



**Motion Control Systems**

**NEW PRODUCTS 2016**  
230 VAC & 400 VAC  
AC SERVOSYSTEMS CATALOGUE



**DISAI**  
Automatic Systems

T. 962 448 450 [www.disai.net](http://www.disai.net)



**AC SERVO SYSTEMS  
CATALOGUE**

**SANYO DENKI**  **SANMOTION**  
AC SERVO SYSTEMS

# AC SERVO SYSTEMS catalogue



















## SANYO DENKI

**SANMOTION**  
AC SERVO SYSTEMS



### Warning / Attenzione

- The sole purpose of this catalogue is as a general introduction to our products, in order to allow an orientation as well as a choice among them. Detailed information concerning limitations and installation/utilization procedures are described in the manuals relating to each product. It is therefore essential to strictly refer to these enclosed technical manuals for a correct use, in accordance with current standards.
- All those products for which a specific obligation is required, as per law regulation in force in the European Community countries, bear the EC marking stating they are in accordance with the related directives.
- All products are classed as components foreseen to be integrated in a more complex machine or installation by a professional assembler, expert in the field of motor drives and in their related problems. Only a professional assembler can install and put in service this component. The necessary installation recommendations are included in the technical manuals.
- R.T.A. reserves the right to modify the products at any time and without prior notice (including, but not limited to, characteristics, availability and prices).
- *Unico scopo di questo catalogo è una presentazione generale dei prodotti atta a consentire un orientamento e una scelta tra gli stessi. Informazioni precise e dettagliate in merito alle limitazioni e modalità di installazione ed uso sono riportate nei manuali tecnici relativi ai singoli prodotti. Pertanto, per un loro uso corretto e conforme alle normative in vigore, è indispensabile fare riferimento a tali manuali tecnici.*
- *Tutti quei prodotti per i quali vi è obbligo specifico, ai sensi delle disposizioni di legge vigenti nei paesi della Comunità Europea, recano la marcatura CE attestante la conformità alle direttive che li riguardano.*
- *Tutti i prodotti riportati nel catalogo sono componenti atti ad essere integrati in apparecchiature o macchine più complesse. La loro installazione e messa in servizio deve essere fatta da un assemblatore professionale competente nel settore degli azionamenti per motori e delle loro problematiche. Le necessarie prescrizioni e indicazioni per la installazione sono incluse nei manuali tecnici.*
- *R.T.A. si riserva il diritto di apportare modifiche ai prodotti (inclusendo, senza limitazione alcuna, caratteristiche, disponibilità e prezzi) in qualsiasi momento e senza preavviso.*

CONTENTS		Page
INTRODUCTION		1
<b>AC SERVOAMPLIFIERS</b>		
	 	
➤ RS1 SERIES	 	12
➤ RS1 CANOPEN SERIES	 	14
➤ RS2 ETHERCAT SERIES	  	16
➤ RS3 SERIES	   	18
➤ RS1C 400VAC SERIES	  	20
<b>AC SERVOMOTORS</b>		
	 	
➤ R2AA04010FXH1CM (R2AA04010FCH1CM6)	<input type="checkbox"/> 40 mm	26
➤ R2AA06020FXH11M (R2AA06020FCH11M)	<input type="checkbox"/> 60 mm	27
➤ R2AA06040FXH11M (R2AA06040FCH11M)	<input type="checkbox"/> 60 mm	28
➤ R2AA08075FXH11M (R2AA08075FCH11M)	<input type="checkbox"/> 80 mm	29
➤ R2AAB8100HXX29M (R2AAB8100HCH29M)	<input type="checkbox"/> 86 mm	30
➤ Q1AA10150DXS00M (Q1AA10150DCS00M)	<input type="checkbox"/> 100 mm	31
➤ Q1AA13300DXS00M (Q1AA13300DCS00M)	<input type="checkbox"/> 130 mm	32
➤ Q2AA13150HXS00M (Q2AA13150HCS00M)	<input type="checkbox"/> 130 mm	33
➤ Q2AA10150BXS48M (Q2AA10150BXS48M)	<input type="checkbox"/> 100 mm	34
➤ Q2CA18450HXS00M	<input type="checkbox"/> 180 mm	35
➤ Q2CA22700HXS00M	<input type="checkbox"/> 220 mm	36
➤ Q2CA2215KVXS00M	<input type="checkbox"/> 220 mm	37
ACCESSORIES (CABLES, RESISTORS, PLANETARY GEARBOXES)		38

NOTE: Codes between brackets refer to model with brake.  
NOTA: I codici tra parentesi si riferiscono alla versione con freno.

## R.T.A. GROUP



R.T.A. - HEADQUARTERS



R.T.A. DEUTSCHLAND

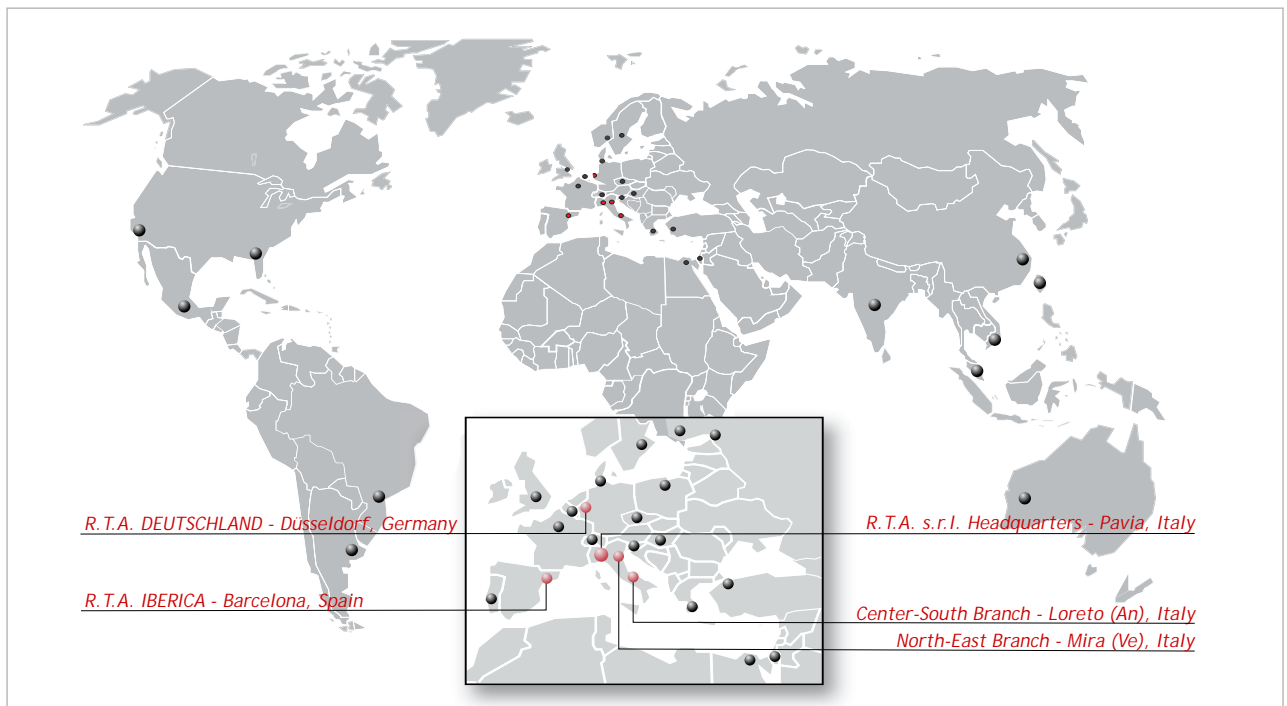


R.T.A. IBERICA

- R.T.A. Group is a leading network of companies in the motion control industry. It is number one in Italy in the stepping systems market and number three in Europe in the stepping motor drives segment.  
 [Source: IMS Research 2012]
- The Group is based on three operational companies: the headquarters, R.T.A. s.r.l. (ITALY), founded in 1976, R.T.A. Deutschland GmbH (GERMANY), founded in 2001 and R.T.A. IBERICA - Motion Control Systems S.L. (SPAIN), founded in 2008.
- R.T.A. has been producing stepping motor drives since 1976: since then more than 750.000 stepping motor drives have been sold in Italy and in more than 39 countries worldwide.
- Production and sales process quality is guaranteed by a Quality Assurance System certified under the UNI EN ISO 9001 (TUV-50 100 2153) Norm.
- Over time, R.T.A. product line has been enriched through the creation of a partnership with SANYO DENKI, a leading Japanese company producing stepping motors, brushless systems and fans. The Group has been its Italian sole distributor since 1989, while distributorship has been granted in 2001 for Germany and in 2008 for Spain.

## R.T.A. WORLDWIDE

- Since its origins, the Group has always had a strong commitment for international business; that was the reason leading to the decision of opening direct branches in Germany and Spain.
- R.T.A. is also active worldwide through a wide network of distributors, composed by 29 companies operating in more than 39 countries.



## R.T.A. PRODUCT LINES



STEPPING MOTOR DRIVES



STEPPING MOTORS



STEPPING MOTORS WITH ENCODER



STEPPING MOTORS WITH BRAKE



IP65 STEPPING MOTORS



AC SERVO SYSTEMS



COOLING FANS



PLANETARY GEARBOXES

INTRODUCTION

## R&D, PRODUCTION AND WAREHOUSE

R&D AND FIELD APPLICATION



- More than 30-years experience in the motion control industry
- 6 engineers fully dedicated to R&D
- 3 full-time field application engineers

STEPPING MOTOR DRIVES PRODUCTION



- More than 40.000 stepping motor drives produced yearly
- More than 750.000 drives sold since 1976
- Computerized testing line: every single drive is tested twice, by two different operators, guaranteeing a very high reliability
- Warranty: 24 months

INDUSTRIAL STRENGTH



- Wide warehouse of SANYO DENKI products:
  - more than 50.000 stepping motors
  - more than 3.000 AC servosystems
  - more than 5.000 cooling fans
- Very short time-to-market: 97% of orders is processed within one week from order.

AC SERVOAMPLIFIERS

AC SERVO MOTORS

## MAIN PRODUCTION SITES



Kangawa Works (Japan)



Subic Works (Philippines)

### Main Factories:

- Kangawa (Japan) Works since 2009
- Subic (Philippines) Works since 2000



## SANYO DENKI BENEFITS



### High Reliability & Quality

- Sound experience in manufacturing since 1959
- ISO 9001 & 14001 certification
- Strong vertical integration and focus on process control

### Factory Support & Flexibility

- Large production volume: 310 000 motors/month
- Machine based assembling
- Through process control & quality checks

### Technology Center

- SANYO DENKI'S main product research and development facility
- More than 300 Engineers
- Since 1997



Acoustic radio wave anechoic chamber



Laboratories



Production line



Design rooms

## R.T.A. PRODUCT LINES: AC SERVOMOTORS & SERVOAMPLIFIERS

### ■ AC SERVOMOTORS

- **R2 SERIES:**  
Power range from 100W to 1000W, maximum speed up to 6000 rpm, IP67 protection degree, incremental or absolute encoder, with or without brake.
- **Q SERIES:**  
Power range from 1500W to 3000W, maximum speed up to 4500 rpm, IP67 protection degree, with or without brake .
- **Q2CA SERIES:**  
Power range from 4,5KW to 15KW, maximum speed up to 3000 rpm, IP67 protection degree .

### ■ MOTORI BRUSHLESS

- **SERIE R2:**  
Range di potenze da 100W a 1000W, velocità massima fino a 6000 rpm, grado di protezione IP67 con encoder incrementale o assoluto, con o senza freno.
- **SERIE Q:**  
Range di potenze da 1500W a 3000W, velocità massima fino a 4500 rpm, grado di protezione IP67, con o senza freno.
- **SERIE Q2CA:**  
Range di potenze da 4,5KW a 15KW, velocità massima fino a 3000 rpm, grado di protezione IP67.

**100 W**

**AC SERVOMOTOR NOMINAL POWER**

**15000 W**



**230 VAC**

**AC SERVOAMPLIFIER POWER SUPPLY**

**400 VAC**

### ■ AC SERVOAMPLIFIERS / AZIONAMENTI BRUSHLESS

#### ■ RS1 SERIES



- 230VAC power input. Control by pulse train and analog signal.
- Alimentazione 230VAC, comando a treno di impulsi e segnale analogico.

#### ■ RS1 CANOPEN SERIES



- 230VAC power input. CANopen interface, control by pulse train and analog signal.
- Alimentazione 230VAC, interfaccia CANopen, comando a treno di impulsi e segnale analogico.

#### ■ RS2 ETHERCAT SERIES



- 230VAC power input. ETHERCAT profile, Safe Torque Off (STO)-SIL2.
- Alimentazione 230VAC, profilo ETHERCAT, Safe Torque Off (STO)-SIL2.

#### ■ RS3 SERIES



- 230VAC power input. Control by pulse train and analog signal, Safe Torque Off (STO)-SIL3. Very compact size.
- Alimentazione 230VAC, dimensioni compatte, comando a treno di impulsi e segnale analogico, Safe Torque Off (STO)-SIL3.

#### ■ RS1C 400VAC SERIES



- 400VAC power input. CANopen interface, control by STEP/DIR and analog signal.
- Alimentazione 400VAC, interfaccia CANopen. Modalità di controllo: STEP/DIR e segnale analogico.

## AC SERVOAMPLIFIERS TABLE OF CONTENTS

SANYO DENKI AC Servoamplifiers	DRIVE TYPE TIPO AZIONAMENTO (Interface/Interfaccia)	POWER SUPPLY ALIMENTAZIONE (Vac.)	SAFE TORQUE OFF SAFE TORQUE OFF (STO)	MAX CURRENT CORRENTE MASSIMA (Amp)	DIMENSIONS DIMENSIONI (mm.)	TECHNICAL DATA DATI TECNICI (page/pagina)
<b>RS1 SERIES</b>						
RS1A01AA	Step/Dir & 0-10 Vdc	230	---	15	45x168x130	12
RS1A03AA	Step/Dir & 0-10 Vdc	230	---	30	50x168x130	12
RS1A05AA	Step/Dir & 0-10 Vdc	230	---	50	90x168x130	12
RS1A10AA	Step/Dir & 0-10 Vdc	230	---	100	100x205x235	12
<b>RS1 CANOPEN SERIES</b>						
RS1A01AL	Canopen	230	---	15	60x168x130	14
RS1A03AL	Canopen	230	---	30	60x168x130	14
RS1A05AL	Canopen	230	---	50	90x168x130	14
<b>RS2 ETHERCAT SERIES</b>						
RS2A03A0K	Ethercat	230	SIL2	30	50x160x130	16
RS2A05A8K	Ethercat	230	SIL2	50	85x160x130	16
<b>RS3 SERIES</b>						
RS3A02A0AL2	Step/Dir analog	230	SIL3	20	40x160x130	18
RS3A03A0AL2	Step/Dir analog	230	SIL3	30	50x160x130	18
<b>Q2CA SERIES</b>						
RS1C10AL	Canopen Step/Dir analog	400	---	100	175x235x235	20
RS1D15AA	Step/Dir analog	400	---	150	220x235x375	22



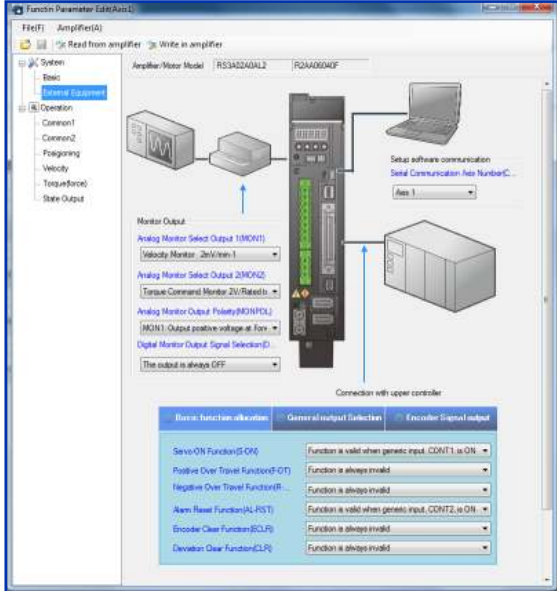
INPUT VOLTAGE **230 VAC** **400 VAC**



## MULTITASKING SYSTEM SETUP

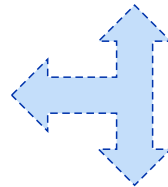
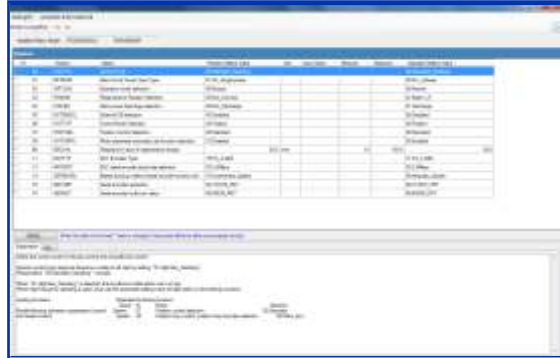
### INPUT AND OUTPUT SETTING

Modify the I/O setting using an intuitive graphic interface.  
*Definisci Ingressi e Uscite grazie alla interfaccia grafica semplificata.*



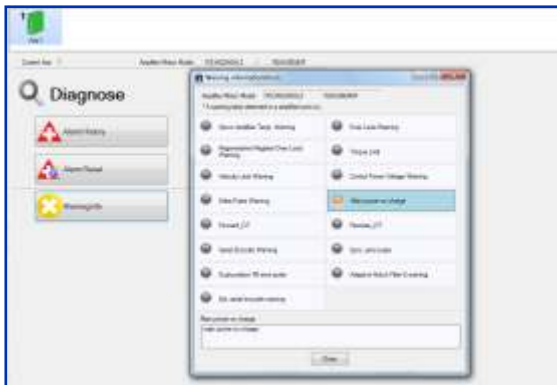
### PARAMETER SETUP

The «Group-Page» interface allows access to every parameter.  
*Accesso diretto ad ogni parametro dell'azionamento.*



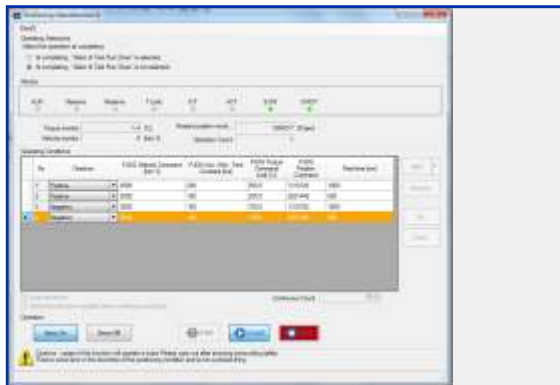
### SYSTEM DIAGNOSE

Keep your warning information under control.  
*Tieni sotto controllo tutte le segnalazioni.*



### ADVANCED JOGGING OPERATION

Create linked movements to test the mechanics.  
*Crea una serie di movimenti collegati tra loro al fine di testare la meccanica.*



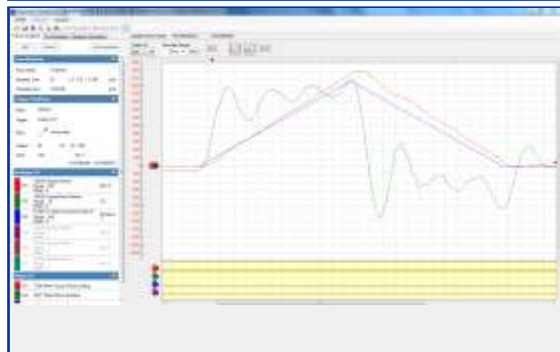
### REAL TIME AUTOTUNING FUNCTION

Tune the System using the Automatic Tuning Response.  
*Scegli la rigidità del sistema mediante l'Automatic Tuning Response.*



### TRACE OPERATION

Check the result with the functionality of the embedded Oscilloscope.  
*Verifica i risultati utilizzando la funzione Oscilloscopio.*



## AC SERVOMOTORS TABLE OF CONTENTS

SANYO DENKI AC Servomotors	NOMINAL POWER POTENZA NOMINALE (W.)	NOMINAL SPEED VELOCITÀ NOMINALE (RPM.)	MAXIMUM SPEED VELOCITÀ MASSIMA (RPM.)	NOMINAL TORQUE COPPIA NOMINALE (Nm.)	STALL TORQUE COPPIA DI STALLO (Nm.)	MAXIMUM TORQUE COPPIA MASSIMA (Nm.)	INERTIA INERZIA (Kg*m <sup>2</sup> )	ENCODER ENCODER (imp./rev)	TECHNICAL DATA DATI TECNICI (page/pagina)
<b>R2 SERIES</b>									
R2AA04010FXH1CM	100	3000	6000	0.318	0.318	1.18	0.0627x10 <sup>-4</sup>	131072 (17 bit)	26
R2AA06020FXH11M	200	3000	6000	0.637	0.686	2.20	0.219x10 <sup>-4</sup>	131072 (17 bit)	27
R2AA06040FXH11M	400	3000	6000	1.270	1.370	4.80	0.412x10 <sup>-4</sup>	131072 (17 bit)	28
R2AA08075FXH11M	750	3000	6000	2.390	2.550	8.50	1.820x10 <sup>-4</sup>	131072 (17 bit)	29
R2AAB8100HXH29M	1000	3000	3000	3.180	3.920	11.60	2.383x10 <sup>-4</sup>	131072 (17 bit)	30
<b>Q1 SERIES</b>									
Q1AA10150DXS00M	1500	3000	4500	4.79	4.9	14.7	1.61x10 <sup>-4</sup>	8000	31
Q1AA13300DXS00M	3000	3000	4500	9.50	10.8	28.4	4.92x10 <sup>-4</sup>	8000	32
<b>Q2 SERIES</b>									
Q2AA10150BXS48M	1500	2000	2000	7.2	7.7	20.5	7.99x10 <sup>-4</sup>	8000	33
Q2AA13150HXS00M	1500	2000	3500	7.5	9.0	20.3	7.94x10 <sup>-4</sup>	8000	34
<b>Q2CA SERIES</b>									
Q2CA18450HXS00M	4500	2000	3000	21.5	21.5	70	46.5x10 <sup>-4</sup>	8000	35
Q2CA22700HXS00M	7000	2000	3000	33.4	50.1	86	185x10 <sup>-4</sup>	8000	36
Q2CA2215KVXS00M	15000	1500	2000	96	96	230	255x10 <sup>-4</sup>	8000	37

NOTE 1: All the R2, Q1 and Q2 Series Motors can be supplied with 24 VDC holding brake (codes between brackets).  
 NOTA 1: tutti i motori serie R2, Q1 e Q2 possono essere forniti nella versione con freno di stazionamento a 24 VDC (indicati tra parentesi nel catalogo).

NOTE 2: the R Series Motors can be supplied, on demand, with absolute encoder.  
 NOTA 2: i motori serie R possono essere forniti, su richiesta, nella versione con encoder assoluto.

## AC SERVOMOTORS OVERLOAD CURVES

This example shows the R2 100W motor's overload curve.

Note that a torque equal to 200% of the nominal torque can be kept for approx. 14 seconds.

A torque that is 400% of the nominal torque can be kept for approx. 3 seconds.

The overload curves of all the other motors have similar characteristics.

The possibility of using the motor in overload conditions for rather long time allows to choose, in different applications, smaller and compact motors, reducing mechanical volumes and cutting costs.

### CURVE DI SOVRACCARICO

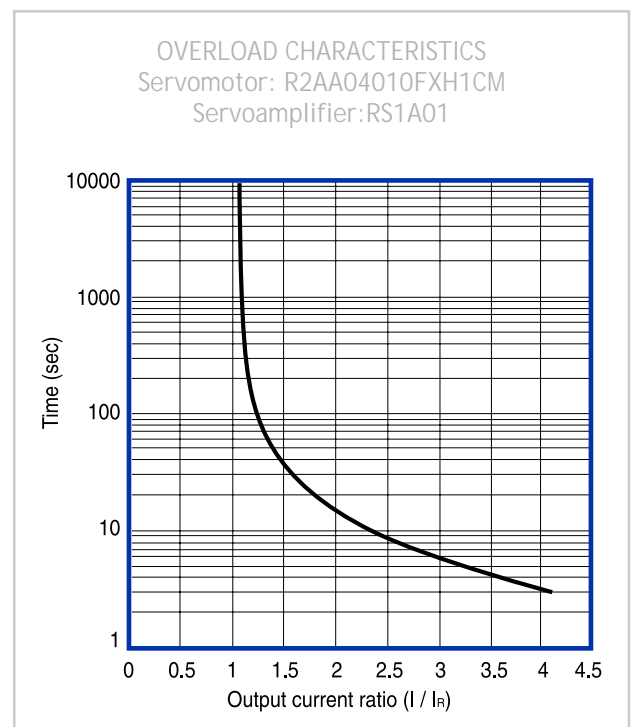
L'esempio mostra la curva di sovraccarico del motore R2 da 100W.

Si può osservare come una coppia pari al 200% della coppia nominale può essere mantenuta per circa 14 secondi.

Una coppia pari al 400% della nominale può essere mantenuta per circa 3 secondi.

Le curve di sovraccarico di tutti gli altri motori proposti presentano caratteristiche simili.

La possibilità di utilizzare il motore in condizioni di sovraccarico per tempi elevati permette di scegliere, in molte applicazioni, motori più piccoli e compatti, riducendo così ingombri meccanici e costi.



## AC SERVO MOTOR & AC SERVOAMPLIFIER COUPLING

The following table shows suggested SANYO DENKI AC servomotors coupling between servoamplifiers.

Nella tabella seguente sono indicati gli accoppiamenti motore brushless / azionamenti brushless SANYO DENKI.

AC SERVO MOTORS	AC SERVOAMPLIFIERS SERIES / SERIE AZIONAMENTI BRUSHLESS *												
	RS1 230 VAC PULSE TRAIN ANALOG INPUT				RS1 CANOPEN 230 VAC CAN			RS2 230 VAC EtherCAT		RS3 230 VAC SIL3 SAFE TORQUE OFF (STO)		RS1C 400 VAC PULSE TRAIN ANALOG INPUT CAN	
	RS1A01AA	RS1A03AA	RS1A05AA	RS1A010AA	RS1A01AL	RS1A03AL	RS1A05AL	RS2A03A0K	RS2A05A8K	RS3A02A0AL2	RS3A03A0AL2	RS1C10AL	RS1D15AA
<b>R2 SERIES</b> 230 VAC													
R2AA04010FXH1CM	■				■			■		■			
R2AA06020FXH11M	■				■			■		■			
R2AA06040FXH11M		■				■		■		■			
R2AA08075FXH11M		■				■		■			■		
R2AAB8100HXH29M		■				■		■			■		
<b>Q1 SERIES</b> 230 VAC													
Q1AA10150DXS00M			■				■		■				
Q1AA13300DXS00M				■									
<b>Q2 SERIES</b> 230 VAC													
Q2AA10150BXS48M		■				■							
Q2AA13150HXS00M			■				■		■				
<b>Q2CA SERIES</b> 400 VAC													
Q2CA18450HXS00M												■	
Q2CA22700HXS00M												■	
Q2CA2215KVXS00M													■

\*For more info, please refer to [www.rta.it](http://www.rta.it)  
\*Per ulteriori informazioni, si veda [www.rta.it](http://www.rta.it)

## SG SERIES PLANETARY GEARBOXES OPTIONS

**NEW!**



- New RTA SG Series planetary gearboxes
- All based on SANYO DENKI stepping motors and AC servomotors, all models at stock at RTA.
- 16 models on stock at RTA
- Sizes: 050, 070, 090 & 120
- Ratios (i): from i=05 to i=25
- All motors with gearbox are mounted and tested by R.T.A., following rigorous standards in accordance with R.T.A. best practices developed over more than 30 years of activity.

- Nuova serie di riduttori epicicloidali serie SG
- Tutti i riduttori sono adatti per essere montati su servomotori SANYO DENKI e sono disponibili a stock presso RTA.
- 16 modelli disponibili a stock
- Taglie: 050, 070, 090 & 120
- Ratio (i): da i=05 a i=25
- Tutti i motori con riduttore sono montati e testati da R.T.A., seguendo rigorose norme in conformità con le migliori pratiche sviluppate da R.T.A. in più di 30 anni di attività.





## 230 VAC SERVOAMPLIFIERS AZIONAMENTI BRUSHLESS 230 VAC

### R SERIES AC SERVOAMPLIFIERS - TRADITIONAL INTERFACE AZIONAMENTI SERIE R - INTERFACCIA TRADIZIONALE

**FIVE DIGIT DISPLAY AND OPERATION KEY:** It allows to view and modify parameters and monitor in real time the behavior of the system.

**DISPLAY A 5 CIFRE e TASTIERA DI PROGRAMMAZIONE:** Per visualizzare e modificare i parametri e monitorare in tempo reale il funzionamento del sistema.

**PC CONNECTOR:** The amplifier can be set and monitored by means of Personal Computer RS232 interface.

**CONNETTORE PC:** Impostazioni e monitor tramite personal computer via RS232.

**POWER CONNECTOR:** 230VAC, single-phase or three-phase (configurable by user). Power sections kept separated for logic/signal and power electronics. Built-in protection circuits against overload and input overvoltage.

**CONNETTORE ALIMENTAZIONE:** 230 VAC, monofase e trifase (configurabile dall'utente). Sezioni di alimentazione separate per elettronica di logica/segnale e di potenza. Circuiti di protezione integrati contro sovraccarichi, extra-tensioni in ingresso.

**I/O CONNECTOR:** Control pulse train (clock + direction; forward + backward pulse; 90° phase shift) or analog signal (proportional to speed or torque). 8 inputs and 8 outputs configurable by user.

**CONNETTORE SEGNALI:** Comando a treno d'impulsi (clock + direzione; forward + backward pulse; 90° phase shift) o con segnale analogico (proporzionale a Velocità o Coppia). 8 ingressi e 8 uscite configurabili dall'utente.

**CONNECTOR for external regenerative resistor (optional).**

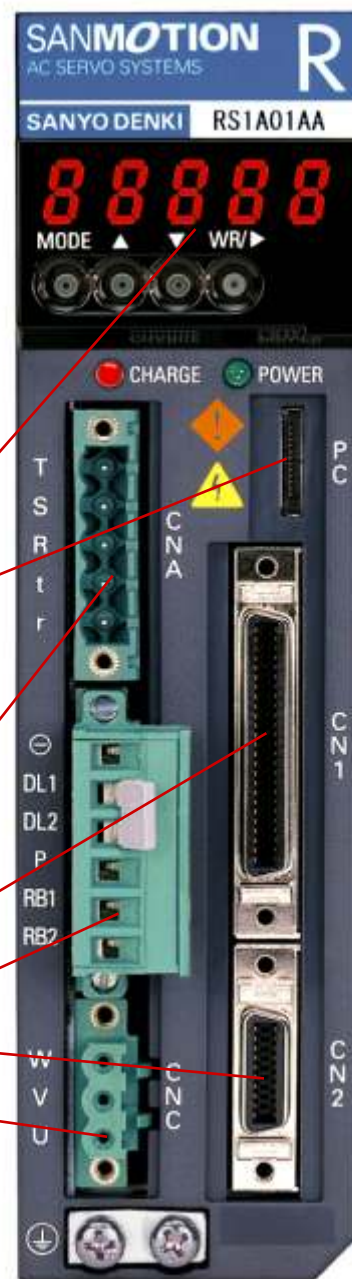
**CONNETTORE per resistenza di frenatura esterna (opzionale).**

**ENCODER CONNECTOR**

**CONNETTORE ENCODER**

**MOTOR POWER CONNECTOR**

**CONNETTORE POTENZA MOTORE**



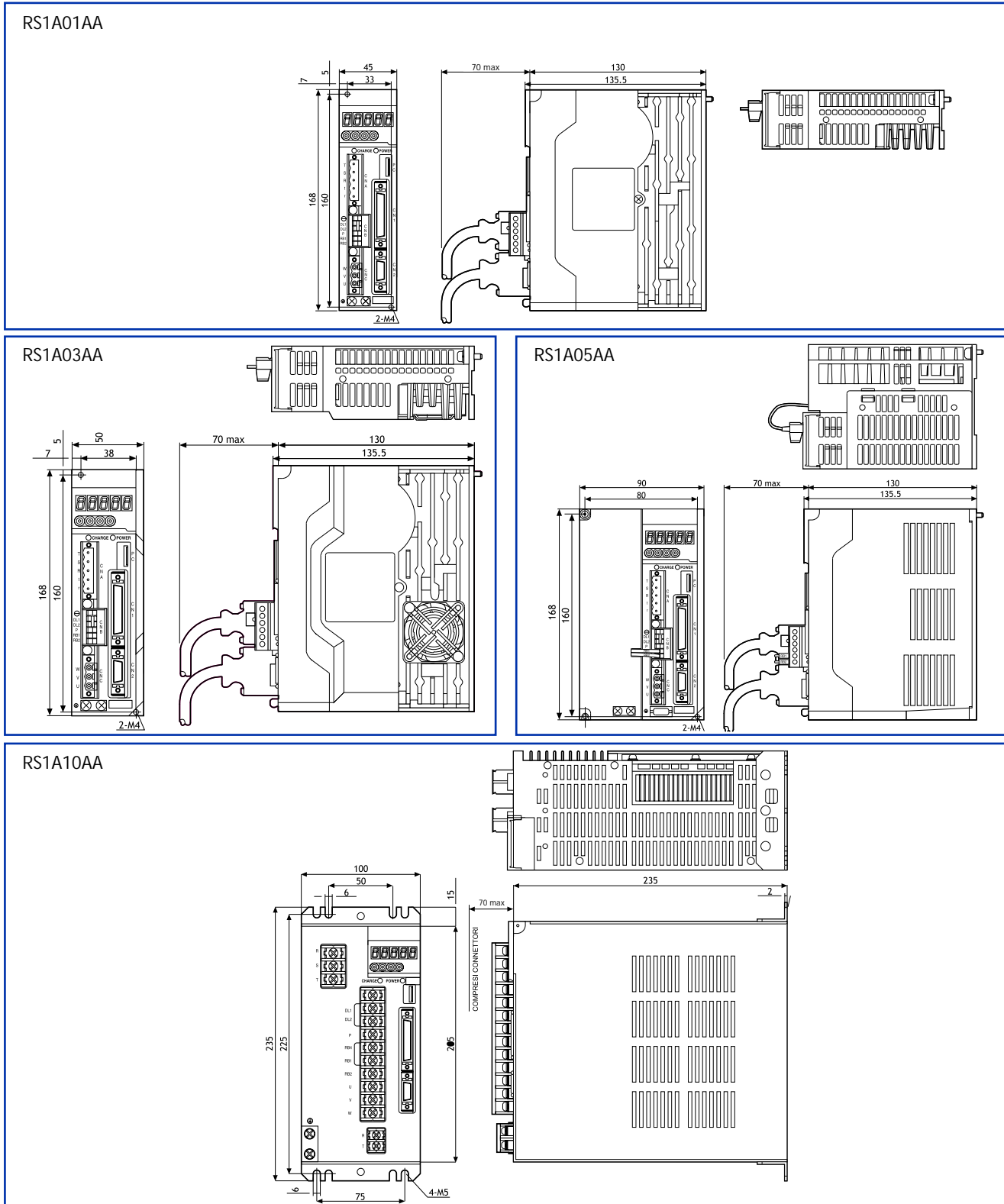
REAL DIMENSIONS  
(45x168x130)

TECHNICAL DATA DATI TECNICI	Position, Velocity, Torque Control (Control Mode Switching available) Controllo in Posizione, Velocità, Coppia (con possibilità di Switching Control Mode)			
MODEL MODELLO	RS1A01AA	RS1A03AA	RS1A05AA	RS1A10AA
MAX CURRENT CORRENTE MAX. EROGABILE	15 Amp	30 Amp	50 Amp	100 Amp
MOTOR OUTPUT STAGE STADIO DI USCITA MOTORE	IGBT, PWM control, sinusoidal current			
POWER SUPPLY VOLTAGE TENSIONE DI ALIMENTAZIONE POTENZA	Single-phase or three-phase (configurable by the user)* 200 VAC to 230 VAC (+10%, -15%) 50/60 Hz (± 3 Hz)			
LOGIC SUPPLY VOLTAGE TENSIONE DI ALIMENTAZIONE LOGICA	Single-phase from 200 VAC to 230 VAC (+10%, -15%) 50/60 Hz (± 3 Hz)			
DIMENSIONS (mm) DIMENSIONI (mm)	45x168x130	50x168x130	90x168x130	100x205x235
MASS (kg) MASSA (kg)	0.9	1.0	2.2	5.2

\*Model RS1A10AA needs 230 VAC three-phase power supply.

\*Il modello RS1A10AA richiede un'alimentazione di potenza 230 VAC trifase.

## “RS1A” SERIES AC SERVOAMPLIFIERS: PULSE TRAIN AND ANALOG INPUT VERSION OUTLINE DRAWINGS



Dimensions mm.

## 230 VAC SERVOAMPLIFIERS AZIONAMENTI BRUSHLESS 230 VAC

### R SERIES AC SERVOAMPLIFIERS - CANopen INTERFACE AZIONAMENTI SERIE R - INTERFACCIA CANopen

SEVEN SEGMENT LED DISPLAY: It allows to monitor amplifier and CANopen bus.  
DISPLAY 7 SEGMENTI LED: con funzioni di monitor stato azionamento e rete CANopen.

CANopen interface CONNECTOR: RJ45 with integrated termination resistor.  
CONNETTORE INTERFACCIA CANopen: Rj45 con resistenza di terminazione integrata.

I/O CONNECTOR: 6 inputs and 2 outputs setting by user.  
CONNETTORE SEGNALI: 6 ingressi e 2 uscite configurabili dall'utente.

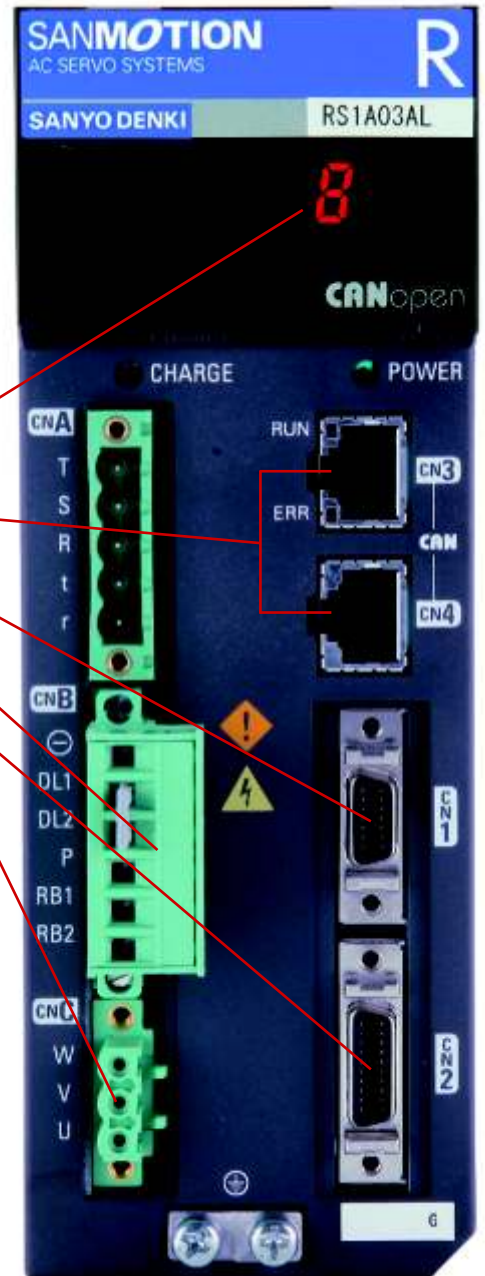
CONNECTOR for external regenerative resistor (optional).  
CONNETTORE per resistenza di frenatura esterna (opzionale).

ENCODER CONNECTOR - CONNETTORE ENCODER

MOTOR POWER CONNECTOR - CONNETTORE POTENZA MOTORE

#### CANopen MAIN FEATURES

- Mode of Operation: Homing Mode, Profile Velocity Mode, Profile Position Mode, Profile Torque Mode, Interpolated Position Mode.
- Fast capture "freeze" function.
- EDS file available.

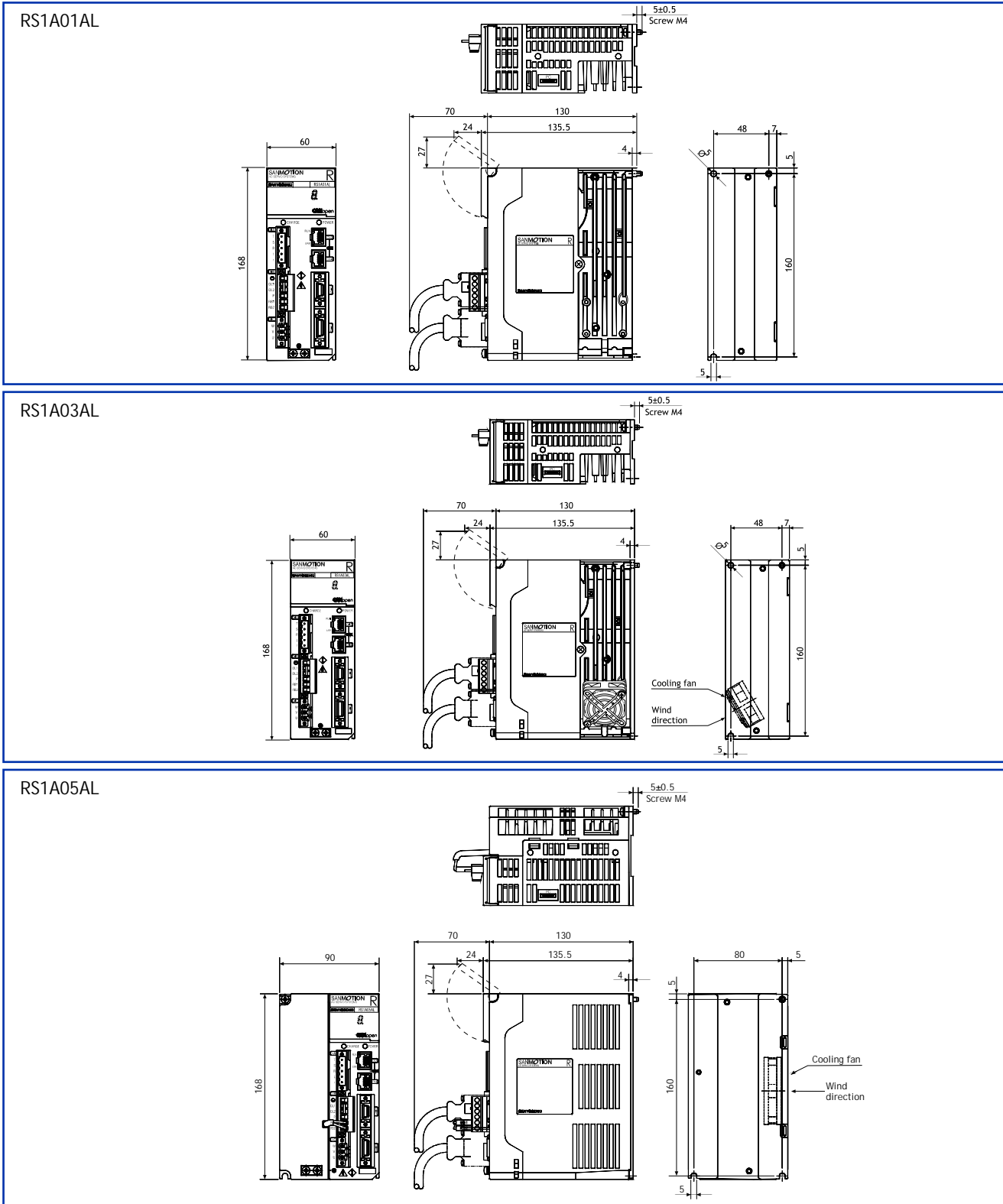


REAL DIMENSIONS  
(60x168x130)

TECHNICAL DATA DATI TECNICI	CANopen Control Controllo CANopen		
	RS1A01AL	RS1A03AL	RS1A05AL
MODEL MODELLO	RS1A01AL	RS1A03AL	RS1A05AL
MAX CURRENT CORRENTE MAX. EROGABILE	15 Amp	30 Amp	50 Amp
MOTOR OUTPUT STAGE STADIO DI USCITA MOTORE	IGBT, PWM control, sinusoidal current		
POWER SUPPLY VOLTAGE TENSIONE DI ALIMENTAZIONE POTENZA	Single-phase or three-phase (configurable by the user) 200 VAC to 230 VAC (+10%, -15%) 50/60 Hz (± 3 Hz)		
LOGIC SUPPLY VOLTAGE TENSIONE DI ALIMENTAZIONE LOGICA	Single-phase from 200 VAC to 230 VAC (+10%, -15%) 50/60 Hz (± 3 Hz)		
DIMENSIONS (mm) DIMENSIONI (mm)	60x168x130	60x168x130	90x168x130
MASS (kg) MASSA (kg)	1.0	1.11	2.2



## “RS1A” SERIES AC SERVOAMPLIFIERS: CANopen VERSION OUTLINE DRAWINGS



Dimensions mm.

## 230 VAC SERVOAMPLIFIERS AZIONAMENTI BRUSHLESS 230 VAC

R-ADVANCED SERIES AC SERVOAMPLIFIERS - EtherCAT INTERFACE  
AZIONAMENTI SERIE R-ADVANCED - INTERFACCIA EtherCAT

FIVE DIGIT DISPLAY: It allows to monitor amplifier and EtherCAT Network.  
DISPLAY A 5 CIFRE: Con funzioni di monitor stato azionamento e rete EtherCAT.

PC CONNECTOR: The amplifier can be set and monitored by means of Personal Computer RS232 interface.

CONNETTORE PC: Impostazioni e monitor tramite personal computer via RS232.

POWER CONNECTOR: 230VAC, single-phase or three-phase (configurable by user). Power sections kept separated for logic/signal and power electronics. Built-in protection circuits against overload and input overvoltage.

Internal regenerative resistor. External regenerative resistor (optional).

CONNETTORE ALIMENTAZIONE: 230 VAC, monofase e trifase (configurable dall'utente). Sezioni di alimentazione separate per elettronica di logica/segnale e di potenza. Circuiti di protezione integrati contro sovraccarichi, extra-tensioni in ingresso.

Resistenza di frenatura interna. Resistenza di frenatura esterna (opzionale).

I/O CONNECTOR: 2 inputs and 2 outputs setting by user.

CONNETTORE SEGNALI: 2 ingressi e 2 uscite configurabili dall'utente.

EtherCAT INTERFACE CONNECTOR: RJ45 - CAT5e.

CONNETTORI INTERFACCIA EtherCAT: RJ45 - CAT5e.

MOTOR POWER CONNECTOR - CONNETTORE POTENZA MOTORE

SAFE TORQUE OFF - SIL2 CONNECTOR



CONNETTORE SAFE TORQUE OFF - SIL2

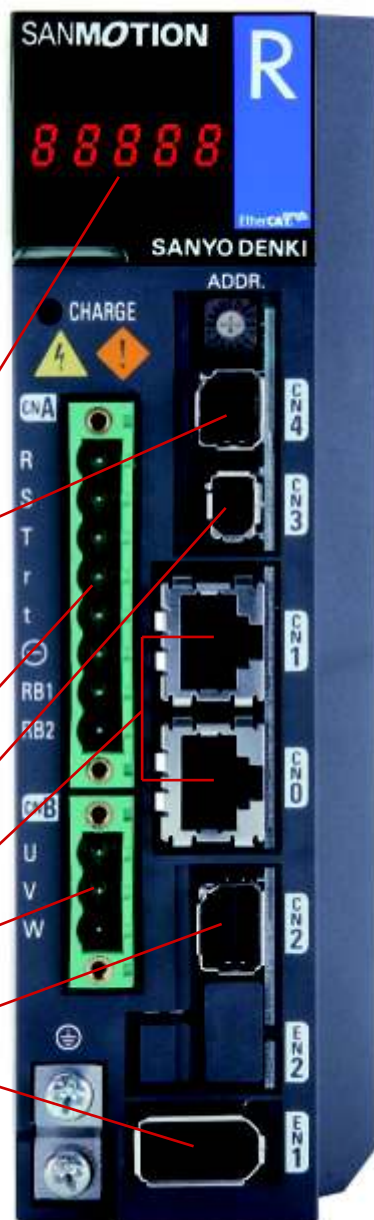
ENCODER CONNECTOR - CONNETTORE ENCODER

### EtherCAT MAIN FEATURES

- Mode of Operation: Homing Mode, Profile Velocity Mode, Profile Position Mode, Profile Torque Mode, Cycle Sync Position Mode, Cycle Sync Velocity Mode, Cycle Sync Torque Mode.
- Touch Probe Function.
- XML file available.

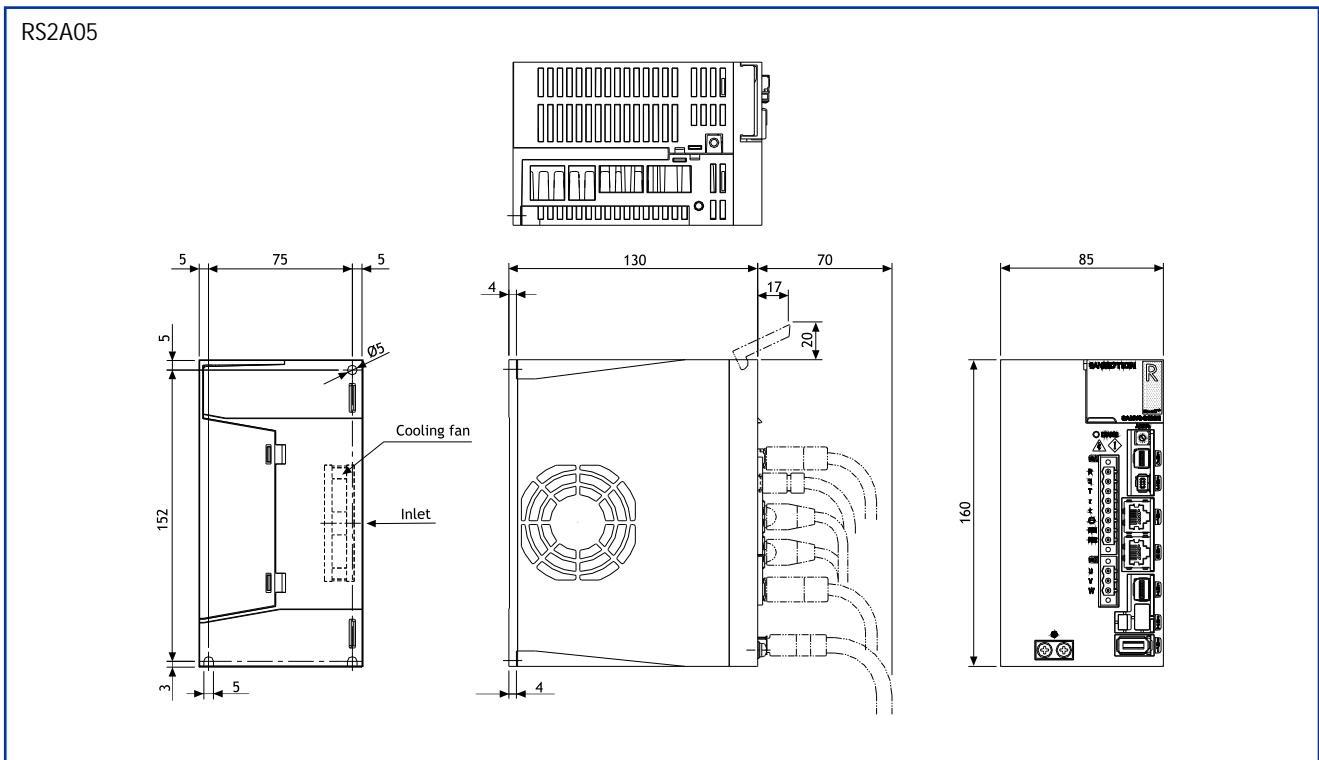
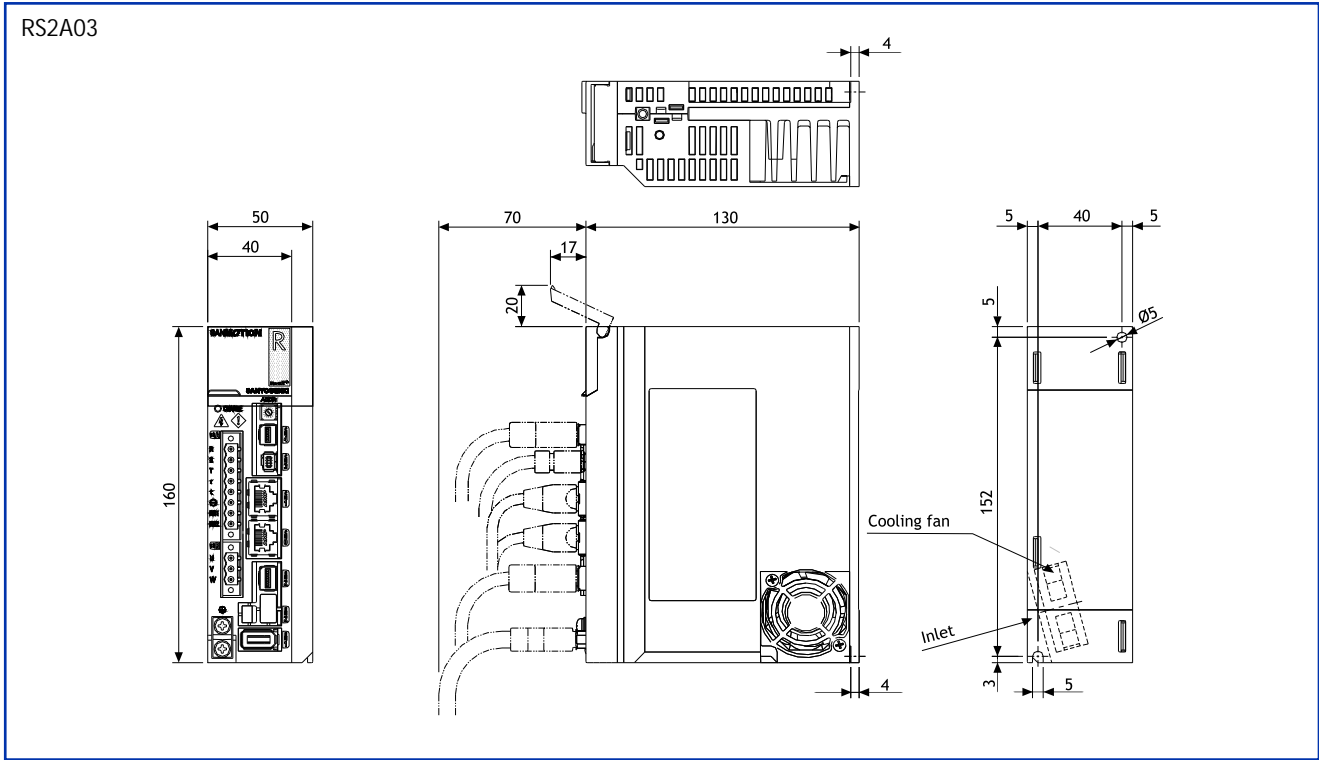


REAL DIMENSIONS  
(50x160x130)



TECHNICAL DATA DATI TECNICI	EtherCAT Control Controllo EtherCAT	
	RS2A03A0K	RS2A05A8K
MODEL MODELLO		
MAX CURRENT CORRENTE MAX. EROGABILE	30 Amp	50 Amp
MOTOR OUTPUT STAGE STADIO DI USCITA MOTORE	IGBT, PWM control, sinusoidal current	
POWER SUPPLY VOLTAGE TENSIONE DI ALIMENTAZIONE POTENZA	Single-phase or three-phase (configurable by the user) 200 VAC to 230 VAC (+10%, -15%) 50/60 Hz (± 3 Hz)	
LOGIC SUPPLY VOLTAGE TENSIONE DI ALIMENTAZIONE LOGICA	Single-phase from 200 VAC to 230 VAC (+10%, -15%) 50/60 Hz (± 3 Hz)	
DIMENSIONS (mm) DIMENSIONI (mm)	50x160x130	85x160x130
MASS (kg) MASSA (kg)	0.9	1.65

**“RS2A” SERIES AC SERVOAMPLIFIERS:  
EtherCAT VERSION OUTLINE DRAWINGS**



Dimensions mm.

**SANMOTION**  
AC SERVO SYSTEMS **RS3**

**230**  
VAC

**SIL3**  
SAFE TORQUE  
OFF (STO)

**PULSE TRAIN  
ANALOG INPUT**

**ULTRA  
COMPACT  
SIZE**

## 230 VAC SERVOAMPLIFIERS AZIONAMENTI BRUSHLESS 230 VAC

### R SERIES AC SERVOAMPLIFIERS - TRADITIONAL INTERFACE AZIONAMENTI SERIE R - INTERFACCIA TRADIZIONALE

**FIVE DIGIT DISPLAY AND OPERATION KEY:** It allows to view and modify parameters and monitor in real time the behavior of the system.

**DISPLAY A 5 CIFRE e TASTIERA DI PROGRAMMAZIONE:** Per visualizzare e modificare i parametri e monitorare in tempo reale il funzionamento del sistema.

**PC CONNECTOR:** The amplifier can be set and monitored by means of Personal Computer USB interface.

**CONNETTORE PC:** Impostazioni e monitor tramite personal computer via USB.

**POWER CONNECTOR:** 230VAC, single-phase or three-phase (configurable by user). Power sections kept separated for logic/signal and power electronics. Built-in protection circuits against overload and input overvoltage.

Internal regenerative resistor.

**CONNETTORE ALIMENTAZIONE:** 230 VAC, monofase e trifase (configurabile dall'utente). Sezioni di alimentazione separate per elettronica di logica/segnale e di potenza. Circuiti di protezione integrati contro sovraccarichi, extra-tensioni in ingresso. Resistenza di frenatura interna.

**I/O CONNECTOR:** Control pulse train (clock + direction; forward + backward pulse; 90° phase shift) or analog signal (proportional to speed or torque). 8 inputs and 8 outputs setting by user.

**CONNETTORE SEGNALI:** Comando a treno d' impulsi (clock + direzione; forward + backward pulse; 90° phase shift) o con segnale analogico (proporzionale a Velocità o Coppia). 8 ingressi e 8 uscite configurabili dall'utente.

**MOTOR POWER CONNECTOR - CONNETTORE POTENZA MOTORE**

**SAFE TORQUE OFF - SIL3 CONNECTOR**  
**CONNETTORE SAFE TORQUE OFF - SIL3**

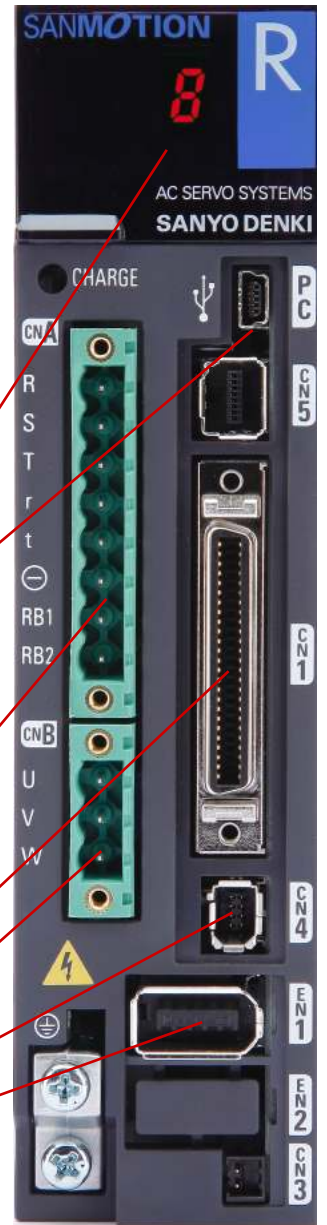
**SIL3**  
SAFE TORQUE  
OFF (STO)

**ENCODER CONNECTOR - CONNETTORE ENCODER**

#### MAIN FEATURES

- Safe Torque Off (STO) function - SIL3/IEC61508 Performance Level - PL = e/ISO13849-1
- Speed frequency response of 2.2 kHz [3.3 times that of previous RS1 model!]
- Ultra compact size - see photo

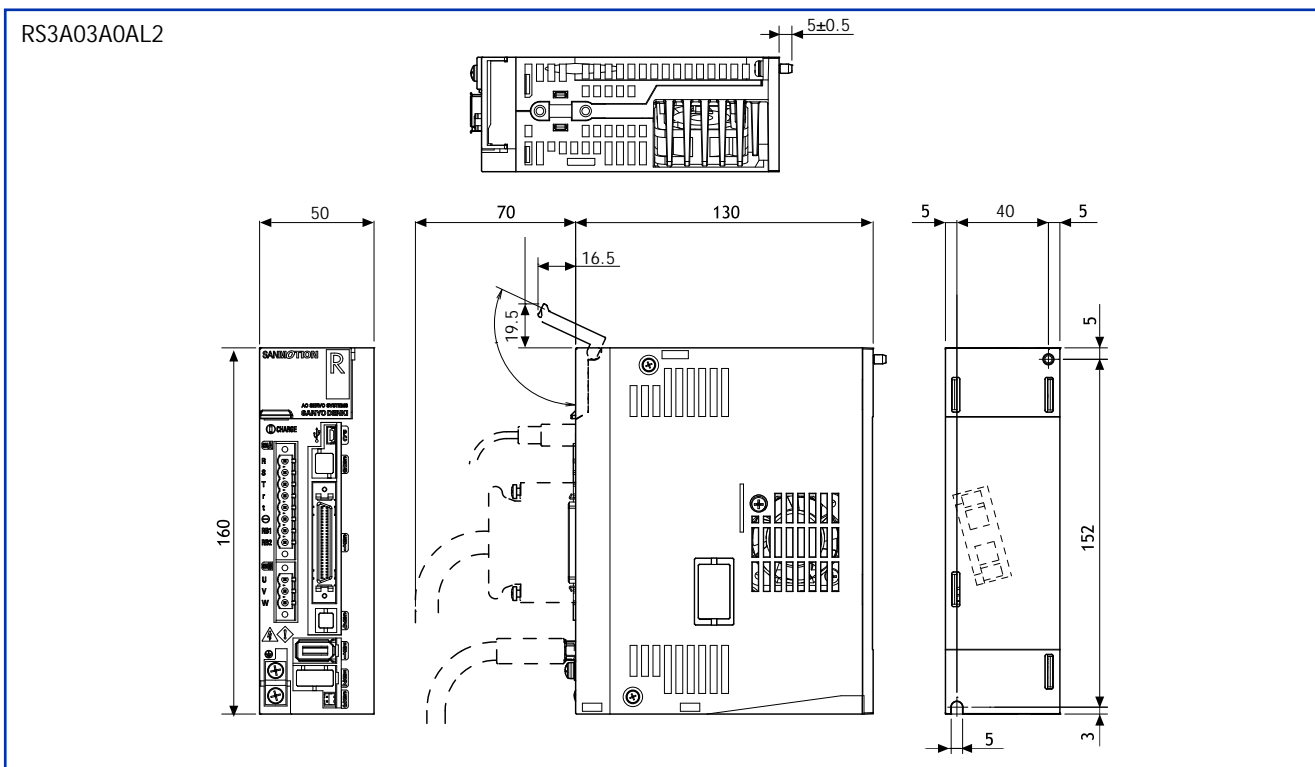
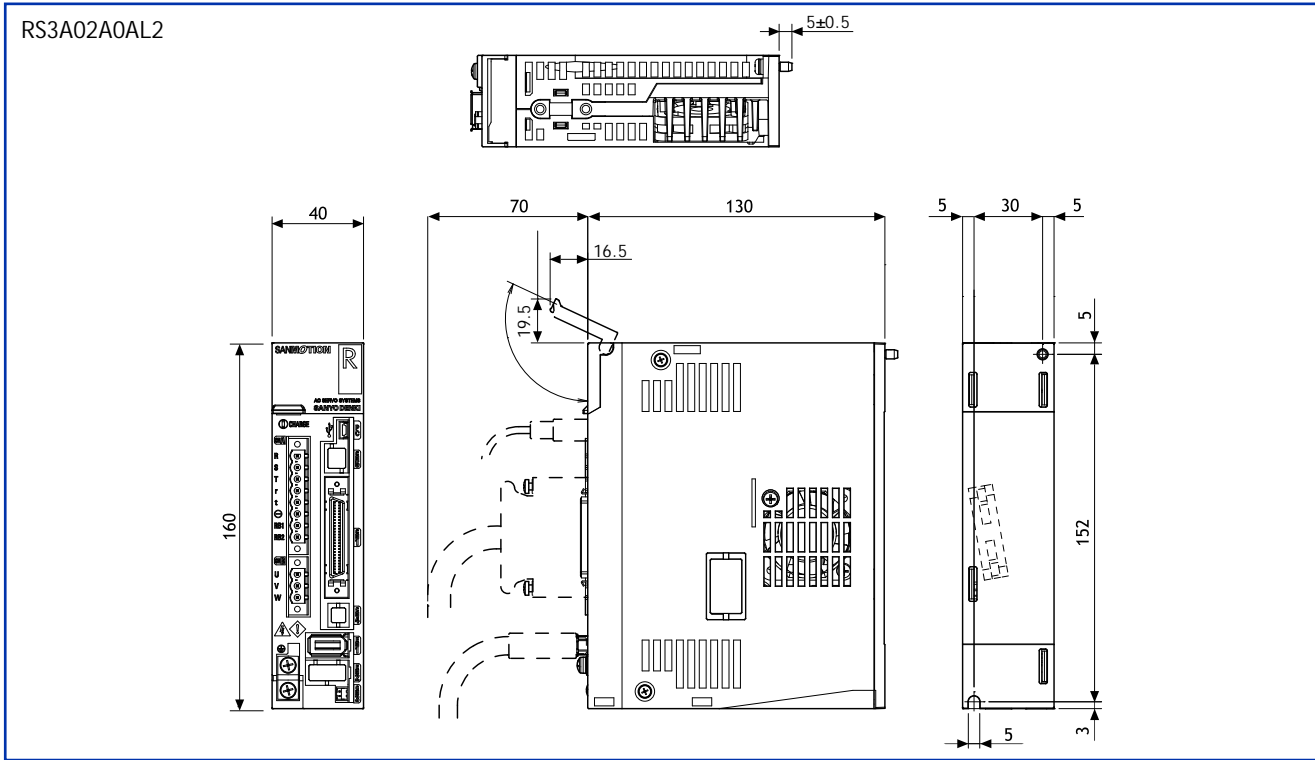
**SIL3**  
SAFE TORQUE  
OFF (STO)



REAL DIMENSIONS  
(40x160x130)

TECHNICAL DATA DATI TECNICI	Position, Velocity, Torque Control (Control Mode Switching available) Controllo in Posizione, Velocità, Coppia (con possibilità di Switching Control Mode)	
MODEL MODELLO	RS3A02A0AL2	RS3A03A0AL2
MAX CURRENT CORRENTE MAX. EROGABILE	20 Amp	30 Amp
MOTOR OUTPUT STAGE STADIO DI USCITA MOTORE	IGBT, PWM control, sinusoidal current	
POWER SUPPLY VOLTAGE TENSIONE DI ALIMENTAZIONE POTENZA	Single-phase or three-phase (configurable by the user)* 200 VAC to 230 VAC (+10%, -15%) 50/60 Hz (± 3 Hz)	
LOGIC SUPPLY VOLTAGE TENSIONE DI ALIMENTAZIONE LOGICA	Single-phase from 200 VAC to 230 VAC (+10%, -15%) 50/60 Hz (± 3 Hz)	
DIMENSIONS (mm) DIMENSIONI (mm)	40x160x130	50x160x130
MASS (kg) MASSA (kg)	0.75	1.65

## “RS3A” SERIES AC SERVOAMPLIFIERS: PULSE TRAIN AND ANALOG INPUT VERSION OUTLINE DRAWINGS



Dimensions mm.

## 400 VAC SERVOAMPLIFIERS AZIONAMENTI BRUSHLESS 400 VAC

### RS1C SERIES AC SERVOAMPLIFIERS - CANOPEN VERSION AZIONAMENTI SERIE RS1C - VERSIONE CANOPEN

**FIVE DIGIT DISPLAY AND OPERATION KEY:** It allows to view and modify parameters and monitor in real time the behavior of the system.

**DISPLAY A 5 CIFRE e TASTIERA DI PROGRAMMAZIONE:** Per visualizzare e modificare i parametri e monitorare in tempo reale il funzionamento del sistema.

**POWER CONNECTION:** 400 VAC, three-phase. Built-in protection circuits against overload and input overvoltage.

**CONNESSIONE ALIMENTAZIONE:** 400 VAC, trifase. Circuiti di protezione integrati contro sovraccarichi, extra-tensioni in ingresso.

**CANopen INTERFACE CONNECTOR:** RJ45 with integrated termination resistor.

**CONNETTORI INTERFACCIA CANopen:** RJ45 con resistenza di terminazione integrata.

**PC CONNECTOR:** The amplifier can be set and monitored by means of Personal Computer RS232 interface.

**CONNETTORE PC:** Impostazioni e monitor tramite personal computer via RS232.

**CONNECTION** for external regenerative resistor (optional).

**CONNESSIONE** per resistenza di frenatura esterna (opzionale).

**CONTROL POWER SUPPLY CONNECTOR** 24 VDC.

**CONNETTORE ALIMENTAZIONE LOGICA** 24 VDC.

**I/O CONNECTOR:** Control pulse train (clock + direction; forward + backward pulse; 90° phase shift) or analog signal (proportional to speed or torque). 8 inputs and 8 outputs setting by user.

**CONNETTORE SEGNALI:** Comando a treno d' impulsi (clock + direzione; forward + backward pulse; 90° phase shift) o con segnale analogico (proporzionale a Velocità o Coppia).

**MOTOR POWER CONNECTION - CONNESSIONE POTENZA MOTORE**

**ENCODER CONNECTOR - CONNETTORE ENCODER**

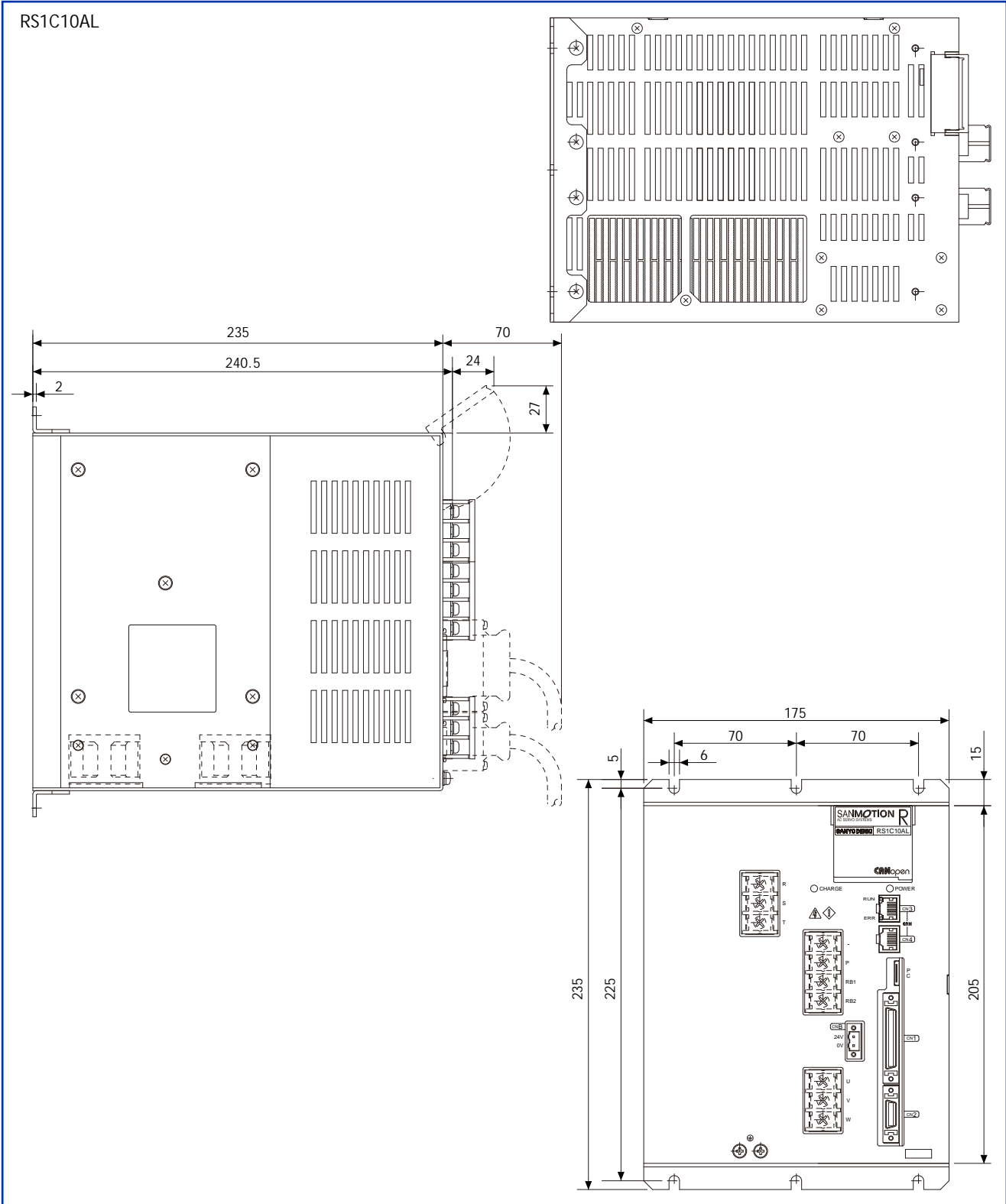


### CANopen MAIN FEATURES

- Mode of Operation: Homing Mode, Profile Velocity Mode, Profile Position Mode, Profile Torque Mode, Interpolated Position Mode.
- Fast capture "freeze" function.
- EDS file available.

TECHNICAL DATA DATI TECNICI	CANopen Control and STEP/DIRECTION Analog Input Controllo CANopen e STEP/DIRECTION Analog Input
MODEL MODELLO	RS1C10AL
MAX CURRENT CORRENTE MAX. EROGABILE	100 Amp
MOTOR OUTPUT STAGE STADIO DI USCITA MOTORE	IGBT, PWM control, sinusoidal current
POWER SUPPLY VOLTAGE TENSIONE DI ALIMENTAZIONE POTENZA	Three-phase 380 VAC to 480 VAC (+10%, -15%) 50/60 Hz (± 3 Hz)
LOGIC SUPPLY VOLTAGE TENSIONE DI ALIMENTAZIONE LOGICA	24 VDC (+15%, -15%)
DIMENSIONS (mm) DIMENSIONI (mm)	175x235x235
MASS (kg) MASSA (kg)	8.5

## “RS1C” SERIES AC SERVOAMPLIFIERS: CANopen VERSION OUTLINE DRAWINGS



## 400 VAC SERVOAMPLIFIERS AZIONAMENTI BRUSHLESS 400 VAC

RS1C SERIES AC SERVOAMPLIFIERS - TRADITIONAL INTERFACE  
AZIONAMENTI SERIE RS1C - INTERFACCIA TRADIZIONALE

**FIVE DIGIT DISPLAY AND OPERATION KEY:** It allows to view and modify parameters and monitor in real time the behavior of the system.

**DISPLAY A 5 CIFRE e TASTIERA DI PROGRAMMAZIONE:** Per visualizzare e modificare i parametri e monitorare in tempo reale il funzionamento del sistema.

**PC CONNECTOR:** The amplifier can be set and monitored by means of Personal Computer RS232 interface.

**CONNETTORE PC:** Impostazioni e monitor tramite personal computer via RS232.

**CONTROL POWER SUPPLY CONNECTOR 24 VDC.**  
**CONNETTORE ALIMENTAZIONE LOGICA 24 VDC.**

**I/O CONNECTOR:** Control pulse train (clock + direction; forward + backward pulse; 90° phase shift) or analog signal (proportional to speed or torque). 8 inputs and 8 outputs setting by user.

**CONNETTORE SEGNALI:** Comando a treno d' impulsi (clock + direzione; forward + backward pulse; 90° phase shift) o con segnale analogico (proporzionale a Velocità o Coppia).

**ENCODER CONNECTOR - CONNETTORE ENCODER**

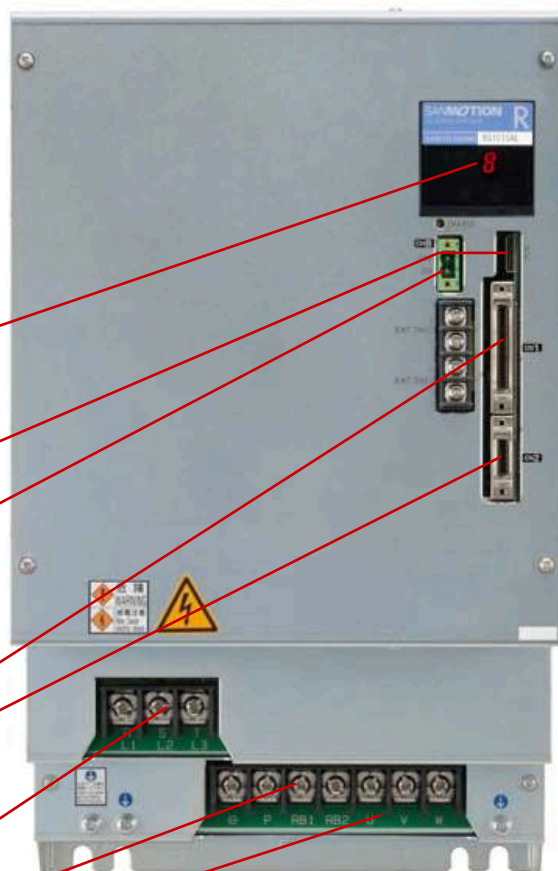
**POWER CONNECTION:** 400 VAC, three-phase. Built-in protection circuits against overload and input overvoltage.

**CONNESSIONE ALIMENTAZIONE:** 400 VAC, trifase. Circuiti di protezione integrati contro sovraccarichi, extra-tensioni in ingresso.

**CONNECTION** for external regenerative resistor (optional).

**CONNESSIONE** per resistenza di frenatura esterna (opzionale).

**MOTOR POWER CONNECTION - CONNESSIONE POTENZA MOTORE**

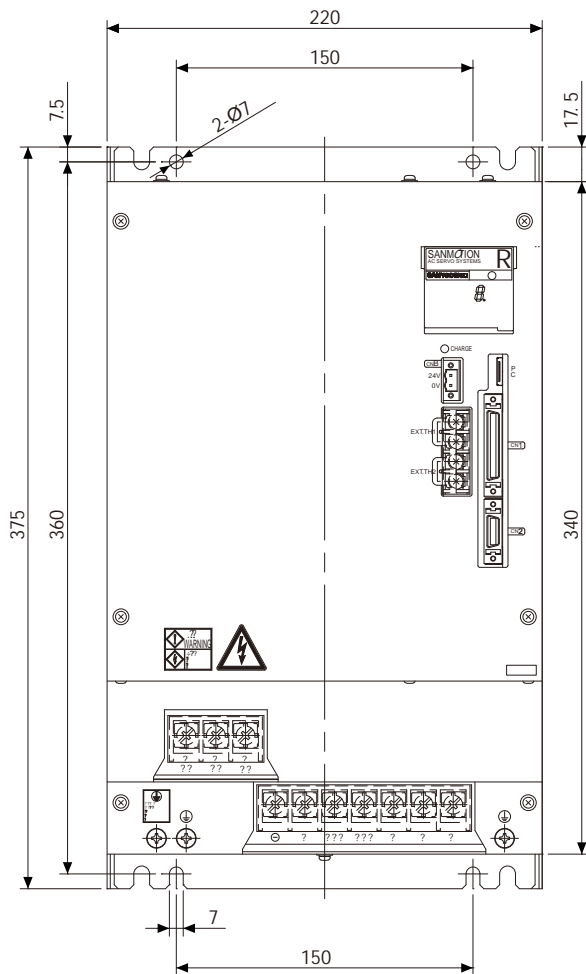
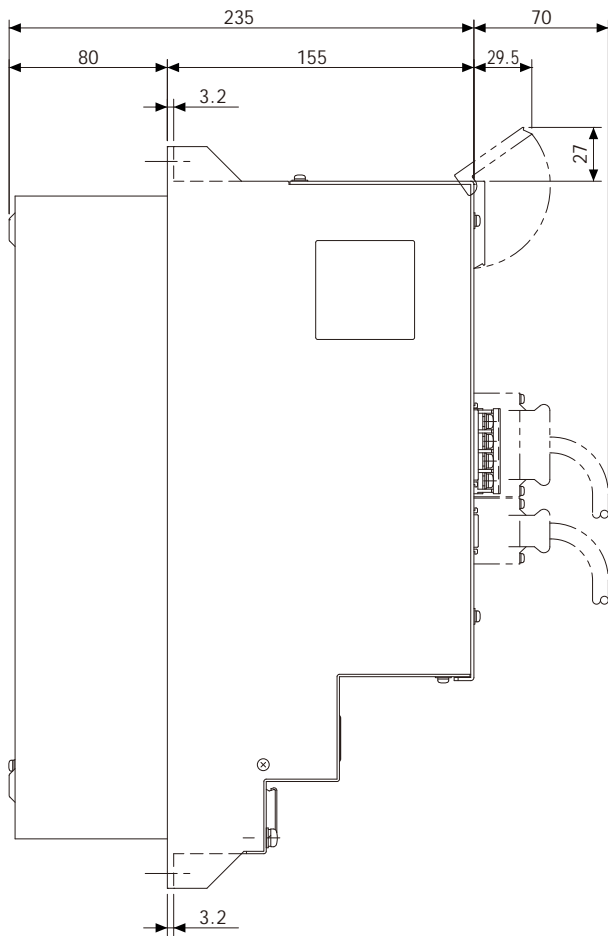
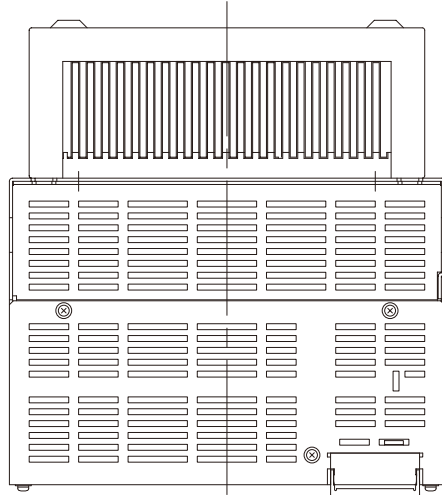


TECHNICAL DATA DATI TECNICI	Position, Velocity, Torque Control (Control Mode Switching available) Controllo in Posizione, Velocità, Coppia (con possibilità di Switching Control Mode)
MODEL MODELLO	RS1D15AA
MAX CURRENT CORRENTE MAX. EROGABILE	150 Amp
MOTOR OUTPUT STAGE STADIO DI USCITA MOTORE	IGBT, PWM control, sinusoidal current
POWER SUPPLY VOLTAGE TENSIONE DI ALIMENTAZIONE POTENZA	Three-phase 380 VAC to 480 VAC (+10%, -15%) 50/60 Hz (± 3 Hz)
LOGIC SUPPLY VOLTAGE TENSIONE DI ALIMENTAZIONE LOGICA	24 VDC (+15%, -15%)
DIMENSIONS (mm) DIMENSIONI (mm)	220x235x375
MASS (kg) MASSA (kg)	11.0



## “RS1C” SERIES AC SERVOAMPLIFIERS: STEP/DIRECTION ANALOG INPUT VERSION OUTLINE DRAWINGS

RS1D15AA



Dimensions mm.

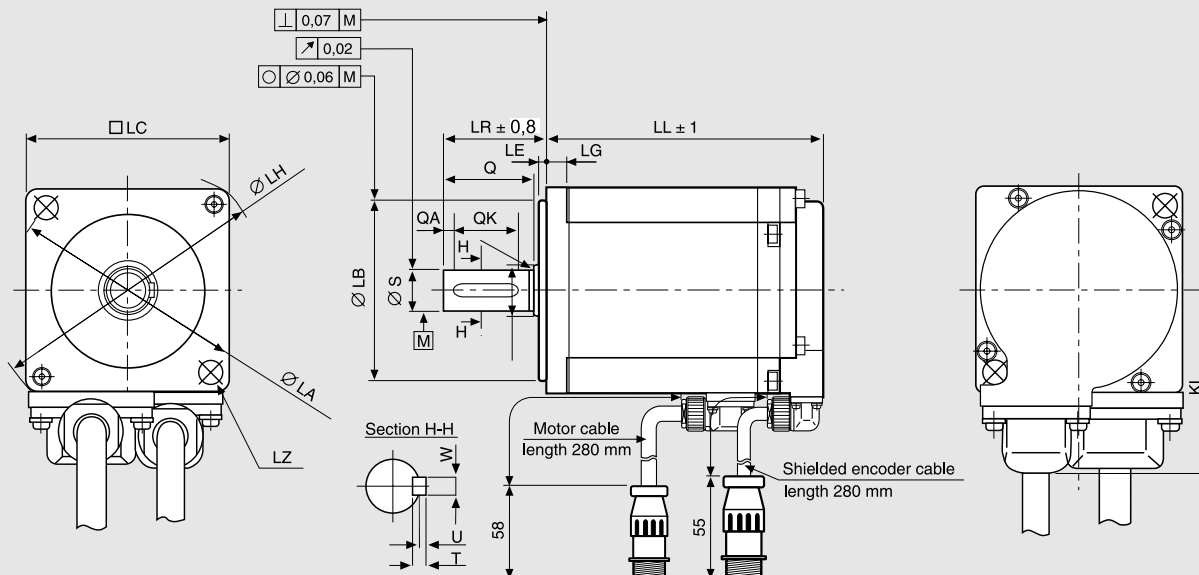




# R2AA04010FXH1CM (R2AA04010FCH1CM6)

**SANYODENKI**  
**SANMOTION**

## Dimensions (Unit:mm)



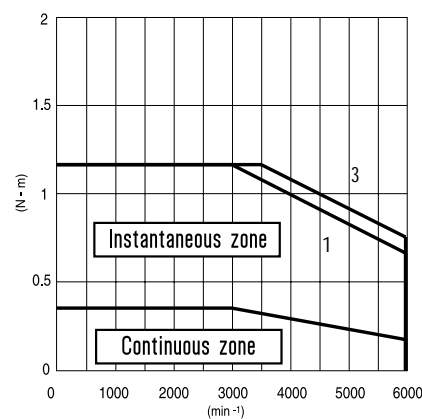
without brake LL	with brake LL	LG	KL	LA	LB	LE	LH	LC	LZ	LR	S	Q	QA	QK	W	T	U	OE	LT
72	108	5	35.4	46	<sup>0</sup> 30-0.021	2.5	56	40	2-Ø4.5	25	<sup>0</sup> 8-0.009	20	2	12	3	3	1.2	--	--

## FEATURES

MODEL	R2AA04010FXH1CM
NOMINAL POWER [version with brake] (W)	100 [90]
NOMINAL SPEED (rpm)	3000
MAXIMUM SPEED (rpm)	6000
NOMINAL TORQUE (Nm)	0.318
STALL TORQUE (Nm)	0.318
MAXIMUM TORQUE (Nm)	1.18
INERTIA (Kg*m <sup>2</sup> )	0.0627×10 <sup>-4</sup>
ENCODER (imp./rev)	131072 (17 bit)
PROTECTION DEGREE	IP67*
WEIGHT [version with brake] (Kg)	0.39 [0.62]

\* Protection degree IP67 (except for the shaft hole and the edge of the cable).

## TORQUE CURVE R2AA04010F [100W] + RS1A01



WITHOUT BRAKE  
R2AA04010FXH1CM

Indicated performances refer to motor controlled by related RS1 standard amplifiers, RS2 EtherCAT and the new driver RS3.

- 1 = torque curve with single-phase power supply
- 3 = torque curve with three-phase power supply

*Le prestazioni indicate si riferiscono ai motori pilotati con il relativo azionamento Serie R nella versione standard RS1, RS2 EtherCAT e il nuovo driver RS3.*

- 1 = curva di coppia con alimentazione di potenza monofase
- 3 = curva di coppia con alimentazione di potenza trifase



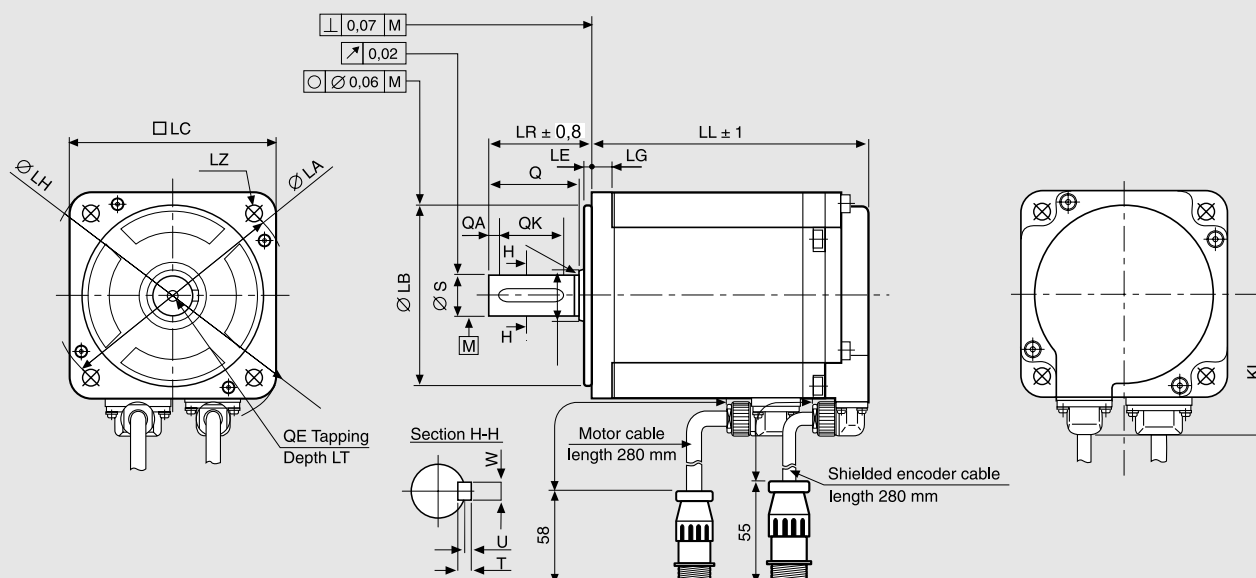
WITH BRAKE  
R2AA04010FCH1CM6

Suggested amplifiers: RS1A01AA, RS1A01AL, RS2A03A0K, RS3A02A0AL2

# R2AA06020FXH11M (R2AA06020FCH11M)

**SANYO DENKI  
SANMOTION**

## Dimensions (Unit:mm)



without brake LL	with brake LL	LG	KL	LA	LB	LE	LH	LC	LZ	LR	S	Q	QA	QK	W	T	U	QE	LT
69.5	97.5	6	44.6	70	$50-0.025$	3.0	82	60	4- $\emptyset 5.5$	30	$14-0.011$	25	2	20	5	5	2	M5	12

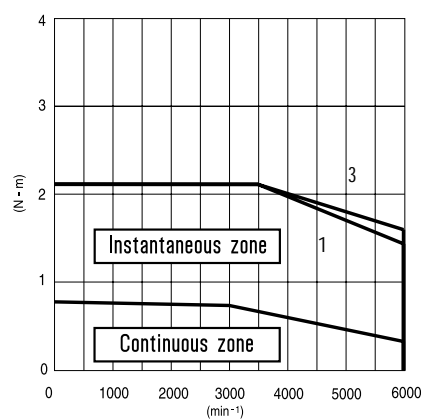
## FEATURES

MODEL	R2AA06020FXH11M
NOMINAL POWER [version with brake] (W)	200
NOMINAL SPEED (rpm)	3000
MAXIMUM SPEED (rpm)	6000
NOMINAL TORQUE (Nm)	0.637
STALL TORQUE (Nm)	0.686
MAXIMUM TORQUE (Nm)	2.20
INERTIA (Kg*m <sup>2</sup> )	$0.219 \times 10^{-4}$
ENCODER (imp./rev)	131072 (17 bit)
PROTECTION DEGREE	IP67
WEIGHT [version with brake] (Kg)	0.84 [1.19]

\* Protection degree IP67 (except for the shaft hole and the edge of the cable).

## TORQUE CURVE

R2AA06020F [200W] + RS1A01



R.T.A. s.r.l. PAVIA (ITALY) SANYO DENKI CO.,Ltd (JAPAN)

WITHOUT BRAKE  
R2AA06020FXH11M



Indicated performances refer to motor controlled by related RS1 standard amplifiers, RS2 EtherCAT and the new driver RS3.

- 1 = torque curve with single-phase power supply
- 3 = torque curve with three-phase power supply

*Le prestazioni indicate si riferiscono ai motori pilotati con il relativo azionamento Serie R nella versione standard RS1, RS2 EtherCAT e il nuovo driver RS3.*

- 1 = curva di coppia con alimentazione di potenza monofase
- 3 = curva di coppia con alimentazione di potenza trifase

WITH BRAKE  
R2AA06020FCH11M

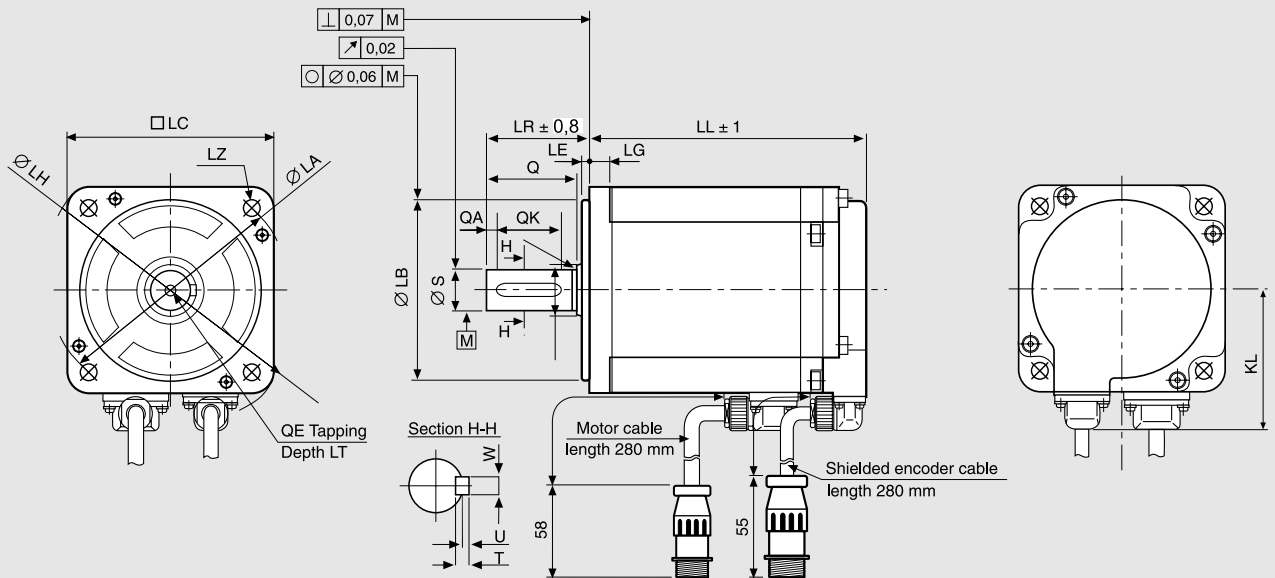


Suggested amplifiers: RS1A01AA, RS1A01AL, RS2A03A0K, RS3A02A0AL2

# R2AA06040FXH11M (R2AA06040FCH11M)

SANYO DENKI  
SANMOTION

## Dimensions (Unit:mm)



without brake LL	with brake LL	LG	KL	LA	LB	LE	LH	LC	LZ	LR	S	Q	QA	QK	W	T	U	OE	LT
95.5	123.5	6	44.6	70	$50-0.025^0$	3.0	82	60	4-Ø5.5	30	$14-0.011^0$	25	2	20	5	5	2	M5	12

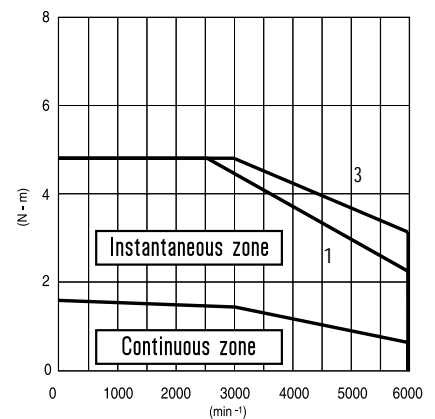
## FEATURES

MODEL	R2AA06040FXH11M
NOMINAL POWER [version with brake] (W)	400 [360]
NOMINAL SPEED (rpm)	3000
MAXIMUM SPEED (rpm)	6000
NOMINAL TORQUE (Nm)	1.270
STALL TORQUE (Nm)	1.370
MAXIMUM TORQUE (Nm)	4.80
INERTIA (Kg·m <sup>2</sup> )	$0.412 \times 10^{-4}$
ENCODER (imp./rev)	131072 (17 bit)
PROTECTION DEGREE	IP67
WEIGHT [version with brake] (Kg)	1.30 [1.65]

\* Protection degree IP67 (except for the shaft hole and the edge of the cable).

## TORQUE CURVE

R2AA06040F [400W] + RS1A03



WITHOUT BRAKE  
R2AA06040FXH11M

Indicated performances refer to motor controlled by related RS1 standard amplifiers, RS2 EtherCAT and the new driver RS3.

- 1 = torque curve with single-phase power supply
- 3 = torque curve with three-phase power supply

*Le prestazioni indicate si riferiscono ai motori pilotati con il relativo azionamento Serie R nella versione standard RS1, RS2 EtherCAT e il nuovo driver RS3.*

- 1 = curva di coppia con alimentazione di potenza monofase
- 3 = curva di coppia con alimentazione di potenza trifase



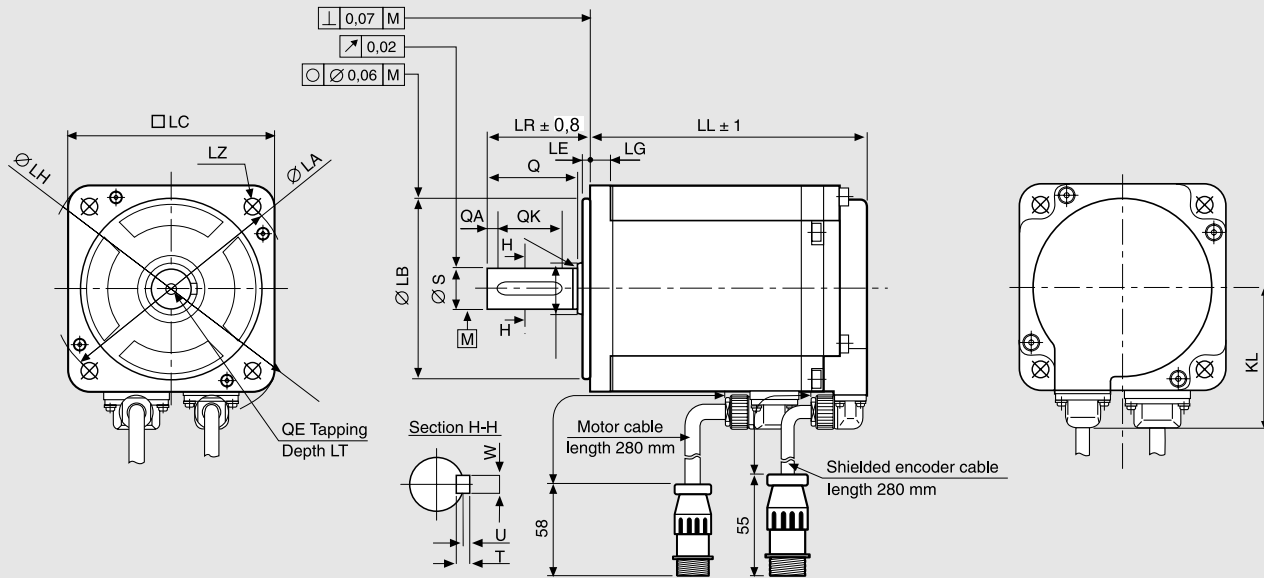
WITH BRAKE  
R2AA06040FCH11M

Suggested amplifiers: RS1A03AA, RS1A03AL, RS2A03A0K, RS3A02A0AL2

# R2AA08075FXH11M (R2AA08075FCH11M)

SANYO DENKI  
SANMOTION

## Dimensions (Unit:mm)



without brake LL	with brake LL	LG	KL	LA	LB	LE	LH	LC	LZ	LR	S	Q	QA	QK	W	T	U	QE	LT
107.3	143	8	54.4	90	<sup>0</sup> 70-0.030	3.0	108	80	4-Ø6.6	40	<sup>0</sup> 16-0.011	35	4	25	5	5	2	M5	12

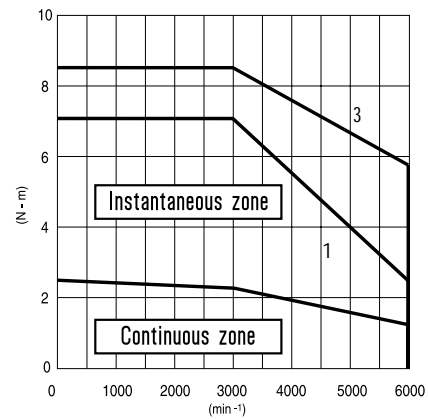
## FEATURES

MODEL	R2AA08075FXH11M	
NOMINAL POWER	(W)	750
NOMINAL SPEED	(rpm)	3000
MAXIMUM SPEED	(rpm)	6000
NOMINAL TORQUE	(Nm)	2.390
STALL TORQUE	(Nm)	2.550
MAXIMUM TORQUE	(Nm)	8.50
INERTIA	(Kg·m <sup>2</sup> )	1.820×10 <sup>-4</sup>
ENCODER	(imp./rev)	131072 (17 bit)
PROTECTION DEGREE		IP67
WEIGHT	[version with brake] (Kg)	2.60 [3.45]

\* Protection degree IP67 (except for the shaft hole and the edge of the cable).

## TORQUE CURVE

R2AA08075F [750W] + RS1A03



R.T.A. s.r.l. PAVIA (ITALY) SANYO DENKI CO., Ltd (JAPAN)

WITHOUT BRAKE  
R2AA08075FXH11M



Indicated performances refer to motor controlled by related RS1 standard amplifiers, RS2 EtherCAT and the new driver RS3.

- 1 = torque curve with single-phase power supply
- 3 = torque curve with three-phase power supply

*Le prestazioni indicate si riferiscono ai motori pilotati con il relativo azionamento Serie R nella versione standard RS1, RS2 EtherCAT e il nuovo driver RS3.*

- 1 = curva di coppia con alimentazione di potenza monofase
- 3 = curva di coppia con alimentazione di potenza trifase

WITH BRAKE  
R2AA08075FCH11M

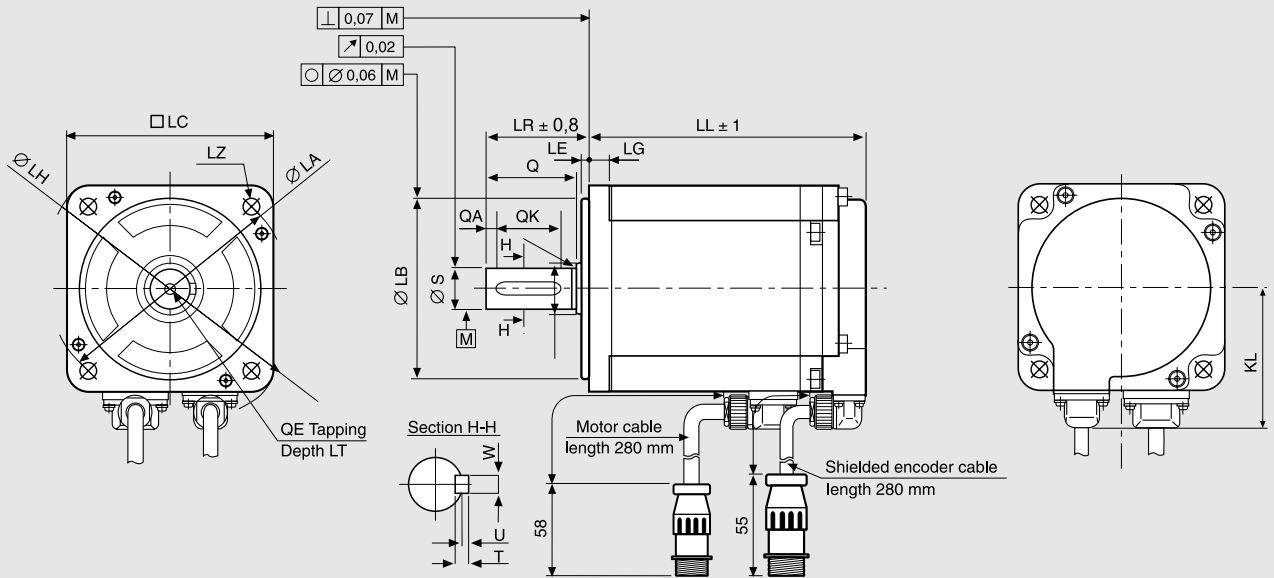


Suggested amplifiers: RS1A03AA, RS1A03AL, RS2A03A0K, RS3A03A0AL2

# R2AAB8100HXH29M (R2AAB8100HCH29M)

**SANYO DENKI**  
**SANMOTION**

## Dimensions (Unit:mm)



without brake LL	with brake LL	LG	KL	LA	LB	LE	LH	LC	LZ	LR	S	Q	QA	QK	W	T	U	QE	LT
137	163	8	59.4	100	<sup>0</sup> <sub>80-0.003</sub>	3.0	115.5	86	4-Ø6.6	35	<sup>0</sup> <sub>16-0.011</sub>	30	2	25	5	5	2	M5	12

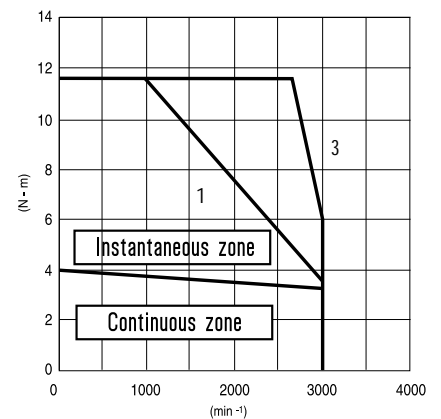
## FEATURES

MODEL	R2AAB8100HXH29M	
NOMINAL POWER	(W)	1000
NOMINAL SPEED	(rpm)	3000
MAXIMUM SPEED	(rpm)	3000
NOMINAL TORQUE	(Nm)	3.180
STALL TORQUE	(Nm)	3.920
MAXIMUM TORQUE	(Nm)	11.60
INERTIA	(Kg·m <sup>2</sup> )	2.383×10 <sup>-4</sup>
ENCODER	(imp./rev)	131072 (17 bit)
PROTECTION DEGREE		IP67*
WEIGHT	[version with brake] (Kg)	3.50 [4.30]

\* Protection degree IP67 (except the edge of the cable).

## TORQUE CURVE

R2AAB8100H [1kW] + RS1A03



Indicated performances refer to motor controlled by related RS1 standard amplifiers, RS2 EtherCAT and the new driver RS3.

- 1 = torque curve with single-phase power supply
- 3 = torque curve with three-phase power supply

*Le prestazioni indicate si riferiscono ai motori pilotati con il relativo azionamento Serie R nella versione standard RS1, RS2 EtherCAT e il nuovo driver RS3.*

- 1 = curva di coppia con alimentazione di potenza monofase
- 3 = curva di coppia con alimentazione di potenza trifase



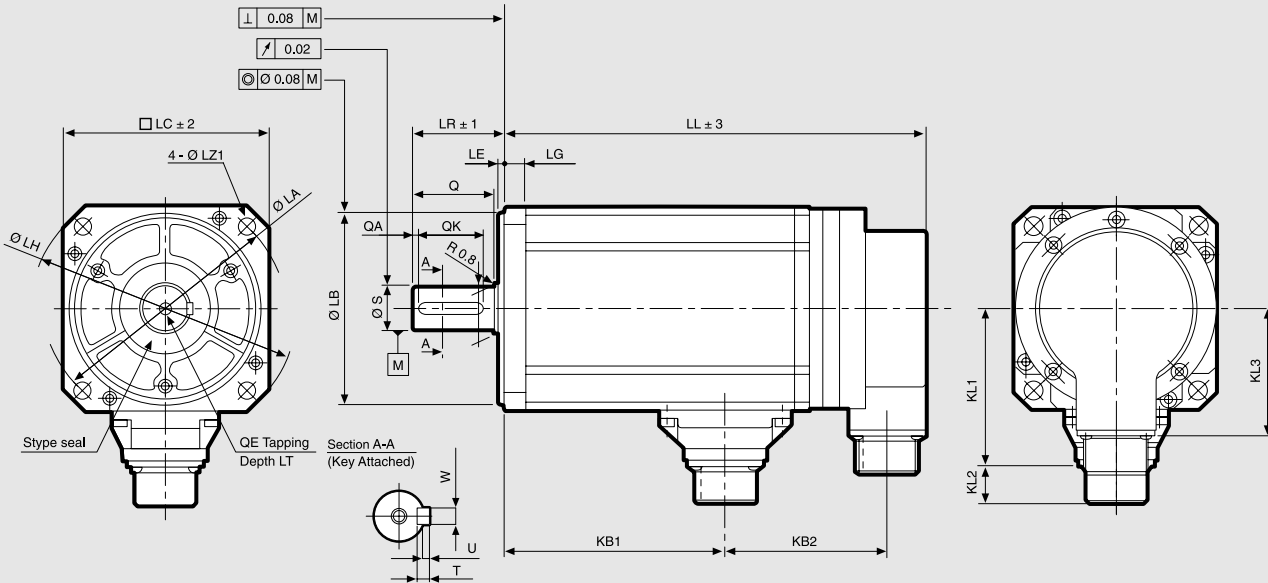
Suggested amplifiers: RS1A03AA, RS1A03AL, RS2A03A0K, RS3A03A0AL2



# Q1AA10150DXS00M (Q1AA10150DCS00M)

**SANYO DENKI**  
**SANMOTION**

## Dimensions (Unit:mm)



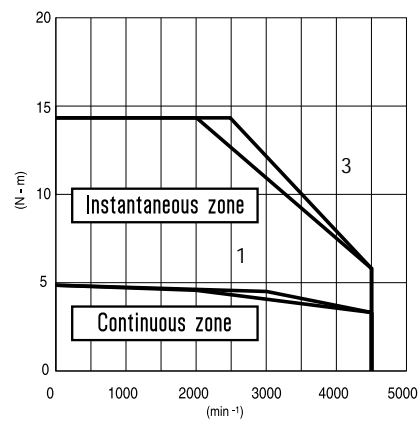
without brake		with brake		KL1	KL2	KL3	LG	LA	LB	LE	LH	LC	LZ1	LZ2	LR	S	Q	OA	OK	W	T	U	KB1	OE	LT
LL	KB2	LL	KB2																						
208	80	244	116	78	19	70	10	115	<sup>0</sup> 95-0.035	3	130	100	9	--	45	<sup>0</sup> 22-0.013	40	3	32	<sup>0</sup> 6-0.030	6	2.5	109	M6	20

## FEATURES

MODEL	Q1AA10150DXS00M	
NOMINAL POWER	(W)	1500
NOMINAL SPEED	(rpm)	3000
MAXIMUM SPEED	(rpm)	4500
NOMINAL TORQUE	(Nm)	4.79
STALL TORQUE	(Nm)	4.90
MAXIMUM TORQUE	(Nm)	14.7
INERTIA	(Kg·m <sup>2</sup> )	1.61×10 <sup>-4</sup>
ENCODER	(imp./rev)	8000
PROTECTION DEGREE		IP67
WEIGHT	[version with brake] (Kg)	6.0 [8.0]

## TORQUE CURVE

Q1AA10150D [1.5kW] + RS1A05



R.T.A. s.r.l. PAVIA (ITALY) SANYO DENKI CO., Ltd (JAPAN)

WITHOUT BRAKE  
Q1AA10150DXS00M



Indicated performances refer to motor controlled by related RS1 standard amplifiers, RS2 EtherCAT and the new driver RS3.

- 1 = torque curve with single-phase power supply
- 3 = torque curve with three-phase power supply

*Le prestazioni indicate si riferiscono ai motori pilotati con il relativo azionamento Serie R nella versione standard RS1, RS2 EtherCAT e il nuovo driver RS3.*

- 1 = curva di coppia con alimentazione di potenza monofase
- 3 = curva di coppia con alimentazione di potenza trifase

WITH BRAKE  
Q1AA10150DCS00M

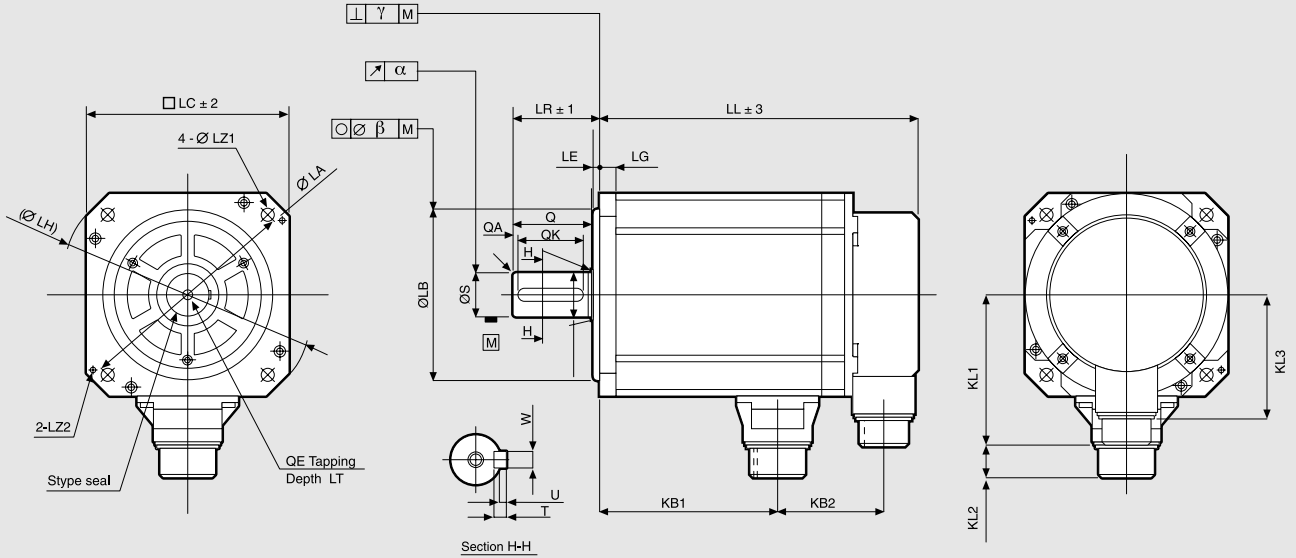


Suggested amplifiers: RS1A05AA, RS1A05AL, RS2A05A8K

# Q1AA13300DXS00M (Q1AA13300DCS00M)

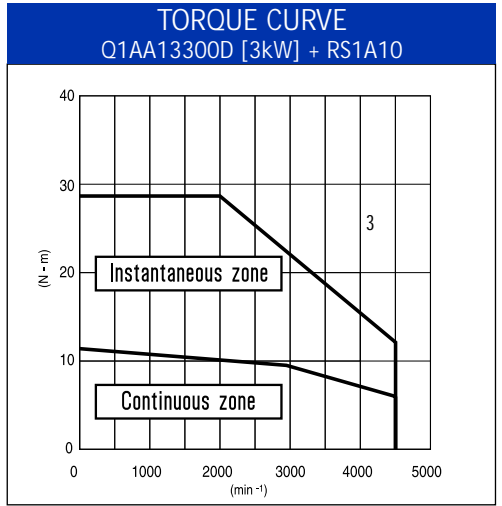
**SANYO DENKI**  
**SANMOTION**

## Dimensions (Unit:mm)



without brake		with brake		KL1	KL2	KL3	LG	LA	LB	LE	LH	LC	LZ1	LZ2	LR	S	Q	QA	OK	W	T	U	KB1	QE	LT
LL	KB2	LL	KB2																						
205	67	254	117	98	21	78	12	145	$110-0.035^0$	4	165	130	9	M6	55	$28-0.013^0$	50	3	42	$8-0.036^0$	7	3	117	M8	25

FEATURES		
MODEL	Q1AA13300DXS00M	
NOMINAL POWER	(W)	3000
NOMINAL SPEED	(rpm)	3000
MAXIMUM SPEED	(rpm)	4500
NOMINAL TORQUE	(Nm)	9.50
STALL TORQUE	(Nm)	10.80
MAXIMUM TORQUE	(Nm)	28.4
INERTIA	(Kg*m <sup>2</sup> )	$4.92 \times 10^{-4}$
ENCODER	(imp./rev)	8000
PROTECTION DEGREE		IP67
WEIGHT	[version with brake] (Kg)	11.4 [13.0]



Indicated performances refer to motor controlled by related RS1 standard amplifiers, RS2 EtherCAT and the new driver RS3.

1 = torque curve with single-phase power supply  
3 = torque curve with three-phase power supply

*Le prestazioni indicate si riferiscono ai motori pilotati con il relativo azionamento Serie R nella versione standard RS1, RS2 EtherCAT e il nuovo driver RS3.*

1 = curva di coppia con alimentazione di potenza monofase  
3 = curva di coppia con alimentazione di potenza trifase

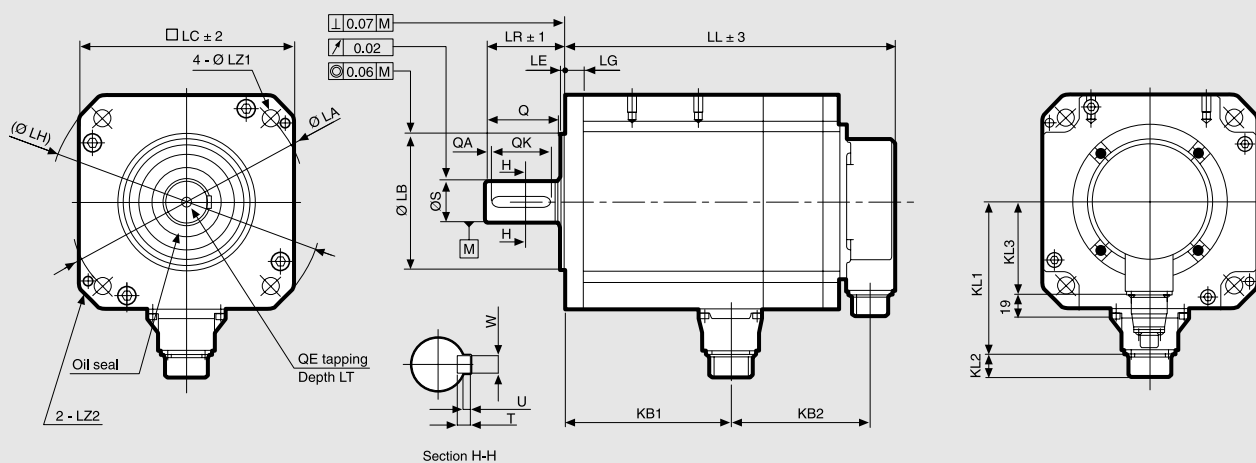


Suggested amplifiers: RS1A10AA

# Q2AA13150HXS00M (Q2AA13150HCS00M)

**SANYO DENKI**  
**SANMOTION**

## Dimensions (Unit:mm)



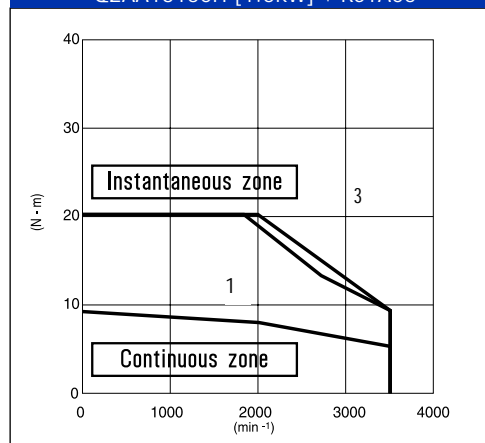
without brake		with brake		KL1	KL2	KL3	LG	LA	LB	LE	LH	LC	LZ1	LZ2	LR	S	Q	QA	QK	W	T	U	KB1	QE	LT
LL	KB2	LL	KB2	98	21	80	12	145	$110-0.035$	4	165	130	9	M6	55	$22-0.013$	50	3	42	$6-0.030$	6	2.5	81	M6	20
169	67	205	103																						

## FEATURES

MODEL	Q2AA13150HXS00M	
NOMINAL POWER	(W)	1500
NOMINAL SPEED	(rpm)	2000
MAXIMUM SPEED	(rpm)	3500
NOMINAL TORQUE	(Nm)	7.5
STALL TORQUE	(Nm)	9.0
MAXIMUM TORQUE	(Nm)	20.3
INERTIA	(Kg·m <sup>2</sup> )	$7.94 \times 10^{-4}$
ENCODER	(imp./rev)	8000
PROTECTION DEGREE		IP67
WEIGHT	[version with brake] (Kg)	7.8 [9.4]

## TORQUE CURVE

Q2AA13150H [1.5kW] + RS1A05



R.T.A. s.r.l. PAVIA (ITALY) SANYO DENKI CO., Ltd (JAPAN)

WITHOUT BRAKE  
Q2AA13150HXS00M



Indicated performances refer to motor controlled by related RS1 standard amplifiers, RS2 EtherCAT and the new driver RS3.

- 1 = torque curve with single-phase power supply
- 3 = torque curve with three-phase power supply

*Le prestazioni indicate si riferiscono ai motori pilotati con il relativo azionamento Serie R nella versione standard RS1, RS2 EtherCAT e il nuovo driver RS3.*

- 1 = curva di coppia con alimentazione di potenza monofase
- 3 = curva di coppia con alimentazione di potenza trifase

WITH BRAKE  
Q2AA13150HCS00M



Suggested amplifiers: RS1A05AA, RS1A05AL, RS2A05A8K

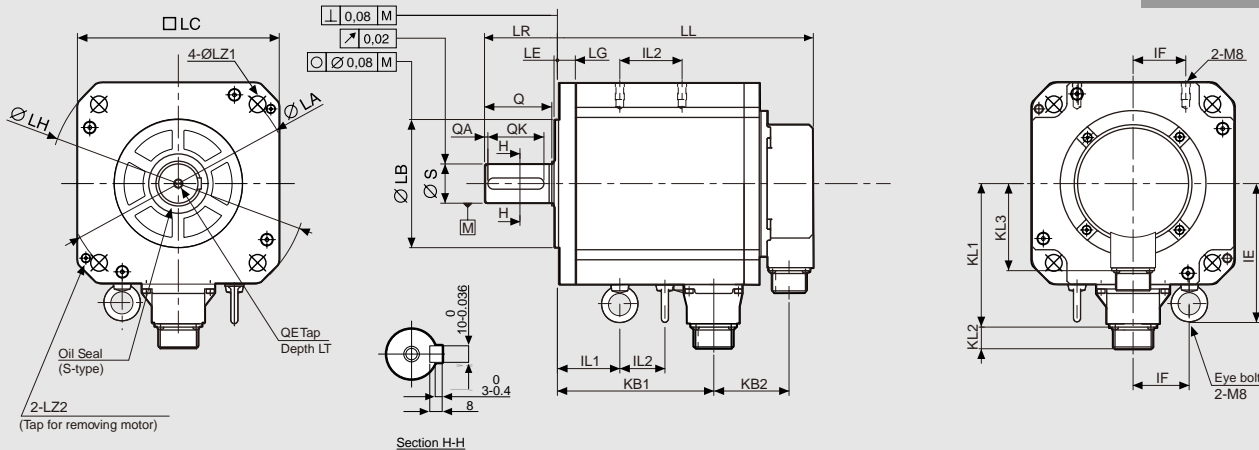


# Q2CA18450HXS00M

SANYO DENKI  
SANMOTION

## Dimensions (Unit:mm)

400  
VAC

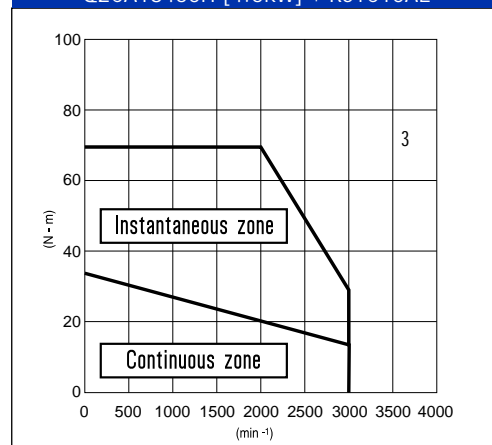


LL	KB2	KL1	KL2	KL3	LG	LA	LB	LE	LH	LC	LZ1	LZ2	LR	S	Q	QA	QK	IL1	IL2	IF	IE	KB1	QE	LT
220	68	123	19	78	16	200	0 1114.3-0.035	3	$\varnothing$ 230	$\square$ 180	$\varnothing$ 13.5	M8	65±1	0 $\varnothing$ 35-0.016	60	3	50	61	35	50	124	130	M8	25

## FEATURES

MODEL	Q2CA18450HXS00M	
NOMINAL POWER	(W)	4500
NOMINAL SPEED	(rpm)	2000
MAXIMUM SPEED	(rpm)	3000
NOMINAL TORQUE	(Nm)	21.5
STALL TORQUE	(Nm)	21.5
MAXIMUM TORQUE	(Nm)	70.0
INERTIA	(Kg·m <sup>2</sup> )	46.5×10 <sup>-4</sup>
ENCODER	(imp./rev)	8000
PROTECTION DEGREE		IP67
WEIGHT	(Kg)	21.7

## TORQUE CURVE Q2CA18450H [4.5kW] + RS1C10AL



R.T.A. s.r.l. PAVIA (ITALY) SANYO DENKI CO.,Ltd (JAPAN)

WITHOUT BRAKE



(Version with brake available on request)

Indicated performances refer to motor controlled by related RS1C10AL CANopen and RS1D15AA standard amplifiers.

3 = torque curve with three-phase power supply

Le prestazioni indicate si riferiscono ai motori pilotati con il relativo azionamento Serie R nella versione RS1C10AL CANopen e nella versione standard RS1D15AA.

3 = curva di coppia con alimentazione di potenza trifase

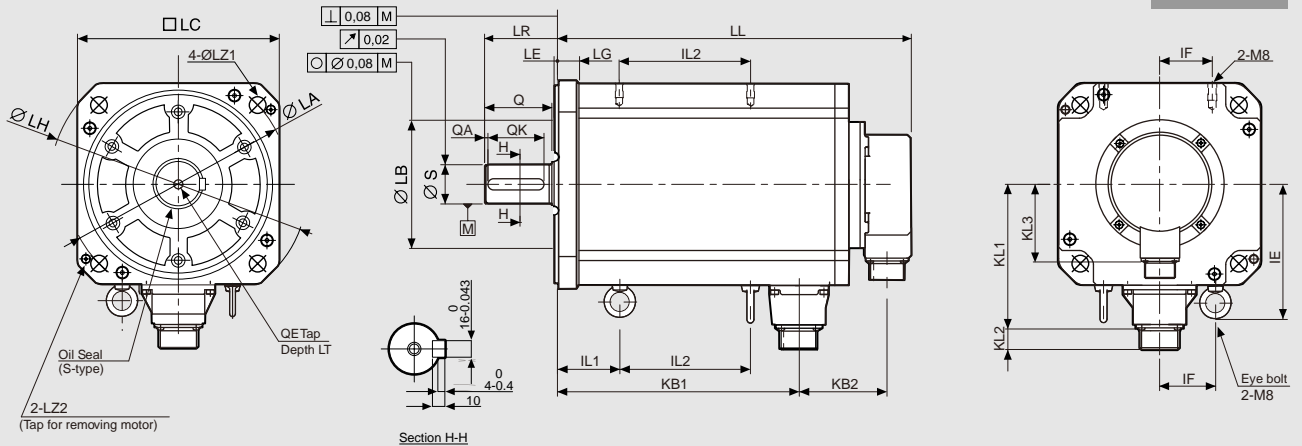
Suggested amplifiers: RS1C10AL (400V)

# Q2CA22700HXS00M

**SANYO DENKI  
SANMOTION**

## Dimensions (Unit:mm)

**400  
VAC**



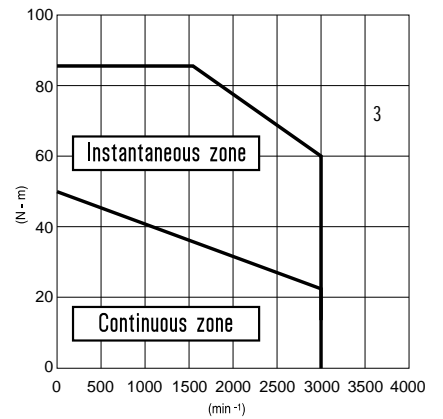
LL	KB2	KL1	KL2	KL3	LG	LA	LB	LE	LH	LC	LZ1	LZ2	LR	S	Q	QA	QK	IL1	IL2	IF	IE	KB1	QE	LT
310	82	162	22	79	19	235	$\varnothing 200-0.046$	4	$\varnothing 270$	$\square 220$	$\varnothing 13.5$	M10	79	$\varnothing 55-0.019$	--	3	67	55	110	60	142	207	M10	25

### FEATURES

MODEL	Q2CA22700HXS00M	
NOMINAL POWER	(W)	7000
NOMINAL SPEED	(rpm)	2000
MAXIMUM SPEED	(rpm)	3000
NOMINAL TORQUE	(Nm)	33.4
STALL TORQUE	(Nm)	50.1
MAXIMUM TORQUE	(Nm)	86.0
INERTIA	(Kg*m <sup>2</sup> )	$185 \times 10^{-4}$
ENCODER	(imp./rev)	8000
PROTECTION DEGREE		IP67
WEIGHT	(Kg)	52.8

### TORQUE CURVE

Q2CA22700H [7.0kW] + RS1C10AL



Indicated performances refer to motor controlled by related RS1C10AL CANopen and RS1D15AA standard amplifiers.

3 = torque curve with three-phase power supply

Le prestazioni indicate si riferiscono ai motori pilotati con il relativo azionamento Serie R nella versione RS1C10AL CANopen e nella versione standard RS1D15AA.

3 = curva di coppia con alimentazione di potenza trifase

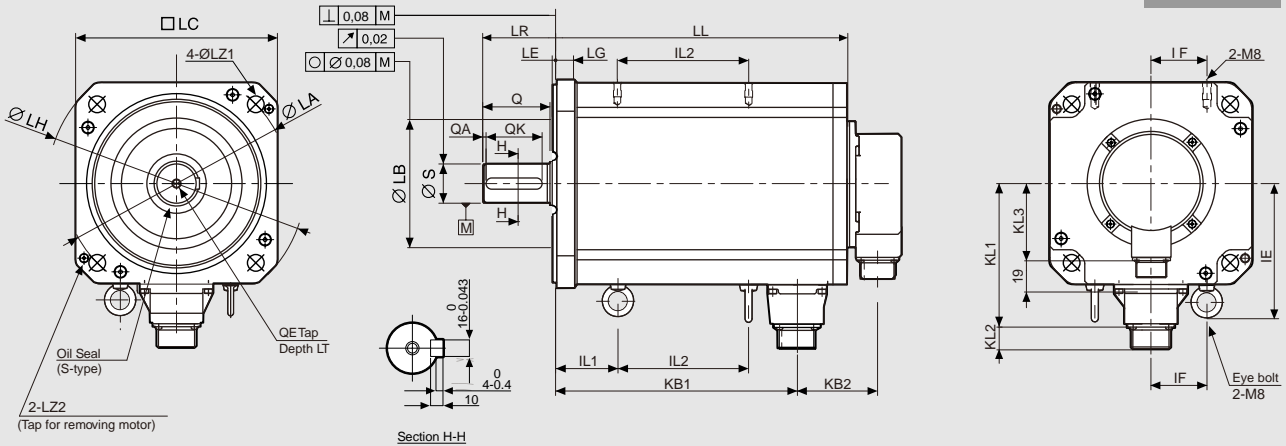
Suggested amplifiers: RS1C10AL (400V)

# Q2CA2215KVXS00M

SANYO DENKI  
SANMOTION

## Dimensions (Unit:mm)

400  
VAC



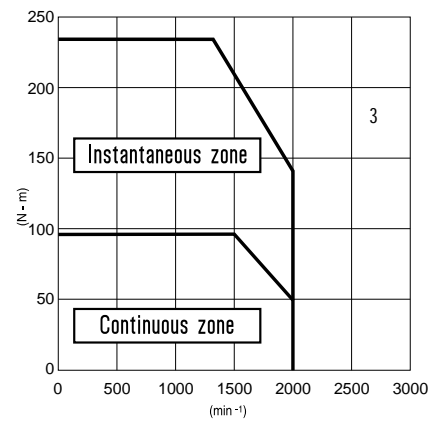
LL	KB2	KL1	KL2	KL3	LG	LA	LB	LE	LH	LC	LZ1	LZ2	LR	S	Q	QA	QK	IL1	IL2	IF	IE	KB1	QE	LT
394	73	162	22	79	19	235	0 Ø200-0.046	4	Ø270	□220	Ø13.5	M10	79	0 Ø55-0.019	--	3	67	69	180	60	142	300	M10	25

## FEATURES

MODEL	Q2CA2215KVXS00M	
NOMINAL POWER	(W)	15000
NOMINAL SPEED	(rpm)	1500
MAXIMUM SPEED	(rpm)	2000
NOMINAL TORQUE	(Nm)	95.5
STALL TORQUE	(Nm)	95.5
MAXIMUM TORQUE	(Nm)	230
INERTIA	(Kg*m <sup>2</sup> )	255×10 <sup>-4</sup>
ENCODER	(imp./rev)	8000
PROTECTION DEGREE		IP67
WEIGHT	(Kg)	70.0

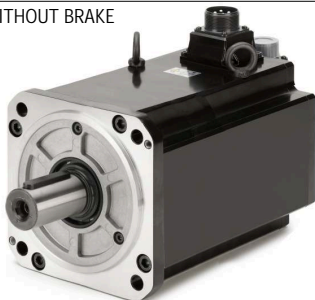
## TORQUE CURVE

Q2CA2215KV [15.0kW] + RS1C10AL



R.T.A. s.r.l. PAVIA (ITALY) SANYO DENKI CO., Ltd (JAPAN)

WITHOUT BRAKE



(Version with brake available on request)

Indicated performances refer to motor controlled by related RS1C10AL CANopen and RS1D15AA standard amplifiers.

3 = torque curve with three-phase power supply

Le prestazioni indicate si riferiscono ai motori pilotati con il relativo azionamento Serie R nella versione RS1C10AL CANopen e nella versione standard RS1D15AA.

3 = curva di coppia con alimentazione di potenza trifase

Suggested amplifiers: RS1D15AA (400V)

## ACCESSORIES

### CONNECTION CABLES: AMPLIFIER-MOTORS

All motors supplied are already equipped with high quality connectors.

To ease installation, connection cables of different length are available, for any motor-amplifiers coupling. The available codes are detailed below:

### CAVI DI CONNESSIONE: AZIONAMENTO-MOTORE

Tutti i motori forniti sono già corredati di connettore circolare.

Per facilitare le operazioni di installazione, sono disponibili i cavi di connessione, in diverse lunghezze, per tutti gli accoppiamenti motore-azionamento. Ecco il dettaglio dei codici disponibili:

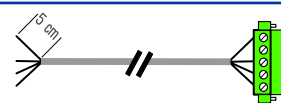
CABLES		LENGHTS				
MOTORS	MODEL (STANDARD/CANopen)	1 meter	2 meters	3,3 meters	5 meters	10 meters
R2	POWER SUPPLY CABLE MOTOR CABLE ENCODER CABLE BRAKE CABLE	CVABPY1M CVMBPY1M CVEBR01M CVFRPM01M	CVABPY2M CVMBPY2M CVEBR02M CVFRPM02M	CVABPY3M3 CVMBPY3M3 CVEBR03M3 CVFRPM03M5	CVABPY5M CVMBPY5M CVEBR05M CVFRPM05M	CVABPY10M CVMBPY10M CVEBR10M CVFRPM10M
Q2	MOTOR CABLE (Q2AA10150BX548M) MOTOR CABLE (Q2AA13150HX500M) ENCODER CABLE BRAKE CABLE	CVMBPYP21M CVMBPYP61M CVEBP61M CVFPM01M	CVMBPYP22M CVMBPYP62M CVEBP62M CVFPM02M	CVMBPYP23M3 CVMBPYP63M3 CVEBP63M3 CVFPM03M5	CVMBPYP25M CVMBPYP65M CVEBP65M CVFPM05M	CVMBPYP210M CVMBPYP610M CVEBP610M CVFPM10M
Q1	MOTOR CABLE (Q1AA10150DX500M) MOTOR CABLE (Q1AA3300DX500M) ENCODER CABLE BRAKE CABLE	CVMBPYP21M CVMBQA10Q301M CVEBP61M CVFPM01M	CVMBPYP22M CVMBQA10Q302M CVEBP62M CVFPM02M	CVMBPYP23M3 -- CVEBP63M3 CVFPM03M5	CVMBPYP25M CVMBQA10Q305M CVEBP65M CVFPM05M	CVMBPYP210M CVMBQA10Q310M CVEBP610M CVFPM10M
MOTORS	MODEL (EtherCAT)	1 meter	2 meters	3,3 meters	5 meters	10 meters
R2	POWER SUPPLY CABLE MOTOR CABLE ENCODER CABLE BRAKE CABLE SAFETY - SIL CABLE	CVABRA01M CVMBRAR01M CVEBRAR01M CVFRPM01M CVSILBRA01M	CVABRA02M CVMBRAR02M CVEBRAR02M CVFRPM02M CVSILBRA02M	CVABRA03M3 CVMBRAR03M3 CVEBRAR03M3 CVFRPM03M5 CVSILBRA03M3	CVABRA05M CVMBRAR05M CVEBRAR05M CVFRPM05M --	CVABRA10M CVMBRAR10M CVEBRAR10M CVFRPM10M --
Q2	MOTOR CABLE (Q2AA10150BX548M) MOTOR CABLE (Q2AA13150HX500M) ENCODER CABLE BRAKE CABLE SAFETY - SIL CABLE	-- CVMBP6AR01M CVEBQAR01M CVFPM01M CVSILBRA01M	-- CVMBP6AR02M CVEBQAR02M CVFPM02M CVSILBRA02M	-- CVMBP6AR03M3 CVEBQAR03M3 CVFPM03M5 CVSILBRA03M3	-- CVMBP6AR05M CVEBQAR05M CVFPM05M --	-- CVMBP6AR10M CVEBQAR10M CVFPM10M --
Q1	MOTOR CABLE (Q1AA10150DX500M) ENCODER CABLE BRAKE CABLE SAFETY - SIL CABLE	CVMBP2AR01M CVEBQAR01M CVFPM01M CVSILBRA01M	CVMBP2AR02M CVEBQAR02M CVFPM02M CVSILBRA02M	CVMBP2AR03M3 CVEBQAR03M3 CVFPM03M5 CVSILBRA03M3	CVMBP2AR05M CVEBQAR05M CVFPM05M --	CVMBP2AR10M CVEBQAR10M CVFPM10M --
MOTORS	MODEL (RS3)	1 meter	2 meters	3,3 meters	5 meters	10 meters
R2	POWER SUPPLY CABLE MOTOR CABLE ENCODER CABLE BRAKE CABLE SAFETY - SIL CABLE	CVABRA01M CVMBRAR01M CVEBRAR01M CVFRPM01M --	CVABRA02M CVMBRAR02M CVEBRAR02M CVFRPM02M CVSIORAD02M	CVABRA03M3 CVMBRAR03M3 CVEBRAR03M3 CVFRPM03M5 --	CVABRA05M CVMBRAR05M CVEBRAR05M CVFRPM05M --	CVABRA10M CVMBRAR10M CVEBRAR10M CVFRPM10M --



MOTOR CABLE



ENCODER CABLE



POWER SUPPLY CABLE



BRAKE CABLE R2



SAFETY - SIL CABLE RS2



SAFETY - SIL CABLE RS3

Flex chain cables available under request.

Sono disponibili, su richiesta, i cavi flex chain per posa mobile.



## ACCESSORIES






### SERIAL CONNECTION KIT: STARTER KIT RSK

The kit includes:

- Serial connection cable [length 3 m]
- R.T.A. - R Series DVD-Rom: includes R-Setup Software and Manuals

### SG SERIES PLANETARY GEARBOXES

The following table shows the servomotors coverage with SG Series planetary gearboxes:

MOTORS	SIZE 070 (i=10)	SIZE 090 (i=10)	SIZE 090 (i=25)	SIZE 120 (i=10)	SIZE 120 (i=25)
					
R2AA06020	SG-P11-070-010-12-R2-0X00	--	SG-P11-090-025-15-R2-0X00	--	--
R2AA06040	SG-P11-070-010-12-R2-0X00	SG-P11-090-010-12-R2-0400	SG-P11-090-025-15-R2-0X00	--	--
R2AA08075	--	SG-P11-090-010-12-R2-0750	--	SG-P11-120-010-12-R2-0750	SG-P11-120-025-15-R2-0750
R2AAB8100	--	--	--	SG-P11-120-010-12-R2-1000	SG-P11-120-025-15-R2-1000

MADE IN ITALY

l = from 05 to 25

IP64

### KIT DI CONNESSIONE SERIALE: STARTER KIT RSK

Il kit comprende:

- Cavo di connessione seriale [lunghezza 3 m]
- R.T.A. - R Series DVD-Rom: include R-Setup Software e Manuali

### RIDUTTORI EPICICLOIDALI SERIE SG

Nella tabella seguente sono indicati i servomotori e le taglie di riduttori SG disponibili:

### REGENERATIVE RESISTOR

Under special conditions of use, such as, for example, sudden decelerations with high inertial load, it could be necessary to dissipate the reverse energy generated by the motor.

This need is displayed by the amplifier through a specific alarm. Some amplifiers are equipped with an internal regenerative resistor. In case of worst conditions, an external regenerative resistor is necessary. The following models are available on demand:

### RESISTENZE DI FRENATURA

In particolari condizioni di utilizzo, quali ad esempio brusche decelerazioni associate ad elevato carico inerziale, può essere necessario dissipare esternamente l'energia inversa generata dal motore.

Tale necessità viene segnalata dall'azionamento grazie ad un allarme specifico. Alcuni modelli di azionamenti sono dotati di una resistenza di frenatura interna. In casi particolarmente gravosi si rende necessario l'utilizzo di una resistenza di frenatura esterna. Ecco i modelli disponibili su richiesta:

AMPLIFIER	RESISTOR MODEL	VALUE [Ω]	POWER [W]
RS1A01AA - RS1A01AL	RB 10006 - 220W / 100 OHM	100	220
RS1A03AA - RS1A03AL - RS2A03A0K RS3A02A0AL2 - RS3A03A0AL2	RB 05005 - 220W / 50 OHM	50	220
RS1A05AA - RS1A05AL - RS2A05A8K	RB 02030 - 500W / 20 OHM	20	500
RS1A10AA	RB 01030 - 500W / 10 OHM	10	500
RS1C10AL	RB 02030 - 500W / 20 OHM	20	500
RS1D15AA	RB 01430 - 500W / 14 OHM	14	500







R.T.A. s.r.l. - ITALY  
CERTIFICATO DI SISTEMA  
DI GESTIONE QUALITÀ  
N°50 100 2153

#### HEADQUARTERS

R.T.A. s.r.l. - Via E. Mattei  
Fraz. Divisa - 27020 MARCIGNAGO (PV)  
Tel. +39.0382.929.855 - Fax +39.0382.929.150  
www.rta.it - email: info@rta.it

#### NORTH-EAST BRANCH

Via D. Alighieri, 4/A - 30034 MIRA (VE)  
Tel. +39.041.56.00.332 - Fax +39.041.56.00.165  
email: rtane@rta.it

#### CENTER-SOUTH BRANCH

Via D. Alighieri, 41 - 60025 LORETO (AN)  
Tel. +39.071.75.00.433 - Fax +39.071.97.77.64  
email: rtacs@rta.it

#### R.T.A. Deutschland GmbH

Bublitzer Straße 34  
40599 DÜSSELDORF (Germany)  
Tel. +49.211.749.668.60  
Fax +49.211.749.668.66  
www.rta-deutschland.de  
email: info@rta-deutschland.de

#### R.T.A. IBERICA - Motion Control Systems S.L.

C/ Generalitat 22, 1° 3°  
08850 GAVA - BARCELONA (Spain)  
Tel. +34.936.388.805  
Fax +34.936.334.595  
www.rta-iberica.es  
email: info@rta-iberica.es

#### R.T.A. STORE

www.rta-store.com  
www.rta-store.de  
www.rta-store.es



**Motion Control Systems**

**DISAI**  
Automatic Systems  
T-962 448 450 [www.disai.net](http://www.disai.net)



[www.rta.it](http://www.rta.it)