,9	18	1,40	128571	39	140	0,94	1,63	296	8,0	43,7	2,8	2,4
Voltage H (400 Volt) - 60000 Min-1- connection Y																
MMB56.E3Q_6H	1,35	6000	0,6	1,0	5	0,47	106383	31	140	0,47	0,81	296	9,4	33,8	1,7	1,2
MMB56.F6Q_6H	2,60	6000	1,1	1,7	10	0,88	113636	34	140	0,47	0,81	296	4,0	18,2	3,2	2,1
MMB56.G5Q_6H	3,60	6000	1,3	2,0	15	1,09	128440	36	140	0,47	0,81	296	2,7	13,5	4,3	2,5
MMB56.H5Q_6H	4,50	6000	1,4	2,3	18	1,40	128571	39	140	0,47	0,81	296	2,0	10,8	5,6	2,8
Voltage M (230 Volt) - 3000 Min-1- connection Y																
MMB56.E3Q_3M	1,35	3000	0,4	1,3	5	0,47	106383	31	140	0,54	0,94	170	12,4	45	1,4	1,4
MMB56.F6Q_3M	2,60	3000	0,8	2,5	10	0,88	113636	34	140	0,54	0,94	170	5,2	24,2	2,8	2,7
MMB56.G5Q_3M	3,60	3000	1,0	3,1	14	1,09	128440	36	140	0,54	0,94	170	3,2	18,0	3,7	3,3
MMB56.H5Q_3M	4,50	3000	1,2	3,9	18	1,40	128571	39	140	0,54	0,94	170	2,4	14,4	4,8	4,2
Voltage M (230 Volt) - 6000 Min-1- connection Y																
MMB56.E3Q_6M	1,35	6000	0,6	1,0	5	0,47	106383	31	140	0,27	0,47	170	3,1	11,2	2,9	2,1
MMB56.F6Q_6M	2,60	6000	1,1	1,7	10	0,88	113636	34	140	0,27	0,47	170	1,1	6,1	5,5	3,6
MMB56.G5Q_6M	3,60	6000	1,3	2,0	14	1,09	128440	36	140	0,27	0,47	170	0,9	4,5	7,5	4,3
MMB56.H5Q_6M	4,50	6000	1,4	2,3	18	1,40	128571	39	140	0,27	0,47	170	0,6	3,6	9,6	4,9

• OVERALL DIMENSIONS

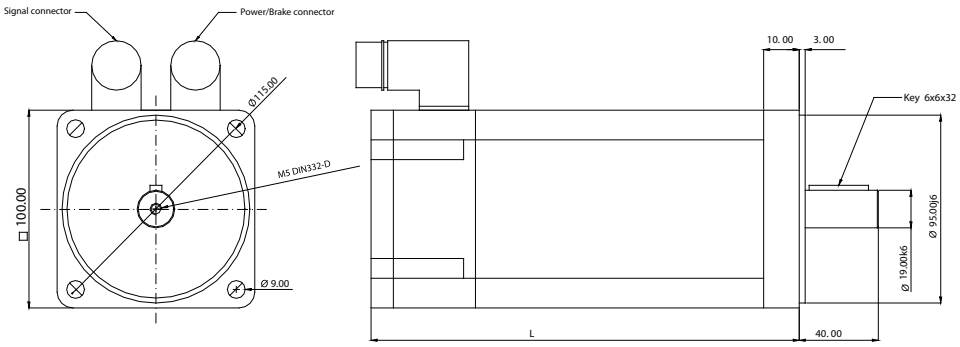
Type	Stall Torque (Nm)	Lenght with RESOLVER		Lenght with ENCODER		Motor weight (Kg)	Motor weight with brake (Kg)
		Without brake	With brake	Without brake	With brake		
MMB56.E3Q	1,35	122	157	137	172	3,50	4,10
MMB56.F6Q	2,60	145	180	159	194	4,40	5,00
MMB56.G5Q	3,60	160	195	174	209	5,00	5,6
MMB56.H5Q	4,50	180	215	194	229	5,80	6,4

Power connector size: SIZE 1 (M23), see page 29

MMB 63Q

Brushless motors & drives stand alone

Number of poles:
Sinusoidal 8
Voltage:
H(400V) e M(230V)
Available torque:
from 4Nm to 10Nm



• ELECTRICAL DATA

Type	Stall torque (Δt=105°C) M0 (Nm)	Rated speed n (rpm)	Rated power Pn (kW)	Rated torque Mn (Nm)	Peak torque Mpk (Nm)	Moment of inertia Jm (10^{-4}kgm^2)	Peak torque acceleration apk (rad/sec^2)	Thermal time costant T_{th} (min)	Thermal protection threshold (°C)	Voltage constant ke (Vs)	Torque constant Kt (Nm/A)	BEMF at rated speed En (V)	Phase to phase resistance R (Ω)	Phase to phase inductance L (mH)	Stall current I_0 (Arms)	Nominal current I_n (Arms)
Voltage H (400 Volt) - 3000 Min-1- connection Y																
MMB63.04Q_3H	4,0	3000	1,1	3,50	12	1,87	64171	25	140	0,94	1,63	296	5,40	36,5	2,5	2,1
MMB63.06Q_3H	6,0	3000	1,6	5,25	18	2,67	67416	30	140	0,94	1,63	296	3,50	24,0	3,7	3,2
MMB63.08Q_3H	8,0	3000	2,4	7,50	24	3,47	69164	30	140	0,94	1,63	296	2,50	21,8	4,9	4,6
MMB63.10Q_3H	10,0	3000	2,7	8,75	30	4,27	70258	35	140	0,94	1,63	296	1,90	17,4	6,1	5,4
Voltage H (400 Volt) - 4500 Min-1- connection Y																
MMB63.04Q_DH	4,0	4500	1,5	3,10	12	1,87	64171	25	140	0,63	1,09	296	2,40	16,5	3,7	2,9
MMB63.06Q_DH	6,0	4500	2,2	4,65	18	2,67	67416	30	140	0,63	1,09	296	1,50	10,8	5,5	4,3
MMB63.08Q_DH	8,0	4500	2,9	6,20	24	3,47	69164	30	140	0,63	1,09	296	1,10	9,70	7,4	5,7
MMB63.10Q_DH	10,0	4500	3,6	7,70	30	4,27	70258	35	140	0,63	1,09	296	0,90	7,80	9,2	7,1
Voltage M (230 Volt) - 3000 Min-1- connection Y																
MMB63.04Q_3M	4,0	3000	1,1	3,5	12	1,87	64171	25	140	0,54	0,94	171	1,78	12,2	4,3	3,7
MMB63.06Q_3M	6,0	3000	1,6	5,25	18	2,67	67416	30	140	0,54	0,94	171	1,16	8,0	6,4	5,6
MMB63.08Q_3M	8,0	3000	2,4	7,50	24	3,47	69164	30	140	0,54	0,94	171	0,83	7,3	8,5	8,0
MMB63.10Q_3M	10,0	3000	2,7	8,75	30	4,27	70258	35	140	0,54	0,94	171	0,63	5,8	10,6	9,3
Voltage M (230 Volt) - 4500 Min-1- connection Y																
MMB63.04Q_DM	4,0	4500	1,5	3,10	12	1,87	64171	25	140	0,36	0,63	171	0,80	5,4	6,4	4,9
MMB63.06Q_DM	6,0	4500	2,2	4,65	18	2,67	67416	30	140	0,36	0,63	171	0,50	3,6	9,6	7,4
MMB63.08Q_DM	8,0	4500	2,9	6,20	24	3,47	69164	30	140	0,36	0,63	171	0,37	3,2	12,8	9,9
MMB63.10Q_DM	10,0	4500	3,6	7,70	30	4,27	70258	35	140	0,36	0,63	171	0,30	2,6	15,9	12,3

• OVERALL DIMENSIONS

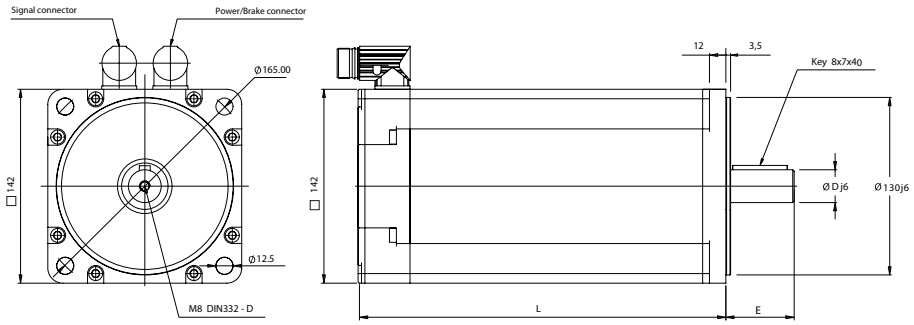
Type	Stall Torque (Nm)	Lenght with RESOLVER		Lenght with ENCODER		Motor weight (Kg)	Motor weight with brake (Kg)
		Without brake	With brake	Without brake	With brake		
MMB63.04Q	4,0	150	182	161	193	4,70	5,60
MMB63.06Q	6,0	170	202	181	213	5,30	6,10
MMB63.08Q	8,0	194	226	205	237	6,20	7,10
MMB63.10Q	10,0	214	246	225	257	7,20	8,10

Power connector size: SIZE 1 (M23), see page 29

MMB 71Q

Brushless motors & drives stand alone

Number of poles:
Sinusoidal 8
Voltage:
H(400V)
Available torque:
from 4,5 to 29 Nm



Type	D	E
MMB71 4,5Nm-26Nm	24	50
MMB71.29Q	28	58

• ELECTRICAL DATA

Type	Stall torque (Δt=105°C) M0 (Nm)	Rated speed n (rpm)	Rated power Pn (kW)	Rated torque Mn (Nm)	Peak torque Mpk (Nm)	Moment of inertia Jm (10^{-4}kgm^2)	Peak torque acceleration apk (rad/sec^2)	Thermal time costant T_{th} (min)	Thermal protection threshold (°C)	Voltage constant ke (Vs)	Torque constant Kt (Nm/A)	BEMF at rated speed En (V)	Phase to phase resistance R (Ω)	Phase to phase inductance L (mH)	Stall current I_0 (Arms)	Nominal current I_n (Arms)
Voltage H (400 Volt) - 3000 Min-1- connection Y																
MMB71.04Q_3H	4,5	3000	1,3	4,0	13,8	3,6	38122	33	140	0,94	1,63	296	5,13	40,3	2,8	2,5
MMB71.08Q_3H	9,0	3000	2,4	7,7	27,6	6,0	45695	37	140	0,94	1,63	296	2,16	21,5	5,5	4,7
MMB71.12Q_3H	12,5	3000	3,6	11,6	41,4	8,20	50488	40	140	0,94	1,63	296	1,13	12,5	7,7	7,1
MMB71.16Q_3H	16,0	3000	4,4	13,9	55,2	10,7	51589	43	140	0,94	1,63	296	0,75	8,20	9,8	8,5
MMB71.20Q_3H	20,0	3000	5,5	17,5	69,0	13,1	52672	46	140	0,94	1,63	296	0,56	6,30	12,3	10,7
MMB71.26Q_3H	26,0	3000	5,9	18,9	96,6	18,4	52500	49	140	0,94	1,63	296	0,41	5,00	16,0	11,6
MMB71.29Q_3H	29,0	3000	6,4	20,3	110,4	20,6	53592	51	140	0,94	1,63	296	0,34	4,30	17,8	12,5
Voltage H (400 Volt) - 4500 Min-1- connection Y																
MMB71.04Q_DH	4,5	4500	1,8	3,9	13,8	3,6	38122	33	140	0,63	1,09	296	2,22	19,3	4,1	3,6
MMB71.08Q_DH	9,0	4500	3,4	7,3	27,6	6,0	45695	37	140	0,63	1,09	296	0,79	8,7	8,3	6,7
MMB71.12Q_DH	12,5	4500	4,5	9,5	41,4	8,2	50488	40	140	0,63	1,09	296	0,51	5,0	11,5	8,7
MMB71.16Q_DH	16,0	4500	6,0	12,7	55,2	10,7	51589	43	140	0,63	1,09	296	0,34	4,1	14,7	11,7
MMB71.20Q_DH	20,0	4500	6,9	14,6	69,0	13,1	52672	46	140	0,63	1,09	296	0,26	3,2	18,4	13,4
MMB71.26Q_DH	26,0	4500	6,9	14,7	96,6	18,4	52500	49	140	0,63	1,09	296	0,19	2,4	23,9	13,5
MMB71.29Q_DH	29,0	4500	7,2	15,3	110,4	20,6	53592	51	140	0,63	1,09	296	0,16	2,0	26,7	14,1

• OVERALL DIMENSIONS

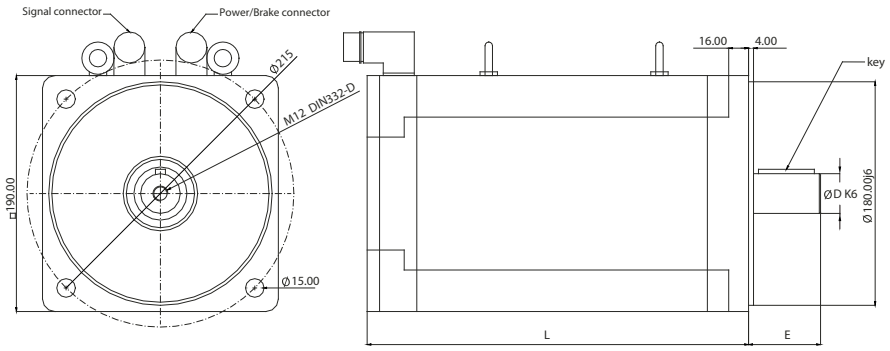
Type	Stall Torque (Nm)	Lenght with RESOLVER (**)		Lenght with ENCODER		Motor weight (Kg)	Motor weight with brake (Kg)
		Without brake	With brake	Without brake	With brake		
MMB71.04Q	4,5	148	183	159	194	7,50	9,50
MMB71.08Q	9,0	173	208	184	219	9,50	11,50
MMB71.12Q	12,5	198	228	209	239	11,50	13,50
MMB71.16Q	16,0	223	253	234	264	13,50	15,50
MMB71.20Q	20,0	248	273	259	284	15,50	17,50
MMB71.26Q	26,0	298	318	309	329	19,50	21,50
MMB71.29Q	29,0	338	373	349	384	22,50	24,50

Power connector size: SIZE 1 (M23), see page 29

MMB 100J

Brushless motors & drives stand alone

Number of poles:
Sinusoidal 10
Voltage:
H(400V)
Available torque:
from 20Nm to 80Nm



Type	D	E	Key
MM10.20J-MM10.42J	32k6	58mm	10x8x45
MM10.56J-MM10.80J	38k6	80mm	10x8x70

• ELECTRICAL DATA

Type	Stall torque (Δt=105°C) M0 (Nm)	Rated speed n (rpm)	Rated power Pn (kW)	Rated torque Mn (Nm)	Peak torque Mpk (Nm)	Moment of inertia Jm (10^{-4}kgm²)	Peak torque acceleration apk (rad/sec²)	Thermal time costant T_{th} (min)	Thermal protection threshold (°C)	Voltage constant ke (Vs)	Torque constant Kt (Nm/A)	BEMF at rated speed En (V)	Phase to phase resistance R (Ω)	Phase to phase inductance L (mH)	Stall current I_0 (Arms)	Nominal current I_n (Arms)	Power connector size
Voltage H (400 Volt) - 2000 Min-1- connection Y																	
MMB10.20J_2H	20	2000	3,8	18,3	75	33	22727	32	140	1,41	2,45	296	1,78	18,7	8,20	7,50	1 (M23)
MMB10.28J_2H	28	2000	5,2	24,7	108	46	23478	37	140	1,41	2,45	296	0,90	14,2	11,4	10,1	1 (M23)
MMB10.36J_2H	36	2000	6,3	30,1	144	60	24000	41	140	1,41	2,45	296	0,63	11,0	14,7	12,3	1 (M23)
MMB10.42J_2H	42	2000	7,6	36,1	180	74	24324	46	140	1,41	2,45	296	0,50	8,80	17,2	14,8	1 (M23)
MMB10.56J_2H	56	2000	9,3	44,5	230	102	22549	56	140	1,41	2,45	296	0,31	5,60	22,9	18,2	1 (M23)
MMB10.68J_2H	68	2000	10,7	50,9	322	130	24769	65	140	1,41	2,45	296	0,23	4,70	27,8	20,8	1,5 (M40)
MMB10.80J_2H	80	2000	12,1	57,8	396	158	25063	74	140	1,41	2,45	296	0,18	4,10	32,7	23,6	1,5 (M40)
Voltage H (400 Volt) - 3000 Min-1- connection Y																	
MMB10.20J_3H	20	3000	5,1	16,1	75	33	22727	32	140	0,94	1,63	296	0,79	8,30	12,3	9,9	1 (M23)
MMB10.28J_3H	28	3000	6,9	22,0	108	46	23478	37	140	0,94	1,63	296	0,40	6,30	17,2	13,5	1 (M23)
MMB10.36J_3H	36	3000	8,8	28,0	144	60	24000	41	140	0,94	1,63	296	0,28	4,90	22,1	17,2	1 (M23)
MMB10.42J_3H	42	3000	10,2	32,5	180	74	24324	46	140	0,94	1,63	296	0,22	3,90	25,8	19,9	1 (M23)
MMB10.56J_3H	56	3000	11,6	37,0	230	102	22549	56	140	0,94	1,63	296	0,15	2,70	34,4	22,7	1,5 (M40)
MMB10.68J_3H	68	3000	12,8	40,9	322	130	24769	65	140	0,94	1,63	296	0,10	2,10	41,7	25,1	1,5 (M40)
MMB10.80J_3H	80	3000	13,8	44,0	396	158	25063	74	140	0,94	1,63	296	0,08	1,80	49,1	27,0	1,5 (M40)

• OVERALL DIMENSIONS

Type	Stall Torque (Nm)	Lenght with RESOLVER*		Lenght with ENCODER*		Motor weight (Kg)	Motor weight with brake (Kg)
		Without brake	With brake	Without brake	With brake		
MMB10.20J	20	195	225	223	253	17	22
MMB10.28J	28	218	248	246	276	21	26
MMB10.36J	36	240*	270*	268*	298*	25	30
MMB10.42J	42	263*	293*	291*	321*	30	35
MMB10.56J	56	308*	338*	336*	366*	38	43
MMB10.68J	68	369	399	369	399	47	52
MMB10.80J	80	414	444	414	444	55	60

*Motors with sizes 1,5 connectors have an addictional lenght of 16 mm

MMB 132I

Brushless motors & drives stand alone

Number of poles:

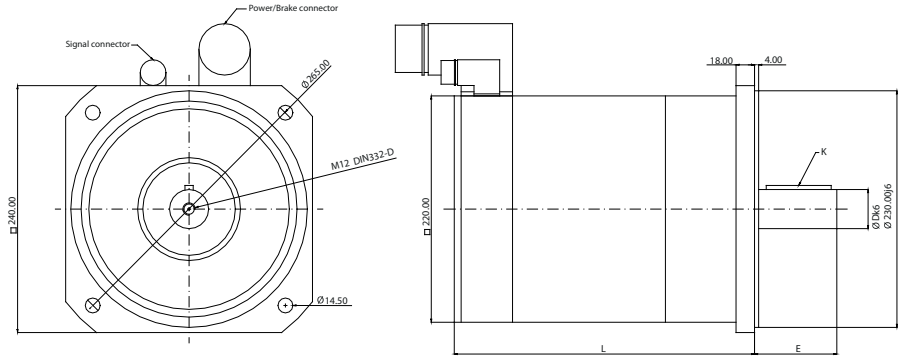
Sinusoidal 6

Voltage:

H(400)

Available torque:

from 42Nm to 120Nm



Type	D	E	Key
MMB13.42I-MMB13.73I	38	80	10x8x63
MMB13.81I-MMB13.C2I	42	110	12x8x63

• ELECTRICAL DATA

Type	Stall torque (Δt=105°C) M0 (Nm)	Rated speed n (rpm)	Rated power Pn (kw)	Rated torque Mn (Nm)	Peak torque Mpk (Nm)	Moment of inertia Jm (10^{-3})[4]kgm^2)	Peak torque acceleration apk (rad/sec^2)	Thermal time costant T_{th} (min)	Thermal protection threshold (°C)	Voltage constant ke (Vs)	Torque constant Kt (Nm/A)	BEMF at rated speed En (V)	Phase to phase resistance R (Ω)	Phase to phase inductance L (mH)	Stall current I_0 (Arms)	Nominal current I_n (Arms)
Voltage H (400 Volt) - 1500 Min-1- connection Y																
MMB13.42I_AH	42,0	1500	5,6	35,5	120	65	18462	50	140	1,88	3,26	296	0,90	16,9	12,9	10,9
MMB13.58I_AH	58,0	1500	7,4	47,0	162	90	18000	57	140	1,88	3,26	296	0,62	14,8	17,8	14,4
MMB13.73I_AH	73,0	1500	9,2	58,5	204	114	17895	65	140	1,88	3,26	296	0,45	12,5	22,4	17,9
MMB13.81I_AH	81,0	1500	10,2	65,0	231	126	18333	70	140	1,88	3,26	296	0,39	11,5	24,8	19,9
MMB13.98I_AH	98,0	1500	12,2	77,5	280	150	18667	80	140	1,88	3,26	296	0,33	9,4	30,1	23,8
MMB13.C2I_AH	120,0	1500	14,8	94,5	345	192	17969	90	140	1,88	3,26	296	0,20	6,1	36,8	29,0
Voltage H (400 Volt) - 2000 Min-1- connection Y																
MMB13.42I_2H	42,0	2000	6,8	32,5	120	65	18462	50	140	1,41	2,44	296	0,53	12,7	17,2	13,3
MMB13.58I_2H	58,0	2000	9,0	43,0	162	90	18000	57	140	1,41	2,44	296	0,36	8,6	23,7	17,6
MMB13.73I_2H	73,0	2000	11,2	53,5	204	114	17895	65	140	1,41	2,44	296	0,24	7,3	29,9	21,9
MMB13.81I_2H	81,0	2000	12,6	60,0	231	126	18333	70	140	1,41	2,44	296	0,22	6,5	33,1	24,6
MMB13.98I_2H	98,0	2000	15,2	72,5	280	150	18667	80	140	1,41	2,44	296	0,17	4,9	40,1	29,7
MMB13.C2I_2H	120,0	2000	17,9	85,5	345	192	17969	90	140	1,41	2,44	296	0,12	3,9	49,1	35,0

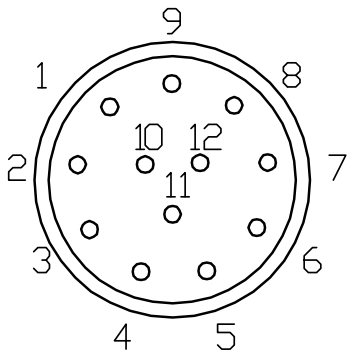
• OVERALL DIMENSIONS

Type	Stall Torque (Nm)	Lenght with RESOLVER		Lenght with ENCODER		Motor weight (Kg)	Motor weight with brake (Kg)
		Without brake	With brake	Without brake	With brake		
MMB13.42I	42,0	303	353	331	381	48,0	55,0
MMB13.58I	58,0	343	393	371	421	55,0	62,0
MMB13.73I	73,0	383	433	411	461	62,0	69,0
MMB13.81I	81,0	403	453	431	481	67,0	74,0
MMB13.98I	98,0	443	493	471	521	76,0	83,0
MMB13.C2I	120,0	503	553	531	581	92,0	99,0

Power connector size: SIZE 1,5 (M40), see page 29

• RESOLVER CONNECTION

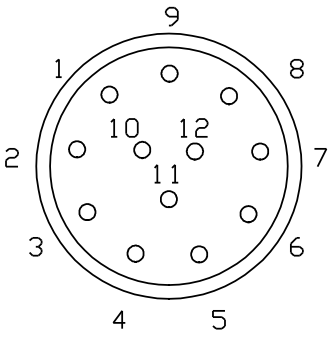
SIGNAL CONNECTOR / CONNETTORE SEGNALI



PIN	SIGNAL	COLORS
1	S2 (Sen+)	Yellow (giallo)
2	S1 (Cos+)	Red (rosso)
3	S3 (Cos-)	Black (nero)
4	N. c.	
5	N. c.	
6	S4 (Sen -)	Blue (blu)
7	R1 (Ecc+)	Red/White (rosso/bianco)
8	Shield (Schermo)	
9	To (PTO)	White (bianco)
10	To (PTO)	White (bianco)
11	R2 (Ecc -)	Yellow / White (giallo / bianco)
12	N. c.	Yellow / White (Giallo / Bianco)

• ABSOLUTE ENCODER HIPERFACE CONNECTION

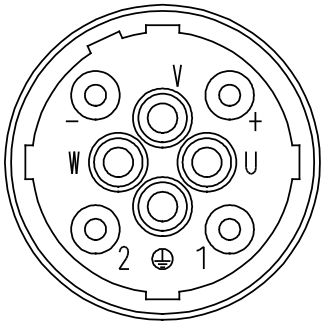
SIGNAL CONNECTOR / CONNETTORE SEGNALI



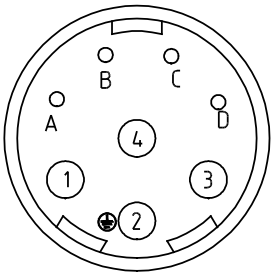
PIN	SIGNAL	COLORS
1	Us (7-12 V)	Red (rosso)
2	GND	Blue (blu)
3	Ref Sin	Brown (marrone)
4	Ref Cos	Black (nero)
5	Data+ (RS 485)	Grey (grigio)
6	Data- (RS 485)	Green (verde)
7	+ Sin	White (bianco)
8	+ Cos	Pink (rosa)
9	Pto Ther.Prot.	White to winding (bianco da avv.)
10	Pto Ther.Prot.	White to winding (bianco da avv.)
11	N. c.	N. c.
12	N. c.	N. c.

• POWER CONNECTOR
CONNETTORE POTENZA

SIZE 1.5



SIZE 1



PIN SIZE 1.5	PIN SIZE 1	SIGNAL	COLORS
U	1	Phase U	Black (nero)
V	3	Phase V	Blue (blu)
W	4	Phase W	Red (rosso)
⏚	2 ⏚	PE / Motor Case	Yellow / Green (giallo / verde)
1	A	N.c.	N.c.
2	B	N.c.	N.c.
+	C	+ 24 V Brake / Freno (option)	Red (rosso)
-	D	0V Brake / Freno (option)	Blue (blu)

• CONNECTION
Fixed connectors for power-brake and signals

Motor type	Power connector
MMB36, MMB56, MMB63, MMB71	M23 (SIZE 1)
MMB100 - 20Nm to 42Nm	M23 (SIZE 1)
MMB100 - 56Nm to 80Nm	M40 (SIZE 1,5)
MMB132	M40 (SIZE 1,5)

MMB

Ordering code

Brushless
motors & drives
stand alone

	DESCRIPTION
MMX	PRODUCT TYPE **B** Complete Brushless Servomotor
aa	MOTOR SIZE **36Q** Flange 70 **56Q** Flange 91,3 **63Q** Flange 100 **71Q** Flange 142 **100J** Flange 190 **132I** Flange 240

bb

STALL TORQUE CODE Integer: digit+digit		Fractional:letter+digit	Over hundred: +digit or letter	Over threehundred: digit+digit+digit	
02	2 Nm	DX	C0	300	300 Nm
12	12 Nm	EX	CA	375	460 Nm
25	25 Nm	FX	C1	460	460 Nm
...	etc	GX	CB		
		HX	...		
		IX	B0		
		LX	BA		
		MX	B1		
		NX	BB		
		OX	...		

c

MOTOR TYPE

Frame size	Series	Description	Frame size	Series	Description
36	Q	Sinusoidal 8 poles	71	Q	Sinusoidal 8 poles
56	Q	Sinusoidal 8 poles	100	J	Sinusoidal 10 poles
63	Q	Sinusoidal 8 poles	132	I	Sinusoidal 6 poles

d

SPEED

1 1000 rpm 2 2000 rpm 3 3000 rpm 4 4000 rpm 6 6000 rpm A 1500 rpm B 2500 rpm C 3500 rpm D 4500 rpm

e

VOLTAGE			
M	220/230V	H	380/400V

f

CONNECTION TYPE

4	Straight connectors on endshield
6	90° angled connectors
7	**Swiveling 90° angled connectors**
8	Power & signal connectors on enc cover

g

BRAKE AND SHAFT EXTENSION

A Without brake, keyed shaft	D Without brake, smooth shaft
B With brake, Keyed shaft	E With brake, smooth shaft
C With reinforced brake, keyrd shaft (if available)	F With reinforced brake, Keyed shaft (if available)

hh

FEEDBACK

00 Without feedback

RESOLVER

05 Resolver 2 poles

SIN/COS HIPERFACE ABSOLUTED ENCODER

RS Single-turn 1024 sin/cos Stegmann SRS50	RM Multi-turn 1024 sin/cos, 4096 rev. Stegmann SRM50
EK Single turn 16 sin/cos Stegmann SEK37	EL Multi-turn 16 sin/cos, 4096 rev. Stegmann SEL37

i

CONNECTION DIRECTION

0 Standard	1 Position 1	2 Position 2	3 Position 3

l

COOLING **0 Natural convection**	X Forced Ventilation 24Vdc from NDE to DE
V Forced Ventilation 230Vac from NDE to DE	

mm

57

EG.

MM	x	aa	bb	c	d	e	f	g	hh	i	l	mm
MM	B	56	G5	Q	3	H	7	A	05	0	0	57

CONNECTOR FOR MMB MOTORS SERIES

Connector Table

Type	Description
JLXCNP8PB0000B	Motor power connector
JLXCNS0002C00B	Motor power connector

CABLES FOR MMB MOTORS SERIES

Cable with connector motor side and drive side for dynamic laying - standard lenght 5 and 3 mt

Type	Description	Connectors features	Cable features
CMBL.IIPL.CFCF.A.xxxx	Motor cable for LBD	M23 (size 1)	Ø13.2mm, 2.5mm²
CMBL.IIPL.CFCF.E.xxxx	Motor cable for LBD	M40 (size 1,5)	Ø16 mm, 6 mm²
CMBL.IIPL.CFCF.F.xxxx	Motor cable for LBD	M40 (size 1,5)	Ø 20 mm, 10 mm²
CMBL.IIPL.CFCF.G.xxxx	Motor cable for LBD	M40 (size 1,5)	Ø 23 mm, 16 mm²
CMBL.IIPI.CFCF.D.xxxx	Motor cable for EASY	M23 (size 1)	Ø 10,6mm, 1,5mm²
CRES.DMCL.CFWF.C.xxxx	Resolver cable for LBD and EASY	M23	Ø10.9mm
CEAY.DMCL.CFCF.C.xxxx	HIPERFACE absolute encoder cables for LBD	M23	Ø8.5mm

*.xxxx = cm example for 5 mt: .0500

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
Vn=5000 rpm (for 1,3Nm)
Vn=3000 rpm (for 1,5-2,8-4-5,6-6-15-30Nm)
Feedback
HIPERFACE absolute encoder single or multiturn
On board I/O's
for size 1,3Nm:
3 digital inputs PNP 24V
2 digital output PNP 24V
1 pogrammable input/output PNP 24V
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
Interface
EtherCAT, CANopen
Safety
for size 1,3Nm:
STO 2 channels, SIL3 (pending)
for sizes from 1,5Nm to 30Nm:
STO 1 channel, SIL3
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

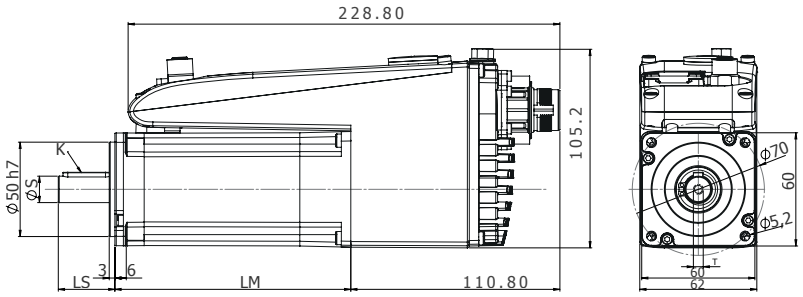
Type	BDPOW20	BDPOW40
Standard dimensions (mm) *	H352,5xW82,4xD270,6	
Weight (kg)	5,8	

*maximum overall dimensions

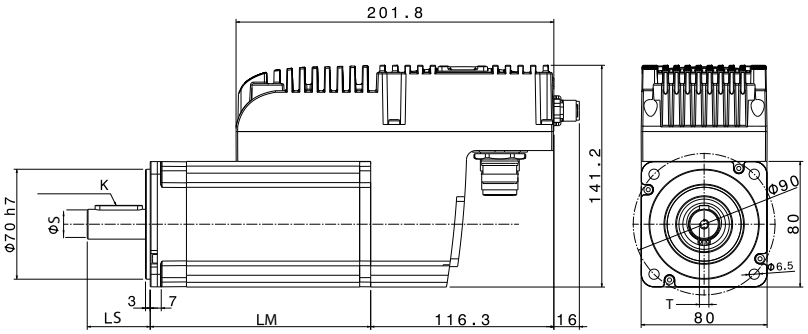
IBD

Brushless
motors & drives
integrated and Near by

IBD Flange 60 mm



IBD Flange 80 mm



• OVERALL DIMENSIONS

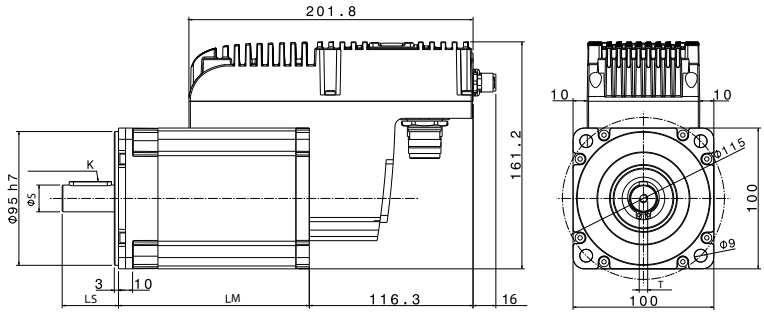
Type	IBD566C-1,3Nm	IBD5650-1,5Nm	IBD5610-2,8Nm	IBD5620-4Nm
Flange (mm)	60	80	80	80
Lenght LM without brake (mm)	125	90	115	140
Lenght LM with brake (mm)	162	132	157	182
Shaft lenght LS (mm)	30	30	40	40
Shaft diameter (ØS)	14h6	14h6	19h6	19h6
Thread (T)	M5	M5	M6	M6
Key dimensions (K)	5x5x30	5x5x25	6x6x30	6x6x30

• TECHNICAL FEATURES

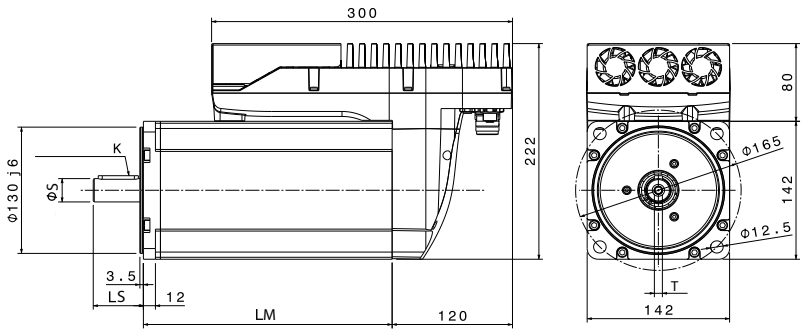
Type	*M0* Stall torque (Nm)	*Mn* Rated torque (Nm)	*Mpeak* Peak Torque (Nm)	Power Watt* (W)	*Jm* Rotor Inertia (kgcm²)	*Vn* Rated Speed (rpm)	IBD Weight no brake (Kg)	IBD Weight with brake (Kg)
IBD566C	1,3	0,9	3,9	550	0,24	5000	1,8	2
IBD5650	1,5	1,4	4,5	520	0,64	3000	3,3	4
IBD5610	2,8	2,55	8,4	950	1,16	3000	4,1	4,8
IBD5620	4	3,2	12	1200	1,58	3000	5,1	5,8

*Power consumption in continuous operation

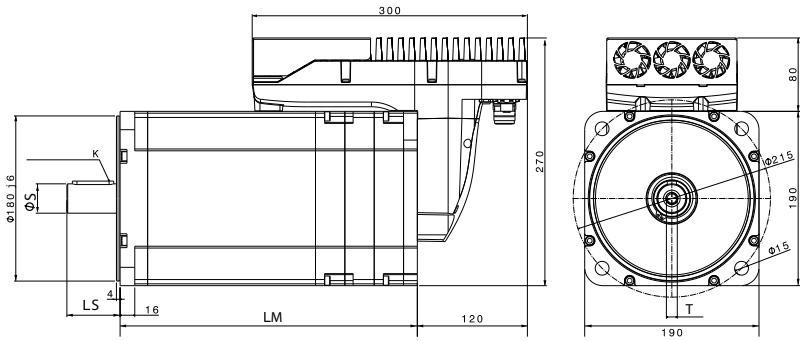
IBD Flange 100 mm



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

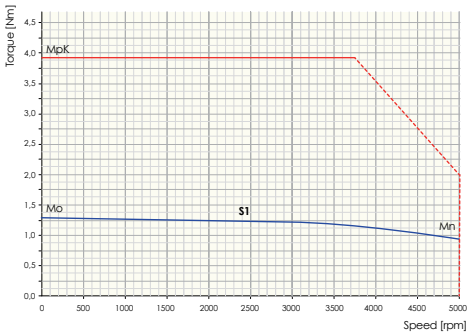
Type	*M0* Stall torque (Nm)	*Mn* Rated torque (Nm)	*Mpeak* Peak Torque (Nm)	Power Watt* (W)	*Jm* Rotor Inertia ($kgcm^2$)	*Vn* Rated Speed (rpm)	IBD Weight no brake (Kg)	IBD Weight with brake (Kg)
IBD5630	5,6	4,3	22	1600	2,91	3000	6,7	7,9
IBD5640	6	5	22	1850	4	3000	8	9,2
IBD56F0	15,4	11,7	45	4300	11,5	3000	17	18,5
IBD56G0	30	25	70	9200	74	3000	38	43

*Power consumption in continuous operation

• TORQUE CURVES

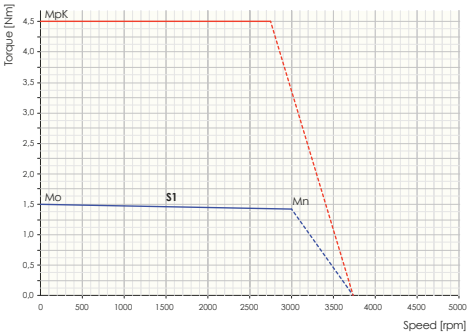
IBD566C Flange 60 - 1,3 Nm [M0]

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



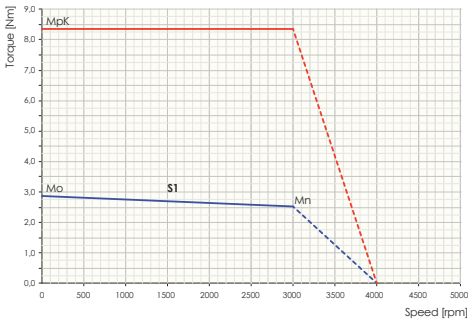
IBD5650 Flange 80 - 1,5 Nm [M0]

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



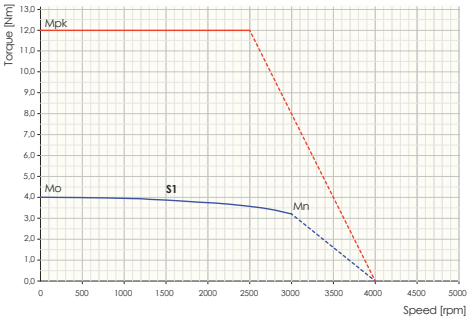
IBD5610 Flange 80 - 2,8 Nm [M0]

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



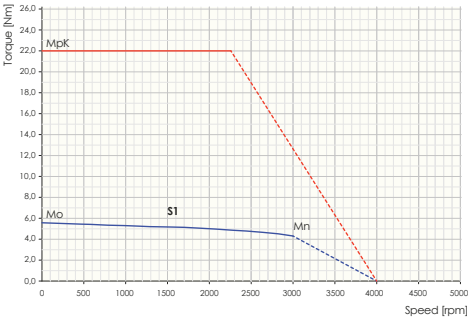
IBD5620 Flange 80 - 4 Nm [M0]

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



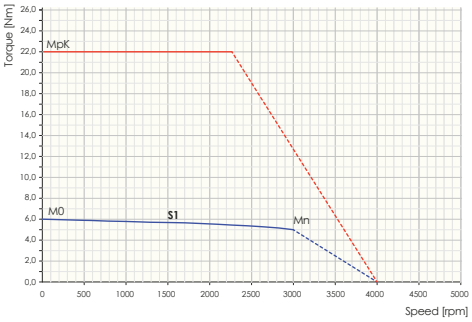
IBD5630 Flange 100 - 5,6 Nm [M0]

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



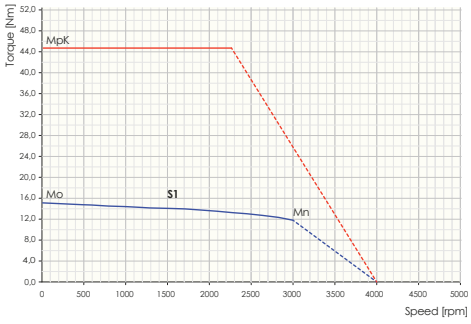
IBD5640 Flange 100 - 6 Nm [M0]

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



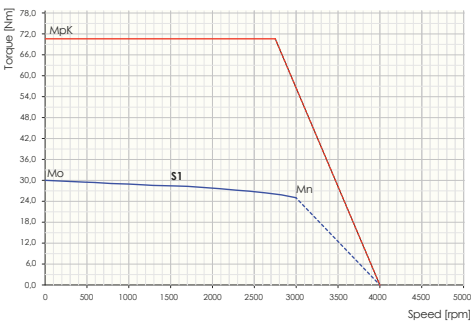
IBD56F0 Flange 142 - 15,4 Nm [M0]

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

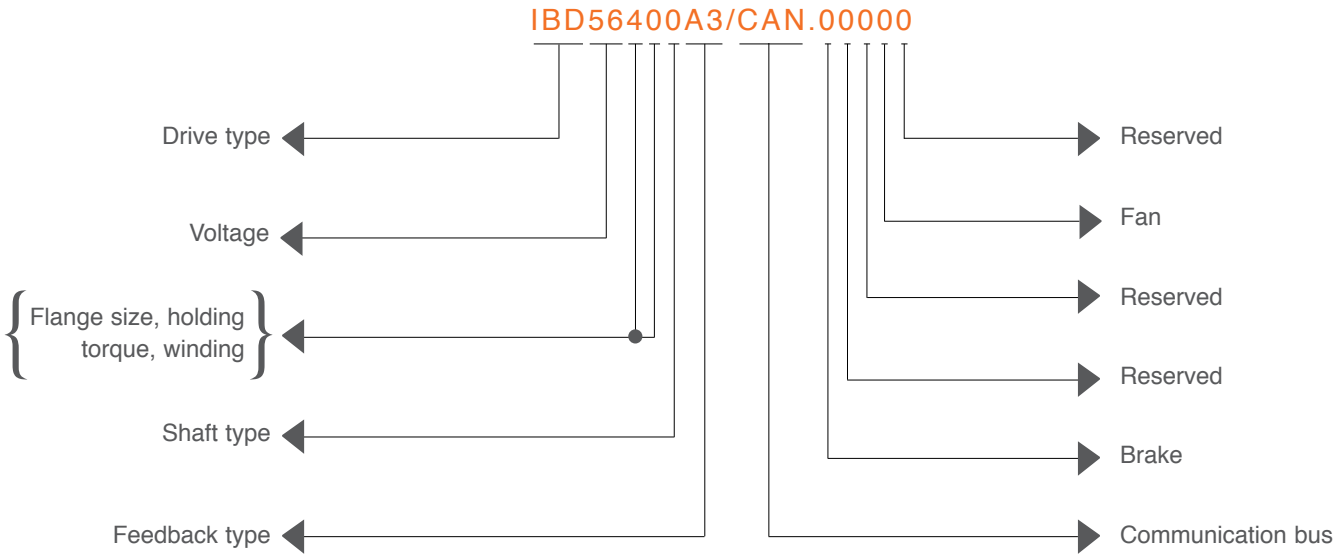


IBD56G0 Flange 190 - 30 Nm [M0]

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		6C						
	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

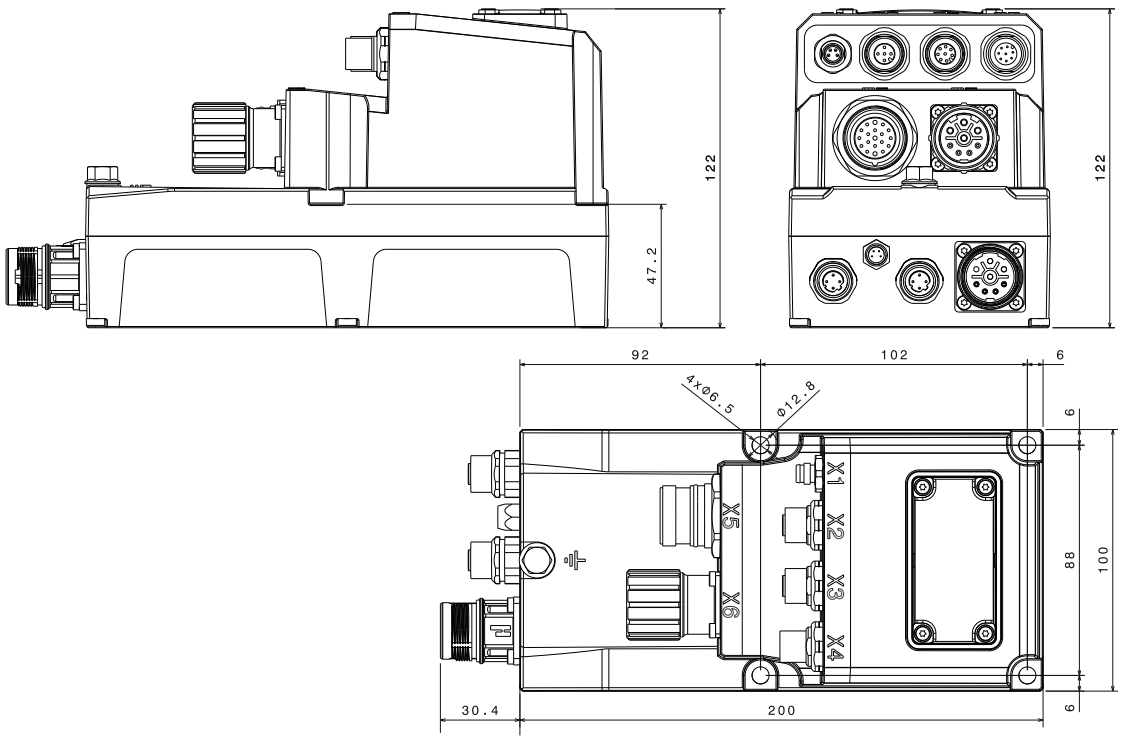
HARDWARE FEATURES

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, SIL3 (Pending)
Protection
IP65

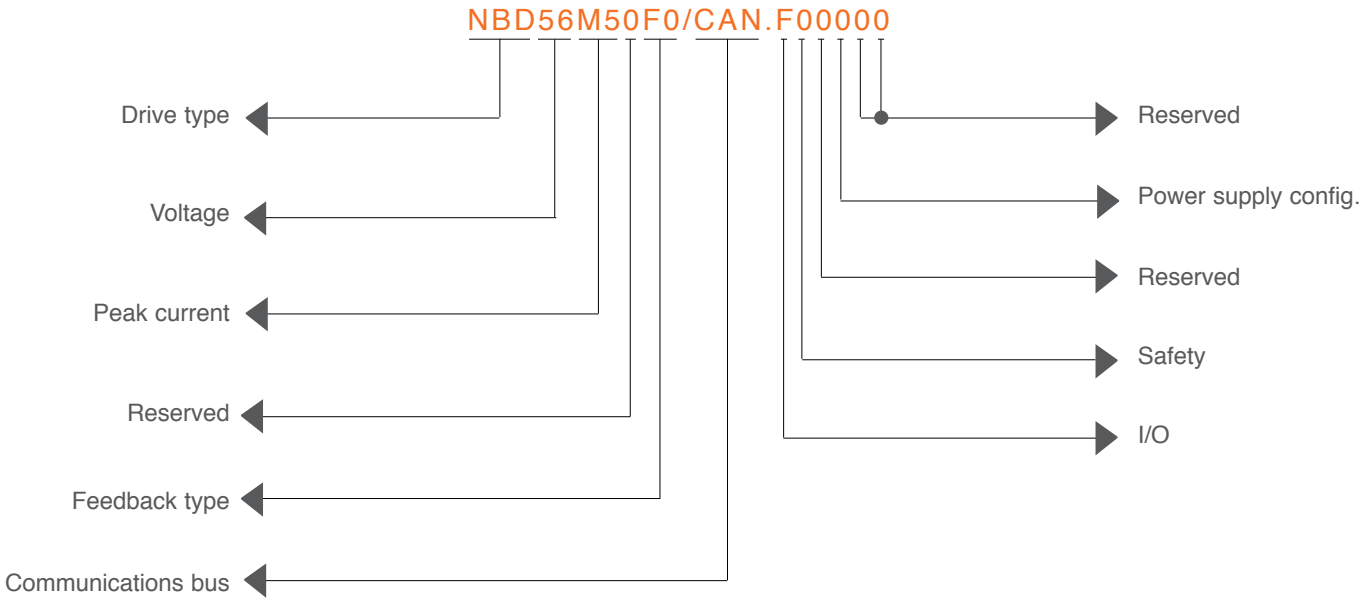
NEW

CANopen EtherCAT

• OVERALL DIMENSIONS



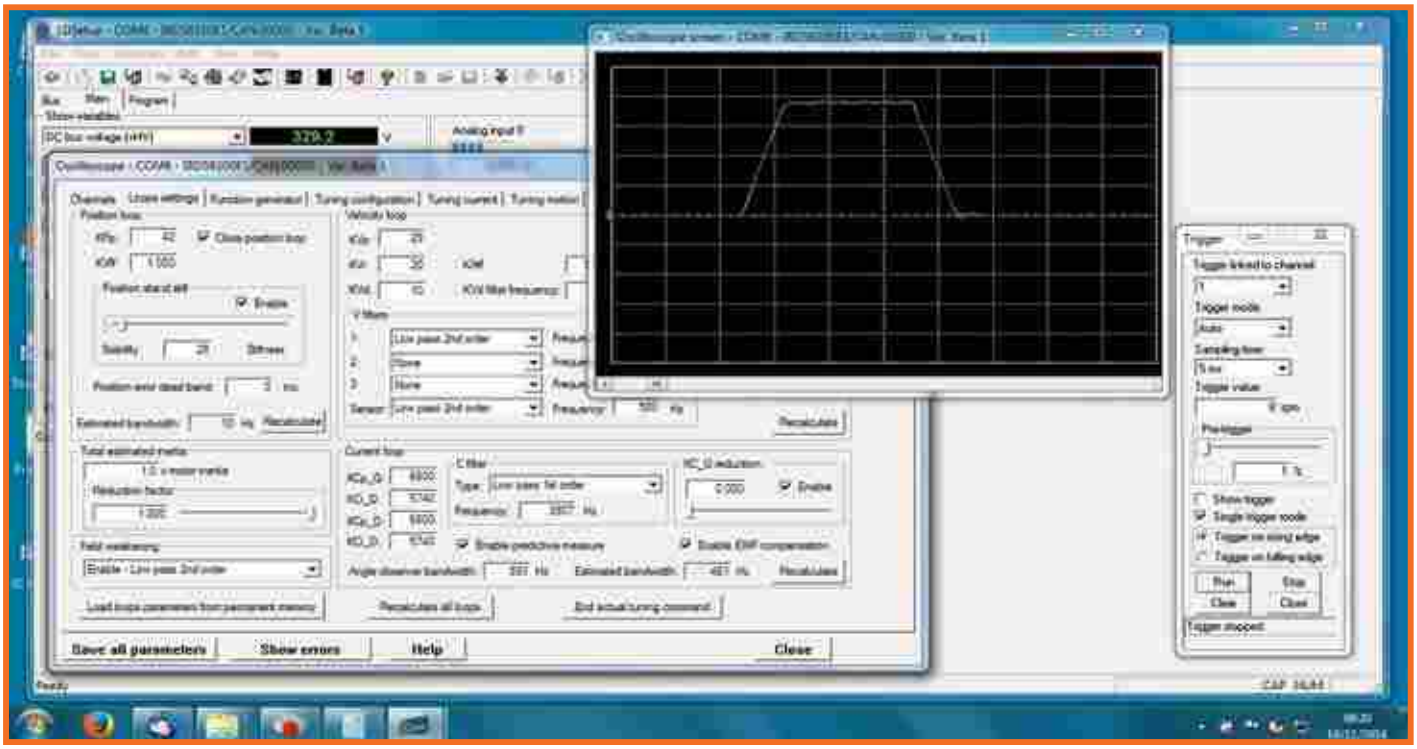
• ORDER CODE EXAMPLE



• 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.

SD

Stepless drives and motors

Stepless is the term used to identify the CMZ closed loop control of a stepper motor. This technology allows you to control the stepper motor with modulated current, eliminating the problem of the loss of the step and reducing the temperature of the motor. Considering that stepless solution provides higher torque at low speed (for the same size of the motor) with respect to the brushless solution, it makes stepless servo motor very suitable for particular applications at low speeds.
The stepless solution is available as a stand-alone version composed by SVM, stepless servo drive, and by MM series, “motor encoder box”, or as integrated version ISD, both with the fieldbus CANopen, PROFIBUS, serial RS485 with MODBUS protocol or controlled in Step & Dir.
The fieldbus CANopen DS402 allows ISD and SVM to be used with both the controllers of FCT family and with different controllers and especially with controllers that use the environment CODESYS 3.5 with Softmotion where you can choose ISD and SVM between the drives made available from CODESYS.

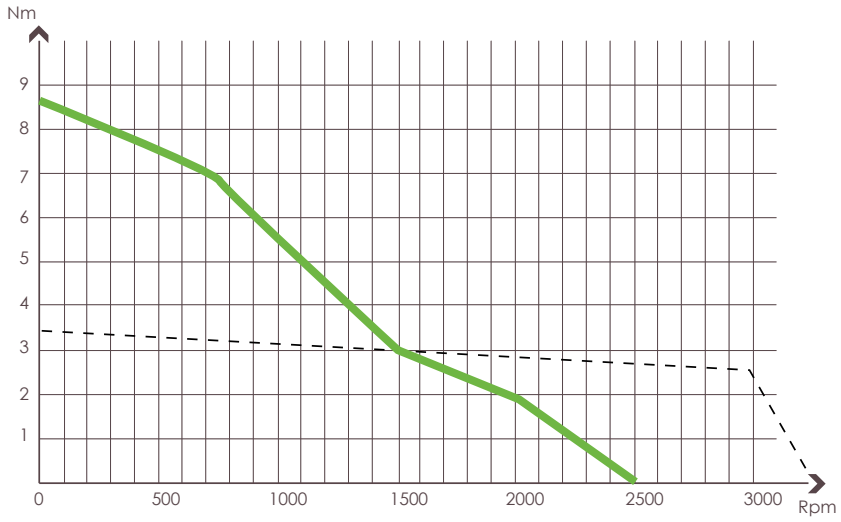
Stepless è il termine con cui CMZ identifica il controllo in catena chiusa di un motore stepper. Questa tecnologia permette di controllare il motore passo passo con corrente modulata, eliminando la problematica della perdita del passo e riducendo in modo importante la temperatura del motore. Considerando che soluzione stepless offre coppie superiori a bassi giri (a parità di dimensione del motore) rispetto alla soluzione brushless, ciò rende gli stepless servo motor molto adatti in particolari applicazioni a basse velocità.
La soluzione stepless è disponibile nella versione stand alone composta dal servo drive SVM e dai “motor encoder box” della serie MM o nella versione integrata ISD, entrambi con i bus di campo CANopen, PROFIBUS, serie RS485 con protocollo MODBUS o comandabili in Step&Dir.
Il bus di campo CANOpen con il profilo DS402 permette all’ISD e all’SVM di essere utilizzati sia con i controllori della serie FCT sia con controllori diversi e soprattutto con controllori che usano l’ambiente CODESYS 3.5 con Softmotion che permette di scegliere ISD e SVM tra i drives messi a disposizione da CODESYS.

• STEPLESS CONTROL

THE NEW GENERATION OF SERVODRIVE

• TORQUE CURVE COMPARISON: STEPLESS VERSUS BRUSHLESS

The ambition *to move* the limits

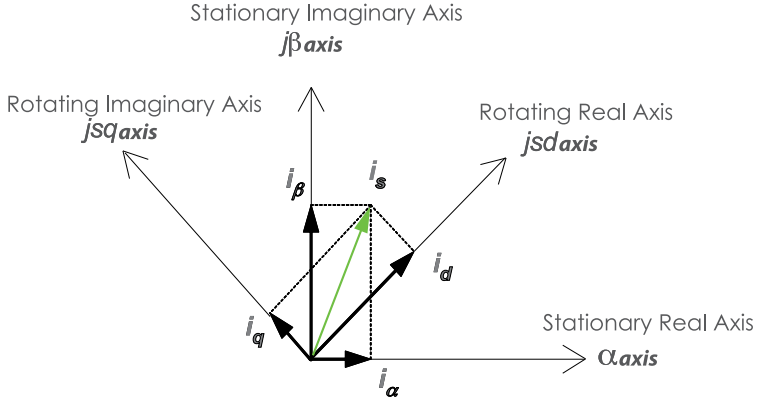


Torque curves considering S1 duty cycle

Stepless motor ——————
Stall torque 8,7Nm - 8A/phase - 120V
Overall dimensions: square flange 86mm, lenght 173mm

Brushless motor – – – – – – –
Stall torque 3,4Nm - 2,3A/phase - 400V
Overall dimensions: square flange 91mm, lenght 177mm

• VECTOR CONTROL CURRENT MODULATION



> Minimum speed and torque ripple
> Low vibration
> Low noise
> High torque density
> Low power consumption
> High stifness

• INTEGRATED STEPLESS DRIVE

HARDWARE FEATURES

Power supply
65-130Vdc [Nominal 120Vdc]

Logic supply
20-130Vdc

Current
Maximum current internally set
(depends on motor)

Feedback
Incremental encoder
Multiturn absolute encoder

Encoder output
Incremental encoder output (only APD version)

Digital input
N. 3 optoisolated PNP digital inputs
N. 2 differential (+24V or +5V/Line driver) digital inputs
(used as general purpose, encoder input or step-dir input).

Analog input
1 Analogue IN +/-10V

Digital output
2 optoisolated PNP digital outputs 24Vdc max 200mA,
(external 24Vdc required)

Digital bidiretional I/O
2 bidirectional optoisolated PNP digital IN/OUT

Interface
Profibus-DP slave
CANopen
RS232/485 (ModBus)

Available versions
Profibus-DP
CANopen (DS402),
ModBus RS485,
Step/dir, ±10V with encoder output

FUNCTIONAL FEATURES ISD

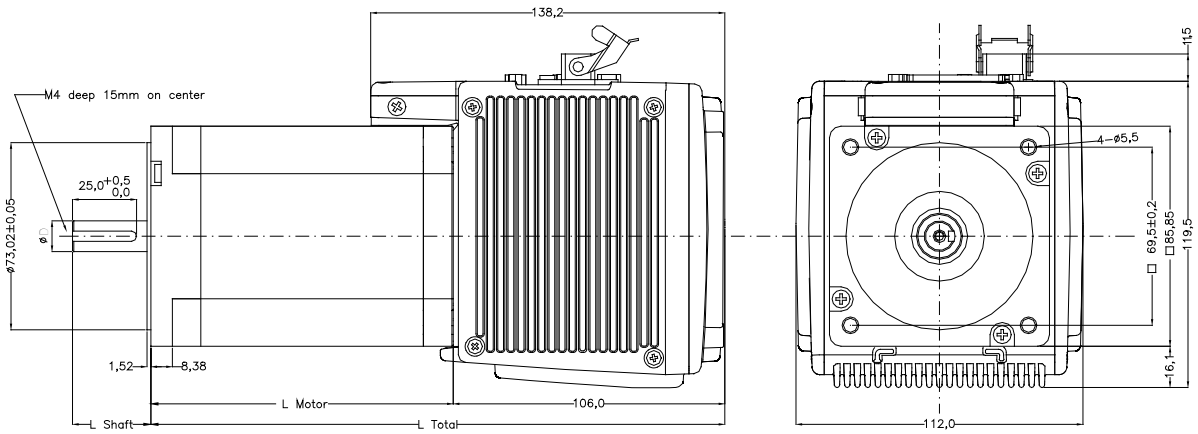
Integrated movement features:
device profile DS402, interpolated mode,
positioning, extended gearing function,
homing, capture

Stand alone programmability
according to the standard IEC61131,
ST language

Capture input

PC parametrization tool

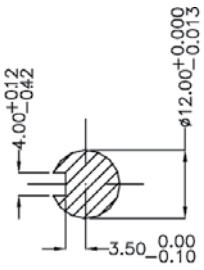
• OVERALL DIMENSIONS



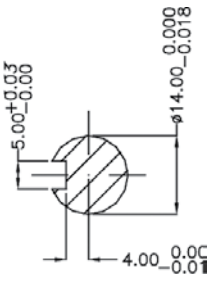
Drive	Holding torque (Nm)	Lenght (mm)		Shaft		Shaft section
		L motor	L total	L Shaft	D Diameter	
ISD 1281	4,6	80	186	30,6	12	Type 0 Keyed shaft
ISD 1271	8,7	118	224	30,6	12 or 14	Type 0 or 3 Keyed shaft
ISD 1261	12,0	156	262	30,6	14	Type 3 Keyed shaft

• SHAFT SECTION TYPES

TYPE 0



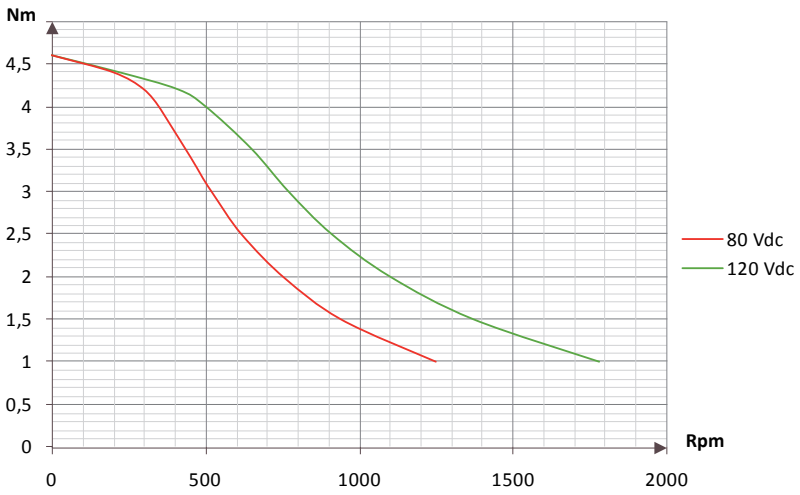
TYPE 3



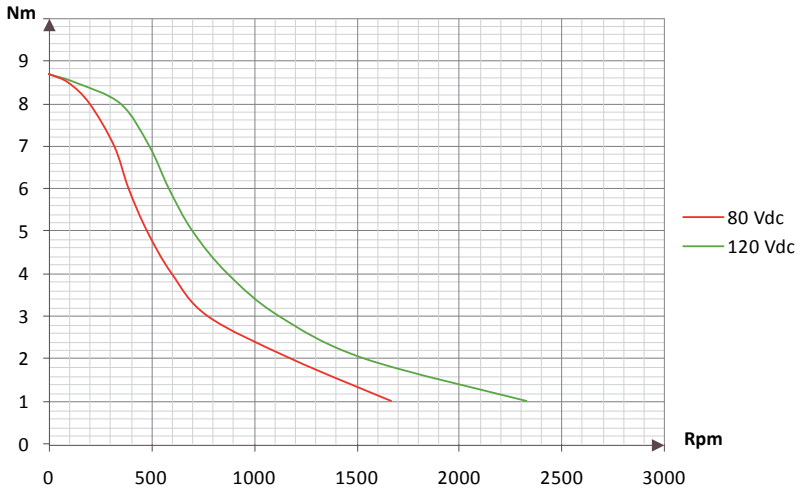
• TECHNICAL FEATURES

Drive	Holding torque (Nm)	Phase Current (A)	Rotor Inertia (gcm²)	Phase inductance (mH)	Weight (kg)
ISD 1281	4,6	5,5	1400	4,0	3,3
ISD 1271	8,7	8,0	2700	2,9	5,1
ISD 1261	12,0	9,9	4000	2,9	6,6

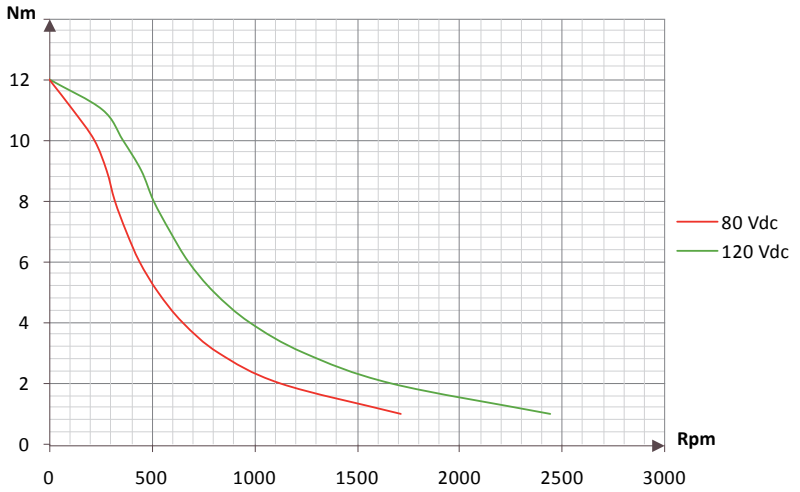
• TORQUE CURVES



ISD 1281 - 4,6 Nm



ISD 1271 - 8,7Nm



ISD 1261 - 12Nm

• ISD ORDERING CODE

Ordering code with optionals:					ISD12xy/a.bcd	
Type	Holding torque	Encoder	Com. (a)	Conn. (b)	Shaft type (c)	Option (d)
12=120V	x	y	a	b	c	d
ISD12xy	8				0	
ISD12xy	7				0 or 3	
ISD12xy	6				3	

Options		
x	8	4,6Nm
	7	8,7Nm
	6	12Nm
y	1	Incremental encoder 2000 pulse/turn
	3	Multiturn absolute encoder 2048 pulse/turn - 4096 turns
a	CAN	CAN Communication
	APD	Analog Pulse Direction
	SER	RS485 Communication
	PRO	PROFIBUS Communication
b	1	n.3 DSUB connectors + n.1 power supply 3 poles (ONLY FOR CAN, APD)
	2	Cicular connectors IP67 (ONLY FOR CAN, SER)
	3	n.3 DSUB + n.1 power supply with 4 poles (FOR CAN, SER, PRO, APD)
c (see the available optionals above)	0	Shaft diameter: 12 mm keyed shaft (ONLY FOR ISD1281 e ISD1271)
	3	Shaft diameter: 14 mm keyed shaft (ONLY FOR ISD1261 e ISD1271)
d	0	Old mechanics (no more available)
	1	Standard mechanics

		ISD12	7	1/	CAN	1	3	1
E.g	ISD1271/ CAN.100	ISD 12V	8,7Nm	Incremental encoder	Can interface	n.3 DSUB + n.1 power supply	14 mm keyed shaft	New mechanics

• SMART SERVODRIVE FOR 2 PHASES SYNCHRONOUS MOTOR

HARDWARE FEATURES

Power supply
65-180Vdc [Nominal 160Vdc]

Logic supply
20-180Vdc

Rated current
4Arms @40°C (8,5Arms with external ventilation)

Peak current
12Arms

Feedback
Incremental encoder, multiturn absolute encoder

Encoder output
Incremental line driver (differential output)

Digital input
7 configurable 24Vdc PNP optoisolated (e.g.: limit switch +/-, index, captures or general purpose)

Special digital input
2 configurable 24Vdc PNP or line driver optoisolated: settable as master encoder or step/dir or general purpose

Analog input
1 Analogue IN +/-10V

Digital output
4 optoisolated PNP digital outputs 24Vdc max 200mA
n. 1 24Vdc max 1,4A
for motor brake control or general purpose
(external power device required)

Interface
Profibus-DP slave
CANopen RS232/485 (ModBus) step/dir,
+/-10V with encoder output

CAN Speed/address selection
by switches or software settable

Available versions
Profibus-DP, CANopen, ModBus RS485, Step/dir, ±10V

Dimensions (mm)
W51xH196xD125

Weight (Kg) 0.8

FUNCTIONAL FEATURES SVM

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

• SVM ORDERING CODE

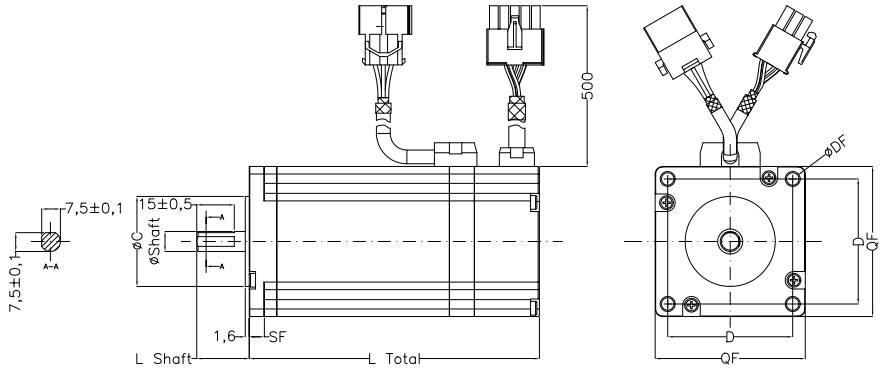
SVM 1608/a.bcd

Type	Power supply	Rated current	Interface /a	Motor temperature sensor management b		Reserved cd
SVM	16 (160V)	08 (8,5Arms)	CAN	0=no	1=yes	00
SVM	16 (160V)	08 (8,5Arms)	SER (RS485)	0=no	1=yes	00
SVM	16 (160V)	08 (8,5Arms)	PRO (Profibus)	0=no	1=yes	00

• OVERALL DIMENSIONS

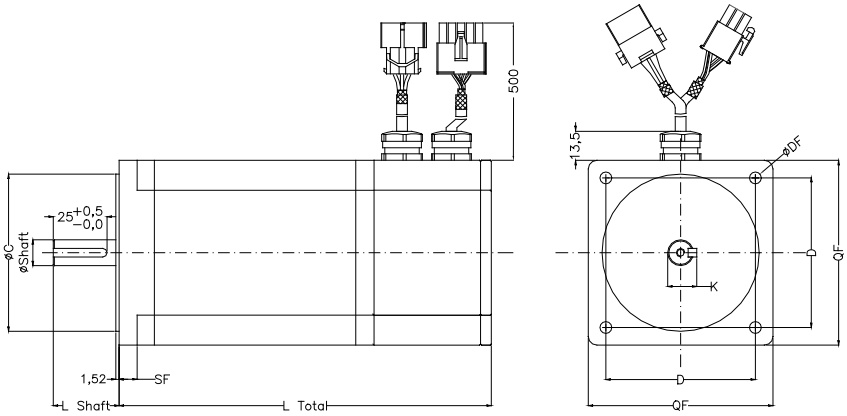
Motor type	Stall torque (Nm)	L total Lenght (mm)	QF Flange (mm)	C Centering (mm)	SF Thikness flange (mm)	D Holes distances (mm)	DF Fixing holes (mm)	Ø Shaft (mm)	K (mm)	L Shaft (mm)	Weight (kg)
MM609442	2,8	116	60	36,05	6,00	50,2	4-Ø5,5	8	-	21,0	1,5
MM868055	4,6	135	86	73,02	8,38	69,5	4-Ø5,5	12	13,5	30,6	2,8
MM8611880	8,7	173	86	73,02	8,38	69,5	4-Ø5,5	12/14	16,0	30,6	4,3
MM8615699	12	211	86	73,02	8,38	69,5	4-Ø5,5	14	16,0	30,6	5,8
MM11015065	21	205	110	55,52	12,5	89,00	4-Ø8,5	19	21,5	55,37	9

• OVERALL DIMENSIONS FLANGE 60

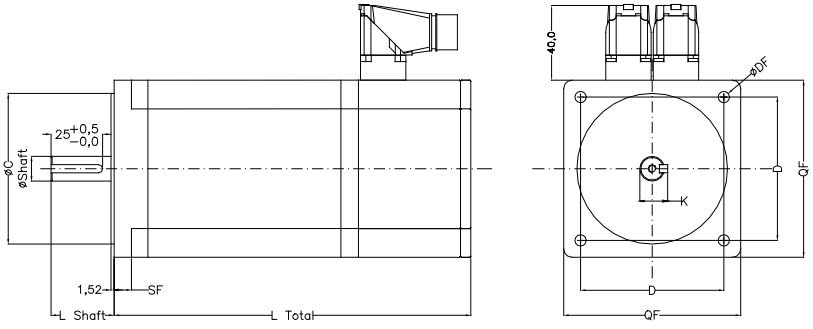


• AMP CONNECTORS

• OVERALL DIMENSIONS FLANGE 86 - 110

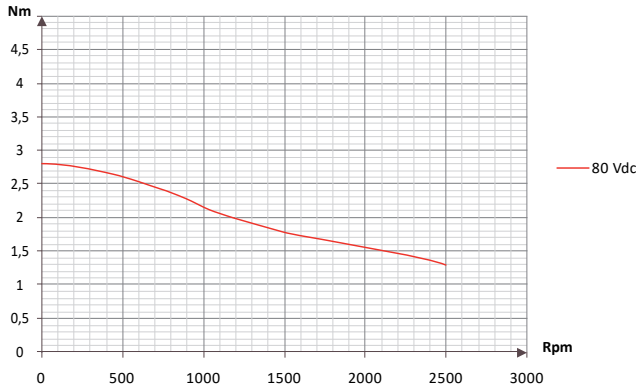


• AMP CONNECTORS

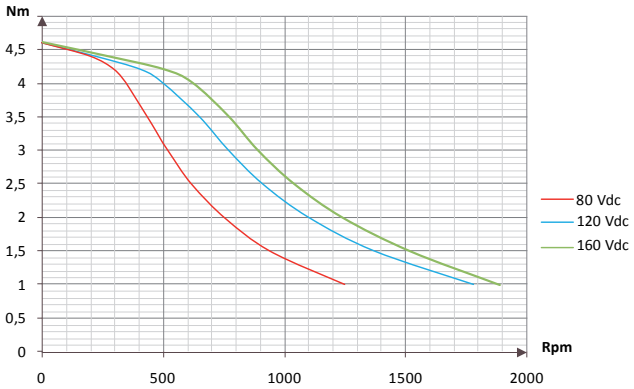


• CIRCULAR CONNECTORS

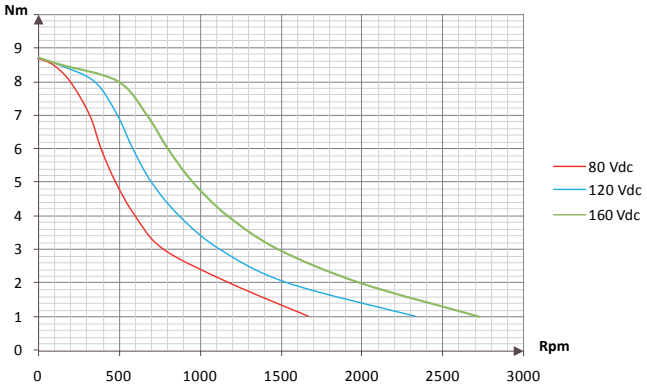
• TORQUE CURVES



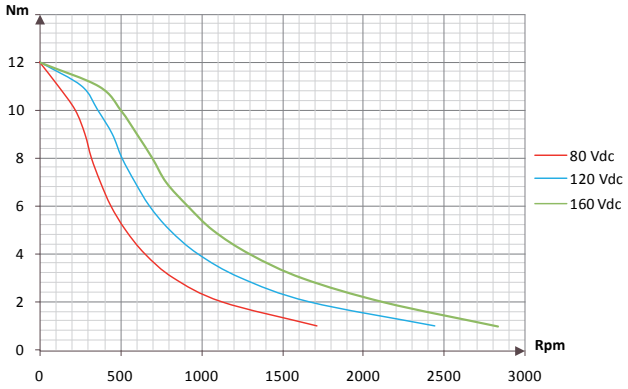
SVM - MM609442- 2,8 Nm



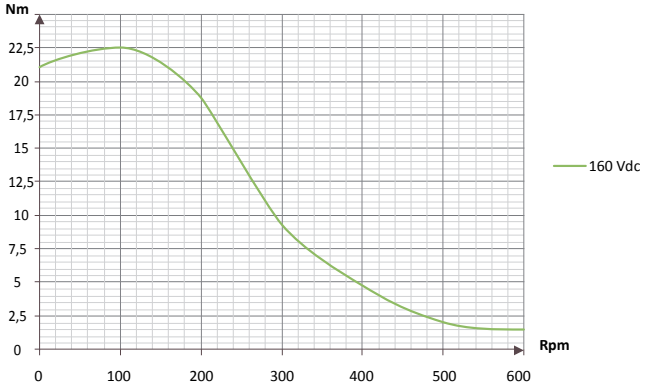
SVM - MM868055 - 4,6 Nm



SVM - MM8611880 - 8,7 Nm



SVM - MM8615699 - 12Nm



SVM - MM11015065 - 21Nm

MM
Ordering Code

Stepless drives
& motors

• MM MOTORS ORDERING CODE

Ordering code with Optionals:										
	x				a	b	c	d		
	MM	60	9442	.	3	6	1	0		
x	MM	60	9442		Holding torque 2,8 Nm	□ FL60 mm	780 gcm²	Ø 8mm	Inc enc 1000 pulse/turn	
	MM	86	8055		Holding torque 4,6 Nm	□ FL86 mm	1400 gcm²	Ø 12mm	Inc enc 2000 pulse/turn	
	MM	86	11880		Holding torque 8,7 Nm	□ FL86 mm	2700 gcm²	Ø 12 or 14mm	Inc enc 2000 pulse/turn	
	MM	86	15699		Holding torque 12 Nm	□ FL86 mm	4000 gcm²	Ø 14mm	Inc enc 2000 pulse/turn	
	MM	110	15065		Holding torque 21 Nm *	□ FL110 mm	10900 gcm²	Ø 19mm	Inc enc 2000 pulse/turn	
a	0				Shaft Diameter: 12 mm Keyed shaft (ONLY FOR 4,6 Nm and 8,7Nm)					
	1				Shaft Diameter: 14 mm Keyed shaft (ONLY FOR 8,7 Nm and 12Nm)					
	2				Shaft Diameter: 19 mm Keyed shaft (ONLY FOR 21Nm)					
	3				Shaft Diameter: 8 mm Keyed shaft (ONLY FOR 2,8 Nm)					
b	0				Incremental encoder 2000 pulse/turn (ONLY FOR MM86 and MM110)					
	3				Incremental encoder 2000 pulse/turn + Thermal sensor (ONLY FOR MM86 and MM110)					
	6				Incremental encoder 1000 pulse/turn (ONLY FOR MM60)					
c	1				AMP connectors with cable output 50cm					
	2				Circolar connector output 90°					
d	0				IP44					

* Usable only up to the speed of 500 rpm

• CABLES FOR STEPLESS MOTORS AND ORDERING CODE

Type	Description	Lenght (mt)
Cable with connector motor side and drive side for fixed installation		
CSMP.IIPS.PF6S.A.0500	Motor cable for motors cover box with AMP 6 poles	5
CSMP.IIPS.PF6S.A.0300	Motor cable for motors cover box with AMP 6 poles	3
CSEI.DMCS.PF9S.A.0500	Encoder cable for motors cover box with AMP 15 poles	5
CSEI.DMCS.PF9S.A.0300	Encoder cable for motors cover box with AMP 15 poles	3
CSMP.IIPS.CFCS.A.0500	Motor cable for motors cover box circular connector 7 poles	5
CSMP.IIPS.CFCS.A.0300	Motor cable for motors cover box circular connector 7 poles	3
CSEI.DMCS.CFCS.A.0500	Encoder cable for motors cover box circular connector 12 poles	5
CSEI.DMCS.CFCS.A.0300	Encoder cable for motors cover box circular connector 12 poles	3
CSIT.DMCS.CFCS.C.0500	Encoder cable for motor cover box with temperature sensor circular connector 12 poles	5
CSIT.DMCS.CFCS.C.0300	Encoder cable for motor cover box with temperature sensor circular connector 12 poles	3
Cable with connector motor side and drive side for flexing installation		
CSMP.IIPS.CFCS.B.0500	Motor cable for motors cover box circular connector 7 poles	5
CSMP.IIPS.CFCS.B.0300	Motor cable for motors cover box circular connector 7 poles	3
CSEI.DMCS.CFCS.C.0500	Encoder cable for motors cover box circular connector 12 poles	5
CSEI.DMCS.CFCS.C.0300	Encoder cable for motors cover box circular connector 12 poles	3
CSIT.DMCS.CFCS.D.0500	Encoder cable for motor cover box with temperature sensor circular connector 12 poles	5
CSIT.DMCS.CFCS.D.0300	Encoder cable for motor cover box with temperature sensor circular connector 12 poles	3

• POWER SUPPLY ORDERING CODE

Ordering code with optional : SDPOW0.xxx	
Auxiliary output 24Vdc 150mA	
SDPOW0.201	Power supply AC/DC 80Vdc-120Vdc
SDPOW0.211	Power supply AC/DC 80Vdc-120Vdc + DIN guide

Ordering code with optional : SDPOWR.xx	
Auxiliary output up to 50Vdc 1A	
SDPOWR.00	Power Supply AC/DC 80Vdc-170Vdc
SDPOWR.10	Power Supply AC/DC 80Vdc-170Vdc+START UP circuit - It is necessary with ISD

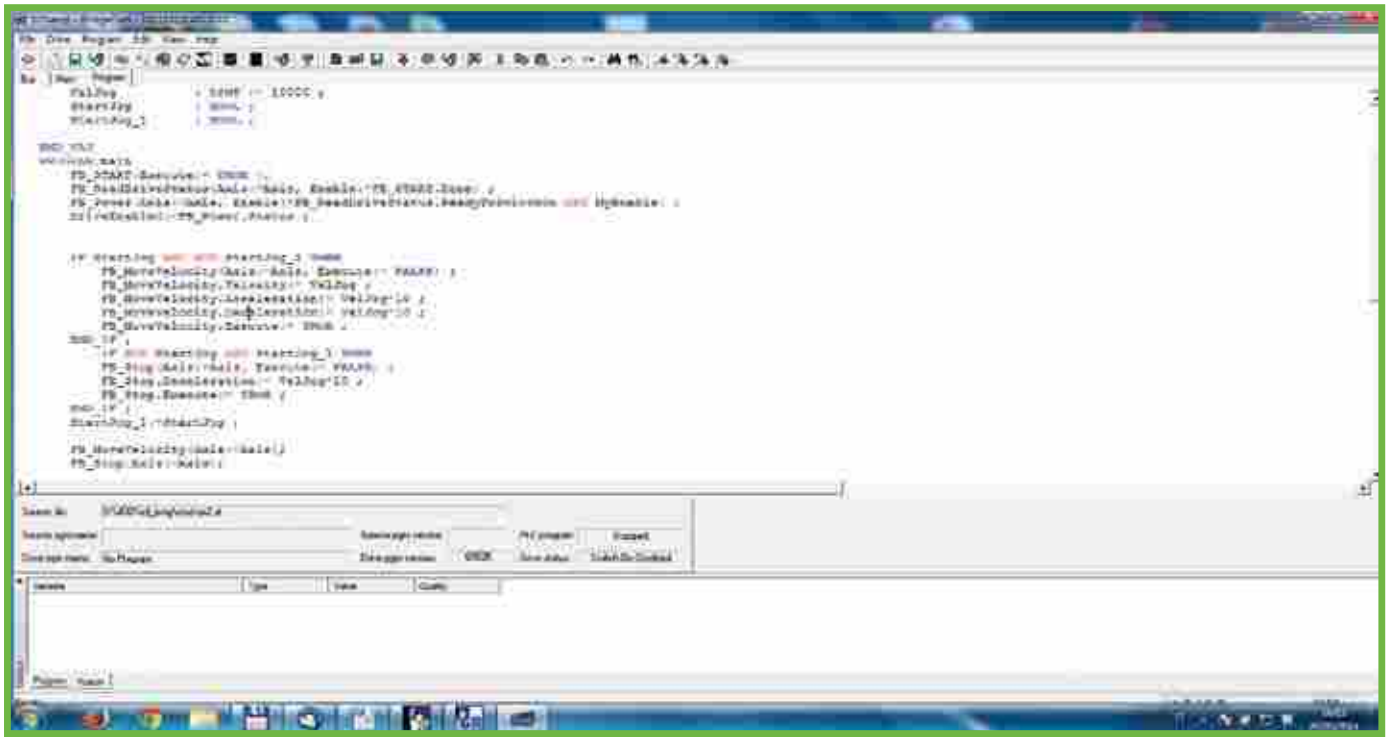
Ordering code with optional : SDPOWT.00	
SDPOWT.00	Power Supply AC/DC up to 160Vdc

SD SETUP

The environment

Stepless drives
& motors

• SD setup



SD setup is the development environment for the configuration, parameterization, tuning and programming of the drives ISD/SVM and IBD 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:

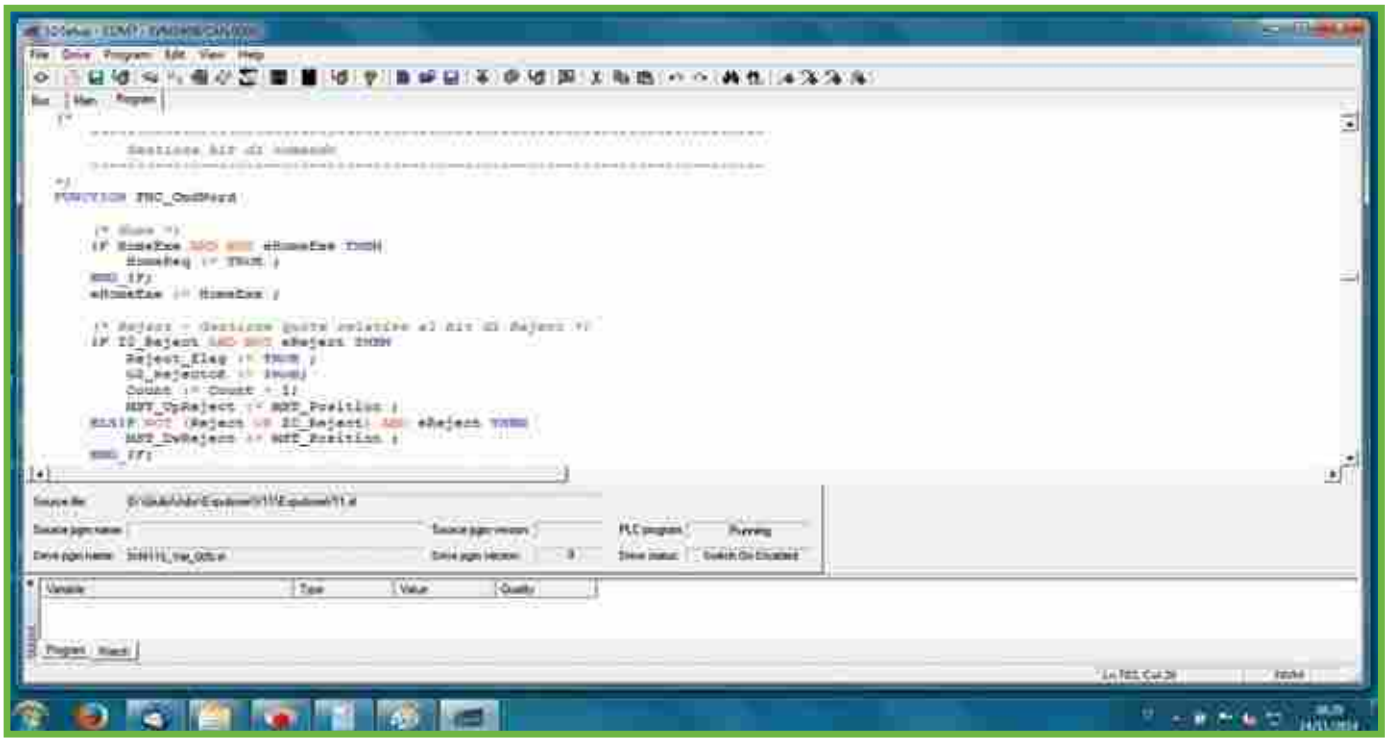
- Instant monitor of the main variables of the system, but also of all the secondary variables through an access to vocabulary.
- Configuration of the system (such as configuration of the digitals I/O modules and the maximum limits of speed/ acceleration).
- Updating of parameters and firmware.
- Auto-tuning 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).

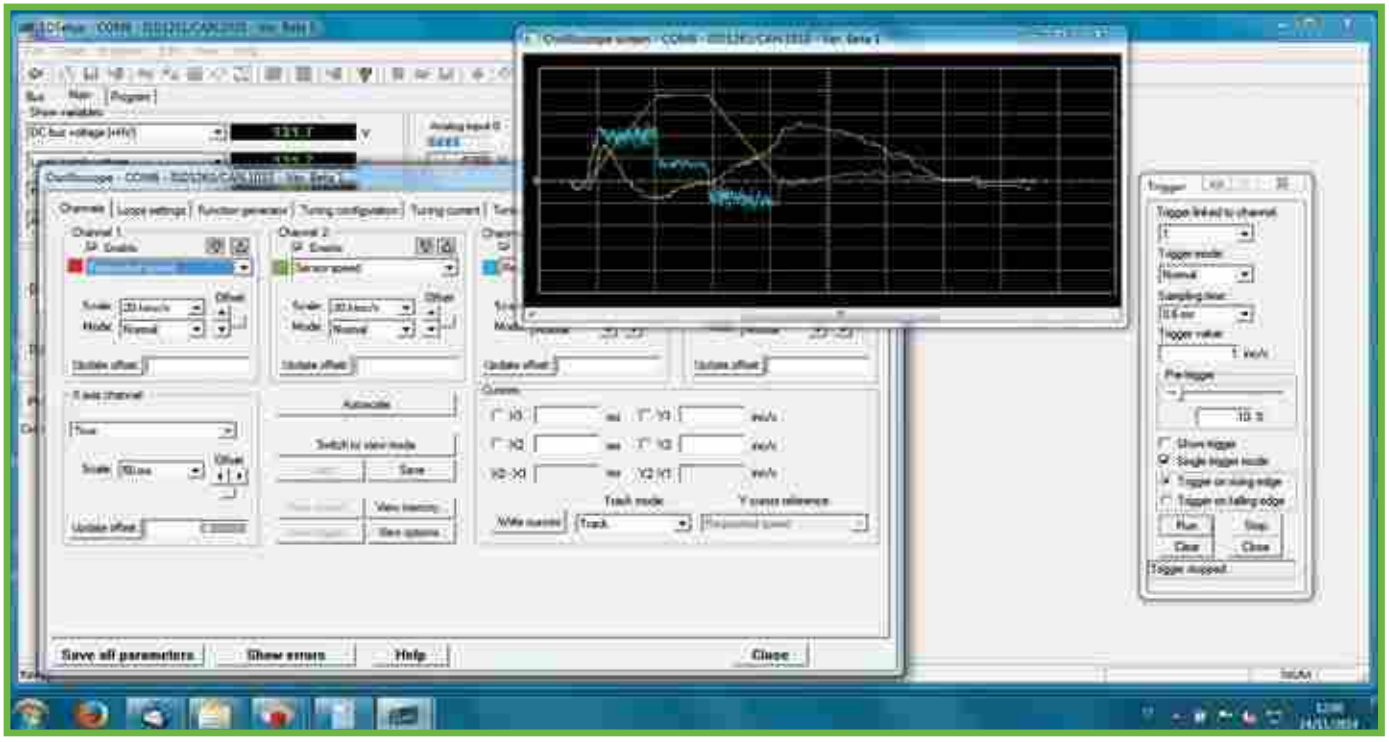
Finally, recalling that the systems are also programmable, SD setup is also proposed as a tool that allows editing and debugging programs written in IEC61131 type Structured Test.

SD setup è l'ambiente di sviluppo per la configurazione, parametrizzazione, programmazione e taratura degli azionamenti ISD/SVM e IBD 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.




Save all parameters
Show errors
Help
Close

CANopen MODULES
I/O MODULES

Remote I/O modules:

- Digital I/O
- Analog I/O
- Load cells acquisition
- Thermocouples/thermoresistances acquisition
- Special functions

Moduli remoti:

- I/O digitali
- I/O analogici
- Acquisizione celle di carico
- Acquisizione termocoppie/termoresistenze
- Funzioni speciali

Peripherals

Modules & Devices

Peripherals

Ordering code

Modules & Devices

• CANopen MODULES

CPENCA - Axis module

device profile DS406/DS402
1 incremental encoder input
1 analog output +/- 10 Volt 12 bit + sign
6 optoisolated protected inputs 24 Vdc PNP
4 optoisolated protected outputs 24 Vdc PNP 200 mA
Power supply 24 Vdc/18Vac

CP6V16 - 6 vibrator management

8 optoisolated protected inputs 24 Vdc PNP
8 optoisolated protected outputs 24 Vdc PNP 200 mA
port RS232C (optional)
6 opto-isolated triac outputs for vibrators management
2 analog outputs +/- 10 Vdc 11 bit + sign
Power supply 24 Vdc/18Vac

SGACQA - Load cells acquisition

nominal resolution 24 bit
unipolar input range

CPMSG0 - Stepper motor control

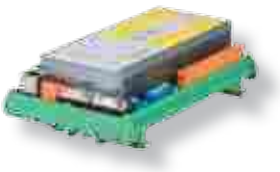
Stepper motors control and load cell acquisition

• I/O MODULES

Compact

CP32D0 - Digital I/O module

Device profile DS401 version 2.0
CANopen
16 optoisolated protected inputs 24 Vdc PNP
16 optoisolated protected outputs 24 Vdc PNP 200 mA
Serial port RS232C (optional)

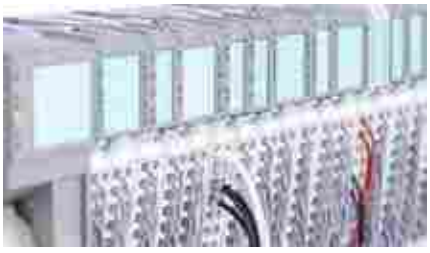


LOCAL IO - Digital I/O module

SMI port (of FCT200/FCT300)
Version 20: 12 digital input 24V PNP / 8 digital output 24V 200 mA PNP
Version 40: 24 digital input 24V PNP /16 digital output 24V 200 mA PNP

Componible

640-160-1AA11 and 640-185-1AA11:
EtherCAT or CANopen® bus coupler comes with 24 V power supply connector, final bus cover, base module



It is available a big variety of I/O modules for the management of analog and digital I/O, thermo-resistors, thermocouples ecc.

CANopen MODULES - ORDERING CODE

• Order Code: CPENCA.ab

a	0	Su Guida DIN con clip plastica
b	0	CMZ

• Order Code: CP32D0.abc

a	0	RS232 port not implemented
	1	RS232 port implemented
b	0	future expansions (BC-BUS not implemented)
c	0	screw clamp
	1	spring clamp

• Order Code: CP6V16.abc

a	0	RS232 port not implemented
	1	RS232 port implemented
b	1	BC-BUS implemented
c	0	screw clamp
	1	spring clamp

• Order Code: SGACQA.a

a	0	with guide DIN support
	1	without guide DIN support

• Order Code: CPMSG0.abcd

a	0	
b	0	
b	0	
d	0	

I/O MODULES - ORDERING CODE

COMPACT

• Order Code: LOCAL IO.abc

a	20	12 digital inputs - 8 digital output
	40	24 digital inputs - 16 digital output
b	0	Future option
c	0	Customization bit (0=CMZ)

I/O MODULES - Ordering code

• COMPONIBLE CANopen MODULES

TYPE	DESCRITPION
Bus coupler	
640-160-1AA11	TB20-C, CANopen® slave bus coupler comes with 24 V power supply connector, final bus cover, base module
640-185-1AA11	TB20-C, EtherCAT bus coupler comes with 24 V power supply connector, final bus cover, base module
Digital input modules:	
640-210-0AB01	Digital input module – DI 2 x 24 VDC
640-210-0AD01	Digital input module – DI 4 x 24 VDC
640-210-0AH01	Digital input module – DI 8 x 24 VDC
640-210-0AP21	Digital input module – DI 16 x 24 VDC
640-210-0CC01	Digital input module – DI 3 x 24 VDC, 3-wire
640-210-0CF21	Digital input module – DI 6 x 24 VDC, 3-wire
Digital Output Modules	
640-220-0AB01	Digital output module – DO 2 x 24 VDC, 500 mA
640-220-0AD01	Digital output module – DO 4 x 24 VDC, 500 mA
640-220-0AH01	Digital output module – DO 8 x 24 VDC, 500 mA
640-220-0AP21	Digital output module – DO 16 x 24 VDC, 500 mA
640-220-7AD01	Digital output module – DO 4 x 24 VDC, 700 mA, HF
640-220-7AH01	Digital output module – DO 8 x 24 VDC, 700 mA, HF
640-220-7AP21	Digital output module – DO 16 x 24 VDC, 700 mA, HF
640-220-0BB01	Digital output module – DO 2 x 24 VDC, 2 A
640-220-0BD01	Digital output module – DO 4 x 24 VDC, 2 A
Digital Mix Modules	
640-230-0AD01	Digital mix module – DIO 2 x In/2 x Out 24 VDC, 500 mA
640-230-0AH01	Digital mix module – DIO 4 x In/4 x Out 24 VDC, 500 mA
640-230-0AP21	Digital mix module – DIO 8 x Out/8 x In 24 VDC, 500 mA
Analog Input Modules	
640-250-4AB01	Analog input module – AI 2 x I, 0/4–20 mA, ±20 mA, 12 Bit
640-250-4AD01	Analog input module – AI 4 x I, 0/4–20 mA, ±20 mA, 12 Bit
640-250-7BB01	Analog input module – AI 2 x I, 0/4–20 mA, ±20 mA, Iso., 16 Bit
640-250-7BD01	Analog input module – AI 4 x I, 0/4–20 mA, ±20 mA, Iso., 16 Bit
640-252-4AB01	Analog input module – AI 2 x U, ±10 V, 0–10 V, 1–5 V, 12 Bit
640-252-4AD01	Analog input module – AI 4 x U, ±10 V, 0–10 V, 1–5 V, 12 Bit
640-252-7BB01	Analog input module – AI 2 x U, ±10 V, 0–10 V, 1–5 V, Iso., 16 Bit
640-252-7BD01	Analog input module – AI 4 x U, ±10 V, 0–10 V, 1–5 V, Iso., 16 Bit
640-252-4CB01	Analog input module – AI 2 x U, ±24 V, 0–24 V, 12 Bit
640-252-4CD01	Analog input module – AI 4 x U, ±24 V, 0–24 V, 12 Bit
640-253-4AB01	Analog input module – AI 1/2 x R, RTD, 16 Bit, 2/3/4-wire
640-253-4AD01	Analog input module – AI 2/4 x R, RTD, 16 Bit, 2/3/4-wire
640-254-4AB02	Analog input module – AI 2 x TC, Iso., 16 Bit
640-254-4AD02	Analog input module – AI 4 x TC, Iso., 16 Bit

• COMPONIBLE CANopen MODULES

TYPE	DESCRITPION
Analog Output Modules	
640-260-4AB01	Analog output module – AO 2 x I, 0/4–20 mA, 12 Bit
640-260-4AD01	Analog output module – AO 4 x I, 0/4–20 mA, 12 Bit
640-261-4AB01	Analog output module – AO 2 x U, ±10 V, 0–10 V, 1–5 V, 12 Bit
640-261-4AD01	Analog output module – AO 4 x U, ±10 V, 0–10 V, 1–5 V, 12 Bit
Function Modules	
Counters	
640-300-7AA01	Function module – 1 x counter 24 V, 500 kHz, 32 Bit
640-310-7AA01	Function module – 1 x counter 5 V (RS422), 4 MHz, 32 Bit
SSI Encoder Interface	
640-400-7AA31	Function module – 1 x SSI encoder interface
Energy Meter	
640-255-7AA21	Function module – Energy meter, 1 A
640-255-7BA21	Function module – Energy meter, 5 A
Communication Modules	
Serial Interface	
640-400-7AA31	Communication module – RS-232 serial interface
System Modules	
Power and Isolation Module	
640-710-0AA01	System module – Power and isolation module 24 VDC, 8 A
Potential Distributors	
640-730-4AD01	System module – Potential distributor 4 x 24 VDC, HF
640-720-0AH01	System module – Potential distributor 9 x 24 VDC
640-720-0BH01	System module – Potential distributor 9 x GND
640-720-0CH01	System module – Potential distributor 10 x AUX
640-720-0DH01	System module – Potential distributor 4 x 24 VDC + 4 x GND
640-720-0XH01	System module – Potential distributor 9 x free pot.
Power Module	
640-700-0AA01	System module – 24 VDC power module
Spare Parts/Accessories	
Base Modules	
640-900-9AA01	Base module, standard,14 mm-width (set of five, spare part)
640-900-9AA21	Base module, 25 mm-width (set of five, spare part)
640-900-9BA01	Base module, for power and isolation module (set of five, spare part)
640-900-9CA01	Base module, for power module or bus coupler (set of five, spare part)
Front connectors, Final Bus Cover, TB20 Label Package, Mini-USB Cable	
640-910-9AJ01	10-terminal front connector (set of five, spare part)
640-910-9AT21	20-terminal front connector (set of five, spare part)
640-920-9AA01	Final bus cover (set of five, spare part)
640-980-9AA01	TB20 label package
700-755-8VK11	Mini-USB cable
TB20 Starter Kit	
640-990-STRT2	TB20 starter kit, CANopen® Slave

HMI

• FROM 4,3” TO 15” SVGA TFT WIN CE AND EMBEDDED TOUCH COMPUTER

The PK and PT series are constituted by a wide range of touch screen terminals that meets both low budget versions for simple applications and more advanced ones, keeping a reasonable cost. They are designed to be connected in efficient way with CMZ controllers and they can comunicate with the most popular programmable controllers thanks to standard or dedicated protocols.
They support multi-languages, BMP an JPG graphics anf GIF animations.

Le serie PK e PT sono costituite da una vasta gamma di terminali touch screen, dalle versioni più economiche ma dotate di tutte le necessarie funzioni base, alle versioni più evolute, con un costo comunque ragionevole. Sono concepiti per interfacciarsi in modo efficiente con i controllori CMZ e possono comunicare con i più comuni PLC di mercato tramite protocolli standard o dedicati.
Le serie PK e PT sono multi lingue e supportano formati grafici come i formati BMP e JPG e animazioni come i formati GIF.

PK

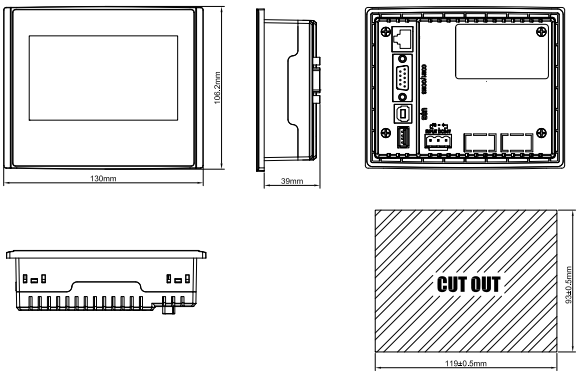
Industrial
touch panels

• PK SERIES

Entry level panels

		MMPK043-WSTS0	MMPK070-WST20	MMPK100-WST20
Display	Size	4.3" diagonal (16:9)	7" diagonal (16:9)	10,1" diagonal (16:9)
	Max Resolution	480 x 272	800 x 480	1024 x 600
	Type	TFT-LCD	TFT-LCD	TFT-LCD
	Max. Colors	65536	65536	65536
	Backlight Type	LED	LED	LED
	Backlight Life (hr)	20000	20000	20000
	Display Contrast	500	500	500
	Luminance (cd/m2)	250	250	200
	Touch Panel	4 Wire resistive Analog Touch Panel	4 Wire resistive Analog Touch Panel	4 Wire resistive Analog Touch Panel
	CPU	CPU RISC ARM 32Bit 200MHz	CPU RISC ARM 32Bit 200MHz	CPU RISC ARM 32Bit 200MHz
	Backup SRAM	128 KB	128 KB	128 KB
	Working Memory	32 MB	32 MB	32 MB
	Built-in Storage	8 MB (NOR Flash)	8 MB (NOR Flash) + 128 MB (NAND Flash)	8 MB (NOR Flash)+ 128 MB (NAND Flash)
	Real Time Clock	Yes	Yes	Yes
Communication interface	Micro-SD Slot	Yes	No	No
	USB Client	Yes (USB 2.0)	Yes (USB 2.0)	Yes (USB 2.0)
	USB Host	Yes (USB 1.1)	Yes (USB 1.1)	Yes (USB 1.1)
	Serial	COM1 RS232/RS422/RS485	COM1 RS232/RS422/RS485	COM1 RS232/RS422/RS485
		COM2 -	COM2 -	COM2 -
		COM3 RS232	COM3 RS232	COM3 RS232
	Ethernet	N.A.	N.A.	N.A.
Power	Supply Voltage	24VDC±10% Isolated	24VDC±10% Isolated	24VDC±10% Isolated
	Consumption	10W	20W	20W
	Operating Temp.	0°~50°	0°~50°	0°~50°
Environment	Relative Humidity	10%~90%	10%~90%	10%~90%
	Ingress Protection	IP65	IP65	IP65
	Cooling	Natural Cooling	Natural Cooling	Natural Cooling
Dimension	Dimension WxHxD (mm)	130.0 x 106.2 x 39	204.4 x 151.0 x 33	270,1 x 212,1 x 42,5
	Cutout Dimension WxH (mm)	119.0 x 93.0	191.5 x 138.0	259,5 x 201,5
	Net Weight (kg)	0.35 KG	0.65 KG	1,1 KG

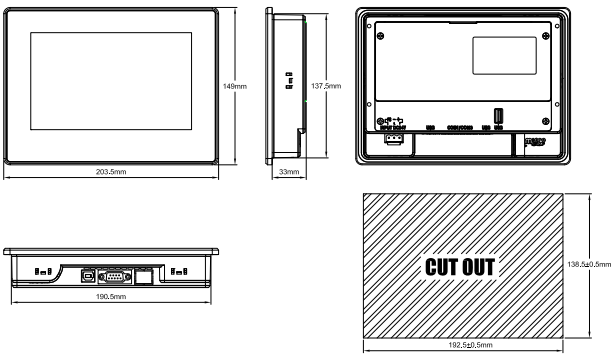
• PK SERIES



MMPK043-WST

Dimension WxHxD: 130,0 x 106,2 x 39 mm

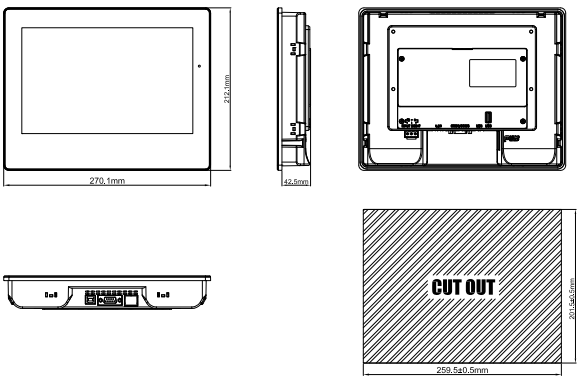
Cut out dimension AxB: 119,0 x 93,0 mm



MMPK070-WST

Dimension WxHxD: 203,5 x149,0 X 33 mm

Cut out dimension AxB: 192,0 x138,5 mm



MMPK100-WST

Dimension WxHxD: 270,1x212,1 x 42,5mm

Cut out dimension AxB: 259,5 x201,5 mm

• PT SERIES

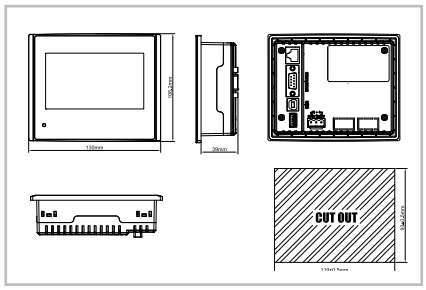
Premium level panels

		MMPT043WST4B	MMPT056-AST1BF1R1	MMPT070-WST4B
Display	Size	4.3" diagonal (16:9)	5,6" diagonal (4:3)	7" diagonal (16:9)
	Max Resolution	480 x 272	320 x 234	800 x 480
	Type	TFT-LCD	TFT-LCD	TFT-LCD
	Max. Colors	65536	65536	65536
	Backlight Type	LED	LED	LED
	Backlight Life (hr)	20000	20000	20000
	Display Contrast	500	300	500
	Luminance (cd/m2)	400	330	300
	Touch Panel	4 Wire resistive Analog Touch Panel	4 Wire resistive Analog Touch Panel	4 Wire resistive Analog Touch Panel
	CPU	CPU RISC ARM 32Bit 200MHz	CPU RISC ARM 32Bit 200MHz	CPU RISC ARM 32Bit 200MHz
	Backup SRAM	128 KB	128 KB	128 KB
	Working Memory	32 MB	32 MB	64 MB
	Built-in Storage	8 MB (NOR Flash) + 128 MB (NAND Flash)	8 MB (NOR Flash) + 128 MB (NAND Flash)	8 MB (NOR Flash) + 128 MB (NAND Flash)
	Real Time Clock	Yes	Yes	Yes
Communication Interface	Micro-SD Slot	Yes	Yes	Yes
	USB Client	Yes (USB 2.0)	Yes (USB 2.0)	Yes (USB 2.0)
	USB Host	Yes (USB 1.1)	Yes (USB 1.1)	Yes (USB 1.1)
	Serial	COM1 RS232/RS422/RS485	COM1 RS232/RS422/RS485	COM1 RS232/RS422/RS485
		COM 2 RS232/RS485	COM2 RS232/RS485	COM2 RS232/RS485
		COM3 RS232 only (opt: RS485 only)	COM3 RS232 only (opt: RS485 only)	COM3 RS232 only (opt: RS485 only)
	Ethernet	Yes	N.A.	Yes (10/100 Mbps)
Power	Supply Voltage	24VDC±10% Isolated	24VDC±10% Isolated	24VDC±10% Isolated
	Consumption	10W	13W	20W
	Operating Temp.	-10°~60°	-10°~60°	-10°~60°
Evironment	Relative Humidity	10%~90%	10%~90%	10%~90%
	Ingress Protection	IP66	IP66	IP66
	Cooling	Natural Cooling	Natural Cooling	Natural Cooling
Dimension	Dimension WxHxD (mm)	130.0 x 106.2 x 39	188.0 x 143.3 x 36.0	188.0 x 143.3 x 36.0
	Cutout Dimension WxH (mm)	119.0 x 93.0	175.0 x 132.5	175.0 x 132.6
	Net Weight (kg)	0.35	0.59	0,6

• PT SERIES

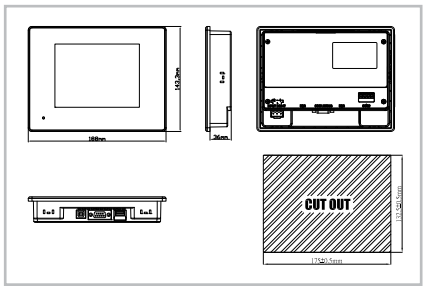
Premium level panels

		MMPT100-WST4B	MMPT104-TST4B	MMPT121-TST4B	MMPT150XSD4B
Display	Size	10,1" diagonal (16:9)	10,4" diagonal (4:3)	12,1" digonal (4:3)	15" diagonal (4:3)
	Max Resolution	1024 x 600	800x600	800x600	1024 x 768
	Type	TFT-LCD	TFT-LCD	TFT-LCD	TFT-LCD
	Max. Colors	65536	65536	65536	65536
	Backlight Type	LED	LED	LED	LED
	Backlight Life (hr)	20000	20000	50000	50000
	Display Contrast	500	400	700	700
	Luminance (cd/m2)	180	400	450	350
	Touch Panel	4 Wire resistive Analog Touch Panel	4 Wire resistive Analog Touch Panel	4 Wire resistive Analog Touch Panel	5 Wire resistive Analog Touch Panel
	CPU	CPU RISC ARM 32Bit 200MHz	CPU RISC ARM 32Bit 200MHz	RISC ARM 32Bit 200MHz	CPU RISC ARM 32Bit 200MHz
	Backup SRAM	128 KB	128 KB	128 KB	128 KB
	Working Memory	64 MB	64 MB	64MB	64 MB
	Built-in Storage	8 MB (NOR Flash) + 128 MB (NAND Flash)	8MB+128MB (NAND FLASH)	8MB+128MB (NAND FLASH)	8 MB (NOR Flash) + 128 MB (NAND Flash)
	Real Time Clock	Yes	Yes	Yes	Yes
Communication Interface	Micro-SD Slot	Yes	yes	Yes	Yes
	USB Client	Yes (USB 2.0)	Yes (USB 2.0)	Yes (USB 2.0)	Yes (USB 2.0)
	USB Host	Yes (USB 1.1)	Yes (USB 1.1)	Yes (USB 1.1)	Yes (USB 1.1)
	Serial	COM1 RS232/RS422/RS485	COM1 RS232/RS422/RS485	COM1 RS232/RS422/RS485	COM1 RS232/RS422/RS485
		COM 2 RS232/RS485	COM 2 RS232/RS485	COM2 A-RS422/RS485 B-RS232/485-C-RS232 with RTS&CTS	COM2 RS232/RS485
		COM3 RS232 (optional: RS485 only)	COM3 RS232 (optional: RS485 only)	COM3 RS232 (optional RS485)	COM3 RS232 (optional: RS485 only)
	Ethernet	Yes (10/100 Mbps)	Yes (10/100 Mbps)	YES	Yes (10/100 Mbps)
Power	Supply Voltage	24VDC±10% Isolated	24VDC±10% Isolated	24VDC±10% Isolated	24VDC±10% Isolated
	Consumption	20W	20W	20W	25W
Evironment	Operating Temp.	-10°~60°	-10°~60°	-10°~60°	-10°~60°
	Relative Humidity	10%~90%	10%~90%	10%~90%	10%~90%
	Ingress Protection	IP66	IP66	IP66	IP66
	Cooling	Natural Cooling	Natural Cooling	Natural cooling	Natural Cooling
Dimensions	Dimension WxHxD (mm)	270,1 x 212,1 x 42,5	270,1 x 212,1 x 42,5	335,4x245,9x54,8	399,1 x 297,6 x 55
	Cutout Dimension WxH (mm)	259.5 x 201.5	259.5 x 201.5	301,5x228,0	384,5 x 283,0
	Net Weight (kg)	1,2	1,2	1,9	2,68



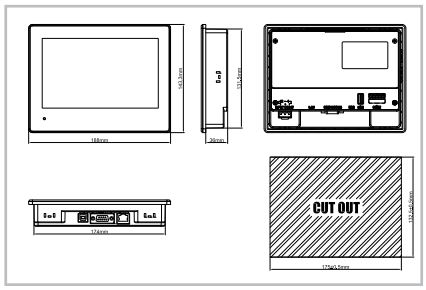
MMPT043WST4B

Dimension WxHxD: 130,0 x 106,2 x 39 mm
Cut out dimension AxB: 119,0 x 93,0 mm



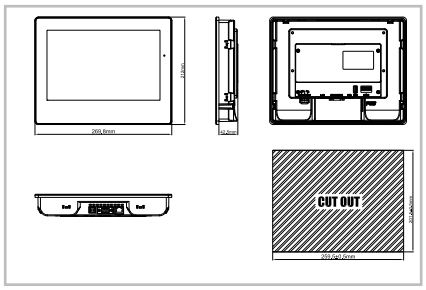
MMPT056-AST1BF1R1

Dimension WxHxD: 188.0 x 143.3 x 36.1 mm
Cut out dimension AxB: 175.0 x 132.5 mm



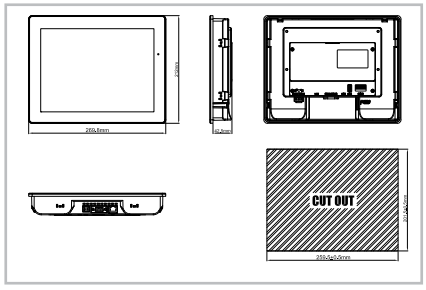
MMPT070-WST4B

Dimension WxHxD: 188,0 x 143,3 x 36.0 mm
Cut out dimension AxB: 175.0 x 132.5 mm



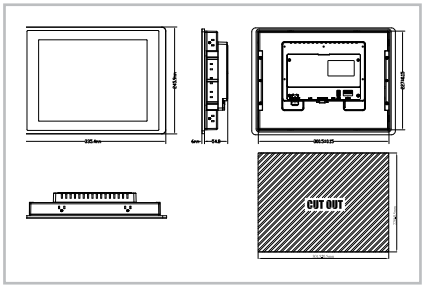
MMPT100-WST4B

Dimension WxHxD: 270,1 x 212,1 x 42.5 mm
Cut out dimension AxB: 259.5x 201.5 mm



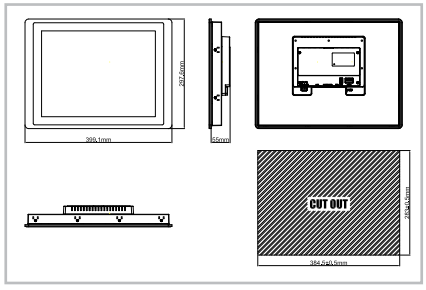
MMPT104-TST4B

Dimension WxHxD: 270,1 x 212,1 x 42.5 mm
Cut out dimension AxB: 259.5x 201.5 mm



MMPT121-TST4B

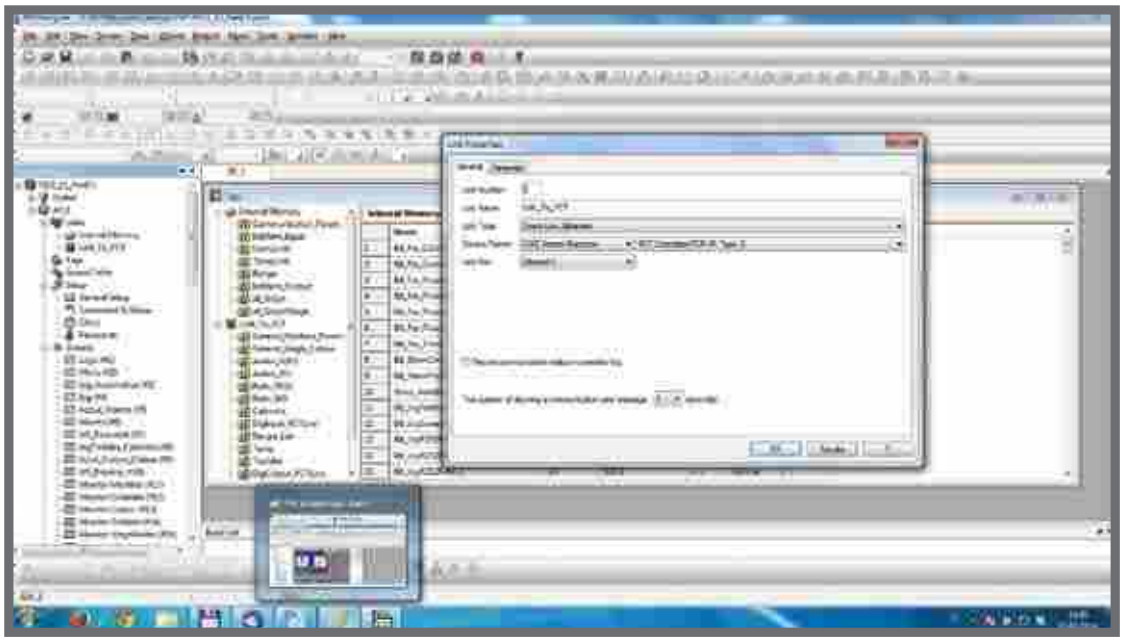
Dimension WxHxD: 335,4 x 245,9 x 54,8 mm
Cut out dimension AxB: 301,5 x 228,0 mm



MMPT150XSD4B

Dimension WxHxD: 399,1 x 297,6 x 55 mm
Cut out dimension AxB: 384,5 x 283,0 mm

PANEL MASTER DESIGN / PANEL EXPRESS



The PM Designer is a simple and intuitive development environment that, without the need of any other software instrument, allows to realize the GUI (Graphical User Interface) and to program the functionalities of the CMZ operator panels. This single environment allows the programming and the download of the applications in all the HMI models that the CMZ provides (PK and PT series).
In addition to the PM Designer (HMI based) we can provide the Panel Express software, that's based on a PC platform.

Il PM Designer è un ambiente di sviluppo gratuito semplice ed intuitivo che permette, senza la necessità di altri strumenti software, di realizzare l'interfaccia grafica e programmare le funzionalità dei pannelli operatore CMZ. Lo stesso ambiente permette la programmazione e il download delle applicazioni su tutti modelli che la CMZ propone (versione PK e PT).
Oltre al PM Designer (HMI based) possiamo fornire il software Panel Express basato su piattaforma PC.

• ORDERING CODE

Panel Master Designer - CMZ HMI based									
SW450902: Panel designer 2.0									
PanelExpress - PC based									
Software	Supplier Code	Type of License		I/O Tags		Link Number		Customized Code	Optional Feauters
P2W	STP	A	Windows Online	03	300	016	16-links	14	XXXXXX
		C	Windows USB Dongle	15	1500				
				30	3000				
				50	5000				

Solutions for OEM industry

Soluzioni per l'industria OEM

The manufacturers of automatic machines that want to achieve greater efficiency, increase profitability and reduce costs, take advantage of advanced automation processes. In this context, CMZ, thanks to the continuous improvements from the point of view of the hardware that the software tools, provides motion control solutions that can be used in many fields.
Thanks to the long collaboration with its customers is now able to know in depth the needs and characteristics of a wide range of industries sector making its customer reaching competitive advantages. In addition to providing software tools to facilitate the implementation of typical applications, such as base libraries and application, bases its strength on the study and implementation of ad hoc solutions by developing custom software.

Le aziende produttrici di macchine automatiche che vogliono ottenere maggiore efficienza, aumentare la redditività e contenere i costi, si avvalgono di processi di automazione avanzati. In questo contesto CMZ, grazie anche ai continui miglioramenti sia dal punto di vista dei prodotti hardware che degli strumenti software, offre soluzioni motion control utilizzabili in molteplici settori.
Grazie alle lunghe collaborazioni con i propri clienti è oggi in grado di conoscere approfonditamente esigenze e caratteristiche tipiche di una vasta gamma di settori industriali, facendo conseguire vantaggi concorrenziali determinanti ai propri clienti. Oltre a fornire strumenti software per facilitare la realizzazione di applicazioni tipiche, come le librerie di base e applicative, fonda la propria forza sullo studio e realizzazione di soluzioni ad hoc sviluppando software custom.


packaging


beverage


dosing
weighing


flying
shear
applications


printing


converting


textile


glass


ISO
interpreter
(G-code)


custom
products

packaging

The 30 years of experience developed in the packaging industry have led to advanced knowledge in the construction of machines such as:

- Horizontal packaging machine (HFFS)
- Vertical packaging machine (VFFS)
- Loading systems and smart belts
- End line

The traditional approach in the implementation of the applications is the development of applications using a good development environment, motion libraries, specific libraries and application programs to customize. The libraries of functions that the programmer can use as part of its application, allow a great freedom to customize the program and can be easily integrated with other custom features. The flexibility of the software allows you to manage in an easy manner many of the characteristics normally found in the most modern machines.

The acquired knowledge quickly allowed to CMZ to push beyond the traditional approach described above by proposing in parallel real-configurable applications that provide all the characteristics of a machine and a number of advantages:

- Reduction of commissioning and time to market
- Reduced investment by the manufacturer in the development of the software
- It is not necessary to have a programmer in commissioning
- Ability for the customer to directly change the mode of operation

I 30 anni di esperienza sviluppati nel settore del packaging hanno portato ad una conoscenza avanzata nella realizzazione di macchine tipo:

- Confezionatrici orizzontali
- Confezionatrici verticali
- Sistemi di carico e smart belt (sistemi di fasatura)
- Fine linea

L'approccio tradizionale nella realizzazione delle applicazioni consiste nello sviluppo di applicativi tramite un evoluto ambiente di sviluppo, librerie di motion, librerie specifiche e programmi applicativi da personalizzare. Le librerie di funzioni che il programmatore può utilizzare nell'ambito del suo applicativo, consentono una gran libertà per la personalizzazione del programma e possono essere facilmente integrate con altre funzionalità custom. La flessibilità del software permette di gestire in modo agevole molte delle particolarità che normalmente si trovano nelle più moderne macchine.

Le conoscenze acquisite hanno poi permesso a CMZ di spingersi oltre l'approccio tradizionale sopradescritto proponendo parallelamente dei veri e propri applicativi configurabili che prevedono tutte le caratteristiche tipiche di una macchina e numerosi vantaggi:

- Riduzione dei tempi di messa in servizio e di immissione della macchina nel mercato
- Riduzione dell'investimento da parte del costruttore nello sviluppo del software
- Non è necessaria la presenza di un programmatore nella messa in servizio
- Possibilità per il cliente di modificare direttamente le modalità di funzionamento

beverage

CMZ has pursued a long line of specialization in the beverage sector, which has many different needs in the different phases of production by focusing in particular on machines such as:

- Filling machine
- Labeling machine
- Capping machine
- Blowing machine

There are many hardware solutions that CMZ shall make available to the customer but the most innovative and used in this area relates to the movement system based on servo motors with integrated electronics controlled via fieldbus (CANopen, EtherCAT) from a master controller of the series FCT with the aim to minimize the electrical wiring. Excellent companies in the beverage field use the integrated solution (centralized or decentralized) for their applications.

CMZ ha perseguito una lunga linea di specializzazione nel settore del beverage, che presenta numerose e diversificate esigenze nelle diverse fasi produttive, focalizzandosi in particolare in macchine quali:

- Riempitrici
- Etichettatrici
- Tappatrici
- Soffiatrici

Molteplici sono le soluzioni hardware che CMZ mette a disposizioni del cliente ma la più innovativa ed usata in questo settore riguarda il sistema di movimentazione basato su servomotori con elettronica integrata controllati attraverso un bus di campo (CANopen, EtherCAT) da un dispositivo master della serie FCT con lo scopo di ridurre al minimo i cablaggi elettrici. Aziende di eccellenza nel campo del Beverage utilizzano la soluzione integrata (centralizzata o decentralizzata) per le loro applicazioni.

dosing
weighing

CMZ provides a full range of products for weighing and dosing to meet with their own software and hardware solutions the different needs in the field of dosing. Also for this sector CMZ offers, in addition to custom solutions, a real configurable applicaticative software that includes all the characteristics typical of a machine. In particular, it is focused on machines like:

Multihead weighers, offering a complete solution for the management of multi head weighers equipped with buckets with pneumatic or stepper motor actuators configurable from 8 to 24 heads.

Linear weighers, modular architecture with optimization of hardware resources. Possible configurations with single or double basket.

CMZ fornisce una gamma completa di prodotti per sistemi di pesatura e dosaggio cercando di rispondere con le proprie soluzioni software e hardware alle diverse esigenze nel campo della dosatura. Anche per questo settore CMZ propone, oltre a soluzioni personalizzate, un vero e proprio applicativo configurabile che prevede tutte le caratteristiche tipiche di una macchina.
In particolare si è focalizzata su macchine del tipo:

Pesatrici multiteste, proponendo una soluzione completa per la loro gestione con cestelli pneumatici o motorizzati (stepper) che può essere configurata da 8 a 24 teste.

Pesatrici lineari, dall'architettura modulare con ottimizzazione delle risorse hardware. Possibili configurazioni con cestello singolo o doppio.

flying
shear
applications

A common functionality required by many automatic machines is the possibility to do same actions (cutting, punching or other) on a continuous material in movement (metal sheet, cartoon, etc) without stopping it. This functionality can be done in two ways:

- Cut with translating carriage
- Cut with rotating shear

There are many particularities and options in this basic function and CMZ for this application offers a big variety of solutions, hardware and software. For the software point of view CMZ offers a specific library for standard applications, instead for special applications the electronic cam library is normally used. The controller that executes the flying shear function , can manage other axes, allowing the implementation of complex machines in integrated way.

Spesso, nelle macchine automatiche si devono eseguire delle operazioni (taglio, ma anche timbratura, punzonatura ecc.) su un materiale continuo in movimento (profilato, foglio di lamiera, cartone, legno ecc.) senza interromperne l'avanzamento. Questo si può ottenere in due modi:

- Taglio con carro inseguitore
- Taglio con cesoia volante rotativa

Esistono molte particolarità ed opzioni su queste modalità di funzionamento base e CMZ per queste applicazioni offre una grande varietà di soluzioni hardware e software. Dal punto di vista software CMZ è in grado di offrire una libreria taglio al volo per le applicazioni standard, mentre per le applicazioni particolari viene normalmente usata la libreria camme elettroniche. Lo stesso controllore che esegue la funzione di taglio al volo, può gestire altri assi o altre periferiche permettendo di realizzare macchine complesse in modo integrato.

printing

The solutions for printing have very high accuracy requirements, of waste reduction with maximum productivity, quality and flexibility. CMZ has experience in two components present in printing machinery:

- Synchronization of the printing cylinders
- Registration control of the printing cylinders

It offers brushless and stepless solutions (in integrated version or not) that with the accuracy in the axes control and with the motion libraries, allowing the customer to develop high-performance machines and quality.

Le soluzioni per la stampa hanno esigenze di precisione molto elevate, di riduzione degli sprechi con la massima produttività, di qualità e flessibilità. CMZ ha esperienza in due componenti presenti nelle macchine da stampa:

- Sincronizzazione dei cilindri di stampa
- Movimento di registro dei cilindri di stampa

Propone soluzioni brushless e stepless (in versione integrata e non) che insieme all'accuratezza nel controllo degli assi e alle librerie di motion, permettono al cliente di sviluppare macchine performanti e di qualità.

converting

Paper converting industry is a highly specialized and dynamic industry sector in which the market demands to find innovative solutions, efficient and environmentally sound. CMZ has gained considerable experience in the automation of the following types of machines:

- Interfolders
- Rewinders
- Cutting line

Il paper converting è un settore industriale altamente specializzato e dinamico in cui il mercato esige di individuare soluzioni innovative, efficienti ed ecologiche. CMZ ha conseguito una notevole esperienza nell'automazione delle seguenti tipologie di macchine:

- Interfogliatrici
- Ribobinatrici
- Troncatore

textile

One of the first industries in which CMZ showed themselves adept since its foundation is the creation of automatic solutions for the textile industry, in particular in:

- Machines for the treatment of synthetic and natural fibers
- Crochet and jacquard machines
- Machines for the treatment of the fiber (combing machines, draw frame machines)
- Sewing/embroidery machines

The competence of CMZ in this area has also led to the creation of custom products, advanced technologies that have enabled our clients to respond appropriately to the needs of the market.

Uno dei primi settori industriali in cui CMZ si è cimentata fin dalla sua nascita è la realizzazione di soluzioni automatiche per l'industria tessile, in particolare per:

- Macchine per il trattamento delle fibre sintetiche e naturali
- Macchine Crochet e jacquard
- Macchine da stiro per il trattamento della fibra (pettinatrici, stiro, stiro-riunitrici)
- Macchine cucitrici/ricamatrici

La competenza di CMZ in questo settore ha portato anche alla realizzazione di prodotti custom di tecnologie all'avanguardia che hanno consentito ai nostri clienti di rispondere in modo adeguato alle esigenze del mercato.

glass

CMZ has developed applications in the field of automatic machines for the working glass, in particular for machines:

- Machines for threading
- Sealing machines
- Edgers machines
- Coating remover
- Cutting unit

For the realization of these machines has been used the interpreter ISO which allowed great flexibility in adapting to the individual needs.

CMZ ha sviluppato applicazioni nell'ambito delle macchine automatiche per la lavorazione del vetro, in particolare per macchine:

- Sfilettatrici
- Sigillatrici
- Molatrici
- Sbordatrici
- Taglio

Per la realizzazione di queste macchine è stato utilizzato l'interprete ISO che ha consentito una grande flessibilità nell'adattarsi alle singole esigenze.

ISO interpreter (G-code)

The ISO applications are used every time there is a need to describe in flexible way an axis trajectory, and this need is transversal and present in quite all automation fields. CMZ has therefore developed a software for the interpretation of the G-CODE file. The proposed solution is based on a IEC library called MAC ISO for control systems of the FCT family coupled to two solutions of movement: brushless and stepless. The library can be easily customized by integrating its functions through the environment IEC61131. It 'also available a standard software interface on PC.

Le applicazioni ISO vengono utilizzate tutte le volte che c'è la necessità di descrivere in modo flessibile una traiettoria di assi e questa esigenza è trasversale e presente un po' in tutti i settori dell'automazione. CMZ ha perciò sviluppato un software per l'interpretazione di file G-CODE. La soluzione proposta si basa su una libreria IEC denominata MAC ISO per sistemi di controllo della famiglia FCT abbinati a due soluzioni di movimentazione, brushless e stepless. La libreria è facilmente personalizzabile integrando le sue funzioni tramite l'ambiente IEC61131. È disponibile anche un software di interfaccia standard su PC.

custom products

With its 30 years experience in the electronics sector, CMZ, which is also a registered Research Laboratory, offers an electronic equipment and board design and engineering service to customer specifications. Experience in different sectors of industrial automation and electronics in general enables CMZ to cooperate fully with the customer in defining the actual specifications.
The company also produces what it has designed using the same processes and quality standards of standard products.

SOME IMPLEMENTATIONS:

- Stepping controls with microstep operation interfaced in step and direction and field buses
- Dedicated controllers for managing metal working machines
- Dedicated controllers in the textile sector
- Batching systems
- Hydraulic axis control cards
- Access control
- Electro-medical applications

Sfruttando l'esperienza trentennale nel settore elettronico, CMZ, anche in veste di Laboratorio di Ricerca, può offrire un servizio di progettazione ed ingegnerizzazione di schede ed apparecchiature elettroniche su specifica del cliente. Avendo operato nei più svariati settori dell'automazione industriale ed in generale dell'elettronica, può fattivamente collaborare con il cliente nella definizione delle specifiche stesse. È inoltre in grado di produrre quanto progettato utilizzando i processi e gli standard qualitativi dei prodotti di serie.

ALCUNE REALIZZAZIONI:

- *Azionamenti passo-passo con funzionamento a micropassi ed interfacciati in impulso-direzione e bus di campo*
- *Controlli dedicati per gestire macchine per la lavorazione del metallo*
- *Controlli dedicati nel settore tessile*
- *Sistemi di dosatura*
- *Schede di controllo assi idraulici*
- *Controllo accessi*
- *Applicazioni elettromedicali*

NEW ACTIVITY VISION

Vision applications have become routine in the world of automation where they meet these requirements:

• recognize shapes and drawings
• determine the position and orientation of an object
• measure the size of an object
• measure distances between objects
• read texts or other encodings

All this must be done in foreseeable time because vision and controlled process control interact in “real time”.

CMZ is able to design and supply vision systems and interfacing them with their controllers, or controllers of the market. CMZ is able to study and implement the lighting system that is the most important element for the quality of results.

For the vision uses market devices or designed specifically looking for the most efficient solution in terms of cost and performance.

Le applicazioni della visione artificiale sono diventate routine nel mondo dell’automazione dove si incontrano queste esigenze:

• riconoscere forme e disegni
• determinare la posizione e l’orientamento di un oggetto
• verificare una lavorazione
• misurare la dimensione di un oggetto
• misurare le distanze tra oggetti
• leggere testi o altre codifiche

Tutto questo deve essere fatto in tempi prevedibili in quanto visione e processo da controllare interagiscono in “real time”.

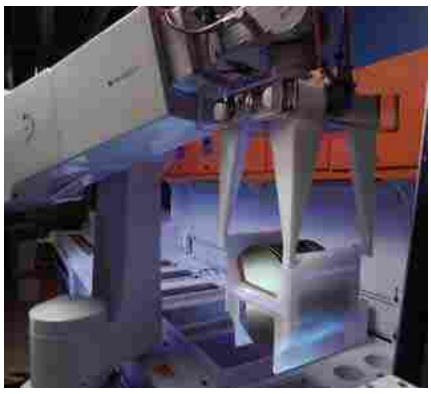
CMZ è in grado di progettare e fornire sistemi di visione ed interfacciarli con i propri controllori o con controllori di mercato. È in grado di studiare e realizzare il sistema di illuminazione che rappresenta l’elemento più importante per la bontà dei risultati.

Per la visione utilizza dispositivi di mercato o progettati ad hoc cercando la soluzione più efficiente in termini di costi e performance.

SOME TYPICAL APPLICATIONS ARE:

- robot pick and place
- labelling
- sort sign up of objects according to shape, color, etc.
- testing the quality of a product
- identification of the defects of a material
- identification of the path of a processing

- robot pick and place
- etichettatura
- smistamento di oggetti a seconda di forma, colore, ecc.
- test della qualità di un prodotto a fine lavorazione
- individuazione dei difetti di un materiale
- individuazione del percorso di una lavorazione






CMZ

Company profile
Ritratto aziendale



- HISTORY
- STAFF
- SERVICE NETWORK AND DISTRIBUTION
- BUSINESS PARTNER CMZ
- TRAINING IN CMZ
- MARKETING COMMUNICATION

CMZ Sistemi Elettronici has been designing and making programmable controllers for industrial automation since 1976.

CMZ Sistemi Elettronici has been designing and making programmable controllers for industrial automation since 1976.
CMZ today offers a complete range of products that allow to realize configuration with every type of complexity suitable for every specific need.
The range includes IEC61131 axis controller with integrated PLC, HMI, drives and motors in integrated or traditional version, I/O modules Field BUS have been thoroughly researched and all CMZ systems envisage the use of communication buses, such as CANopen and EtherCAT.
In addition to its standard systems CMZ develops dedicated designs, being certificated as a Research Laboratory for this purpose. An international sales network ensures full service not only in Italy but also abroad.
Years of experience in the sector have allowed axis control methods to be refined, so some dedicated software packages have been created for certain special applications and for some sectors real-configurable applications that provide all the characteristics of a machine.

Dal 1976 CMZ Sistemi Elettronici progetta e costruisce controllori programmabili dedicati all'automazione industriale.

Dal 1976 CMZ Sistemi Elettronici progetta e costruisce controllori programmabili dedicati all'automazione industriale.
Oggi CMZ è in grado di offrire una completa gamma di prodotti che permettono di realizzare configurazioni di ogni complessità, adattate alla specifica esigenza del cliente.
La gamma prevede controllori programmabili secondo lo standard IEC61131, terminali, azionamenti e motori in versione integrata e tradizionale, moduli I/O. Grande attenzione è stata dedicata alla ricerca sui BUS di campo, infatti tutti i sistemi CMZ prevedono l'utilizzo di bus di comunicazione, come ad esempio CANopen ed EtherCAT.
Oltre a produrre sistemi standard, CMZ è organizzata per sviluppare progetti dedicati, essendo a questo proposito certificata come Laboratorio di Ricerca. L'organizzazione di una rete commerciale internazionale, è garanzia di un servizio pre e post vendita non solo in Italia ma anche all'estero.
L'esperienza pluriennale maturata nel settore ha permesso di affinare le modalità del controllo assi, arrivando a definire per alcune applicazioni particolari dei pacchetti software dedicati e per alcuni settori dei veri e propri applicativi configurabili che prevedono tutte le caratteristiche tipiche di una macchina.



• STAFF

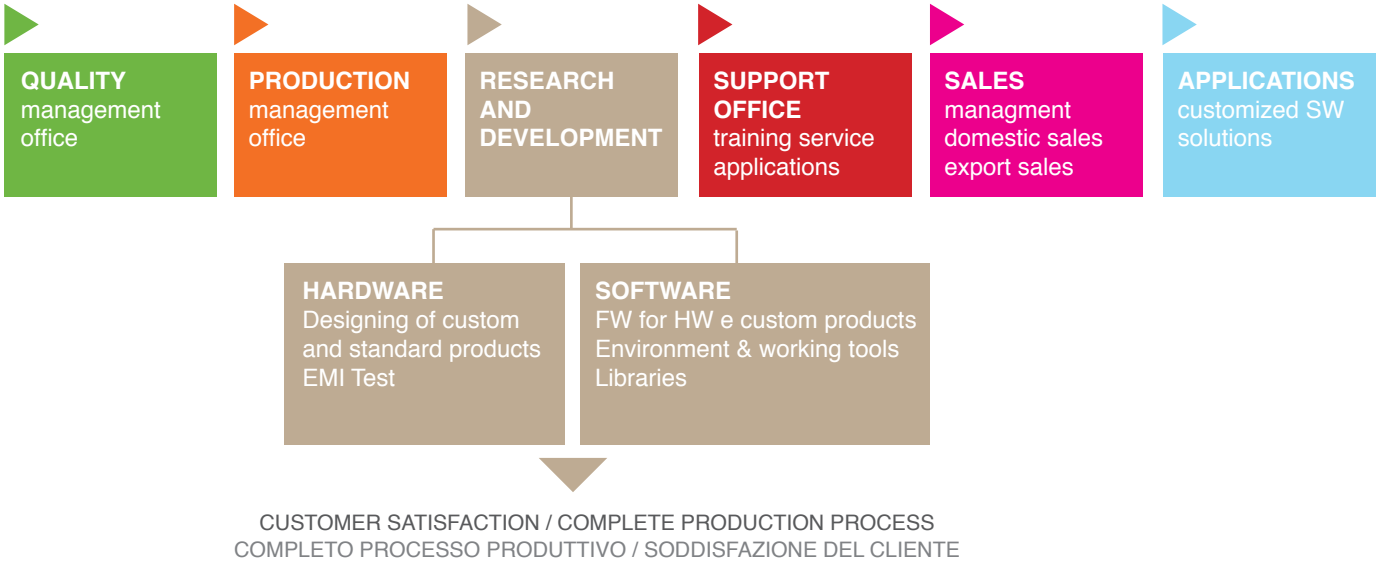
A GREAT STAFF

Since 2000 CMZ, that until then has had an essentially horizontal, technical department, has organized in several offices to answer in a better way to the specializations the market needs.
The company has structured itself in more than one level, making better its competitiveness.
The company avails itself of highly qualified and experienced staff, currently employs 70 employees.

UN GRANDE STAFF

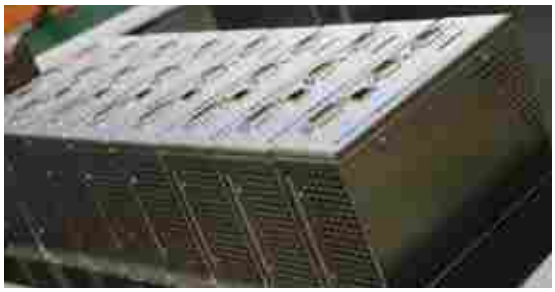
A partire dal 2000 CMZ, che fino allora aveva avuto un reparto tecnico sostanzialmente “orizzontale”, si è organizzata in uffici per rispondere meglio alle esigenze di specializzazione che il mercato cominciava a richiedere. L’azienda si è così strutturata su più livelli migliorando la sua competitività. L’azienda si avvale di personale altamente qualificato ed esperto, attualmente impiega 70 dipendenti.

ACTIVITY ORGANIZATION



CMZ

Company profile
Ritratto aziendale



• SERVICE NETWORK AND DISTRIBUTION

EUROPA

Belgium
BEDELEC
Kruishoek 24
8710 Ooigem
Tel.: +32 56 67 10 50
Fax: +32 56 66 57 24
info@bedelec.be
www.bedelec.be

France
A2V s.a.
19 rue de Clairefontaine
78120 RAMBOUILLET
Tel: 01.61.08.62.10
Fax: 01.34.83.97.38
a2v@a2v.fr
www.a2v.fr

Sweden
SERVOTRONIC AB
BOX 175
S-73124 KÖPING
Tel: +46 221 13760
Fax: +46 221 19542
info@servotronic.se
www.servotronic.se

The Netherlands
ELTREX MOTION B.V.
Postbus 6852
4802 HW BREDA
Phone: +31 (0)76 789 00 30
Fax: +31 (0)76 789 00 39
info@eltrex-motion.com

Spain
INTRA AUTOMATION S.L.
c/. Alabau, 20 (Horno Alcedo)
46026 VALENCIA
Tel: +34 96 3961008
Fax: +34 96 3961018
comercial@intraautomationsl.com
www.intraautomationsl.com

United Kingdom
ADBRO CONTROL LIMITED
Unit 42 Centerprise House
New Greenham Park
Newbury, Berkshire
RG19 6H
England
Tel: +44 1635 582126
Fax: +44 870 0525539
paul.admans@adbro.co.uk
www.adbro.co.uk

ASIA

India
INTEGRATED DRIVE SYSTEMS PVT. LTD.
170, Raja Industrial Estate,
P.K. Marg, Mulund (W),
Mumbai - 400 080, India
Tel: +91 (22) 67974757 / 67974758
Fax: +91 (22) 25684975
sales@integratedindia.com
www.integratedindia.com

Singapore
NETWELL SYSTEMS PTE LTD
No. 60, Kaki Bukit Place,
#07-03, Eunos Techpark
Singapore 415979
Tel: (65) 67285417
Fax: (65) 67543844
contact@netwell-systems.com
www.netwell-systems.com

AMERICA DEL NORD

México
A+Z AUTOMATIZACIÓN
Cenit 1204 Colonia Jardines del Bosque
Guadalajara, Jalisco
+52 (33)3121-1740
+52(33)3121-2161
ventas@azautomation.net
www.azautomation.net

AMERICA DEL SUD

Brazil
THEMA
Rua Manoel Alves Garcia,130
Jd. São Luiz
CEP 06618-010
Jandira - SP
Tel: +55 11 4789.8299
neto@thema-motores.com.br
www.thema-motores.com.br

MEDIO ORIENTE

Turkey
ARGETA YAZILIM ENDÜSTRİYEL OTOMASYON
Yenişehir Mah. Barajyolu Cad.
Tem Yanyolu
No: 21/3
ATAŞEHİR, ISTANBUL
Tel: +90-216-548 1137-38-39
Fax: +90-216-548 1139
info@argeta.net
www.argeta.net




• BUSINESS PARTNER CMZ

CMZ Business Partner

CMZ SISTEMI ELETTRONICI

To be a CMZ Business Partner means having the opportunity to play an important role in the world automation field . CMZ provides a great opportunity to all distributors, installers and system integrators who have decided to qualify and specialize the way they do business and work, like us, with the main purpose to protect customer when purchases a solution or of a product, providing advice and primary level assistance and a network of distributors that can ensure the correct use of our systems. For CMZ this means to undertake a program of protection for all customers, that thanks to this philosophy, can count on a network tha can offer a technical support service with products and suitable accessories.
Our partners are familiar with our hardware and software products and know how to recommend the right solution based on the real needs of the customer.

What we can offer:
CMZ is able to offer a unique range of exclusiveand performing products. Our working philosophy in making the product is translated into a great passion and attention to every detail and development of a superior quality product that makes a difference in the choice compared to many products on the market and ensures a simple and accurate installation enhancing and maintaining its efficiency over time.

Essere un Business Partner CMZ significa avere l'opportunità di ricoprire un ruolo importante nel mondo dell'automazione. CMZ offre una grande opportunità a tutti i distributori, installatori e system integrator che hanno deciso di qualificare e specializzare il loro modo di fare azienda e che come noi, lavorano con lo scopo principale di tutelare il cliente nel momento dell'acquisto di una soluzione o di un prodotto. Questo per CMZ significa avviare un programma di tutela per tutti i clienti, che grazie a questa filosofia, possono contare su una rete in grado di offrire un servizio di supporto tecnico con prodotti e accessori adatti.
I nostri partners conoscono bene i nostri prodotti HW e SW e sanno consigliare la giusta soluzione in base alle reali esigenze del cliente.

Cosa possiamo offrire:
CMZ è in grado di offrire una gamma unica di prodotti esclusivi e performanti. La nostra filosofia di lavoro nel fare il prodotto si traduce in una grande passione e cura per ogni singolo particolare e nello sviluppo di un prodotto di qualità superiore che faccia la differenza al momento della scelta rispetto ai molti prodotti presenti sul mercato e che garantisca una semplice e corretta installazione valorizzando e conservando la sua efficienza nel tempo.

• TRAINING IN CMZ

Training has always been an important strategic moment of dialogue for the growth, promotion and proper use of our products in the market. CMZ organizes courses at various levels and the thematic categories mainly at its headquarters in synergy with the needs expressed by customers.
The training sessions are intended not only to customers but also to distributors, installers, system integrators, in order to promote updating and professionalism of its employees to ensure top-level technical assistance.

La formazione è da sempre un importante momento di dialogo strategico per la crescita, la promozione e il corretto utilizzo dei nostri prodotti nel mercato. CMZ organizza corsi di vari livelli e categorie tematiche principalmente presso la propria sede in sinergia con le esigenze raccolte dai clienti.
Gli incontri formativi sono rivolti non solo ai clienti ma anche ai distributori, installatori, system integrator, nell'ottica di favorire l'aggiornamento e la professionalità dei propri collaboratori per garantire un'assistenza tecnica di primo livello.

• MARKETING COMMUNICATION

CMZ makes available to its customers and sales force its coordinated business kit consists of:

> Catalog
> Company profile
> Case Study
> Price list
> Web site

as a complement to this, you can refer to our web site where customers can draw on all the information needed in real time and in our download area he can download our development environments, software tools, updates, manuals and so on just in a click.
Also important to the continued presence in national and international exhibitions of the sector.

CMZ mette a disposizione dei propri clienti e della forza vendita il proprio coordinato aziendale composto da:

> Catalogo
> Ritratto aziendale
> Case study
> Listino prezzi
> Web site

ad integrazione di ciò, è possibile consultare il nostro web site in cui la clientela può attingere a tutte le informazioni necessarie in tempo reale e nella nostra area download scaricare ambienti di sviluppo, aggiornamenti, manuali ecc. a portata di click.
Importante inoltre la presenza costante a fiere nazionali e internazionali di settore.

CMZ SISTEMI ELETTRONICI Srl

HEADQUARTERS
via dell'Artigianato, 21- 31050 Vascon (TV) ITALIA - Tel. 0039 0422 447 411 - Fax 0039 0422 447 444

sale@cmz.it
www.cmz.it

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