

2024

PRODUCT NEWS



Look Ahead!

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MOTION CONTROLLERS

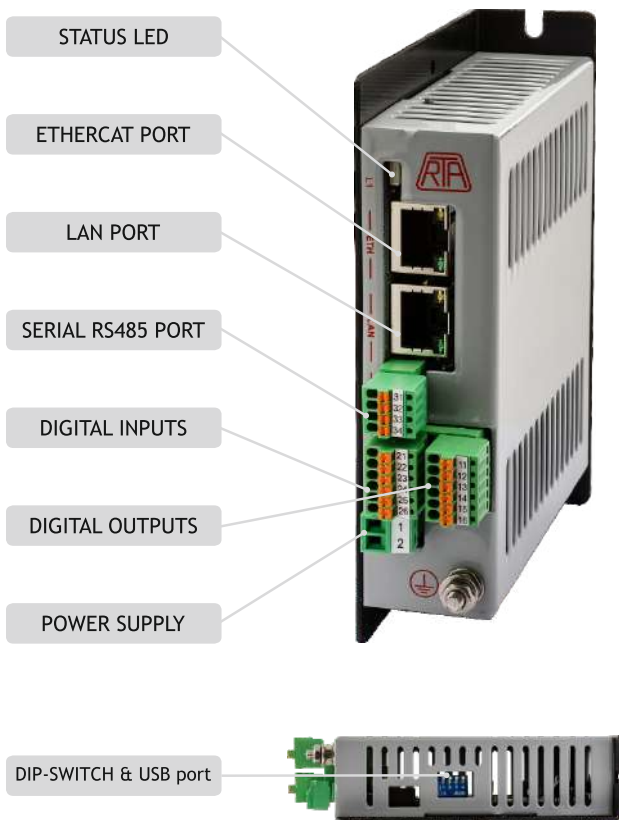


MiniMax Series EtherCAT[®] PLC

INTRODUCTION

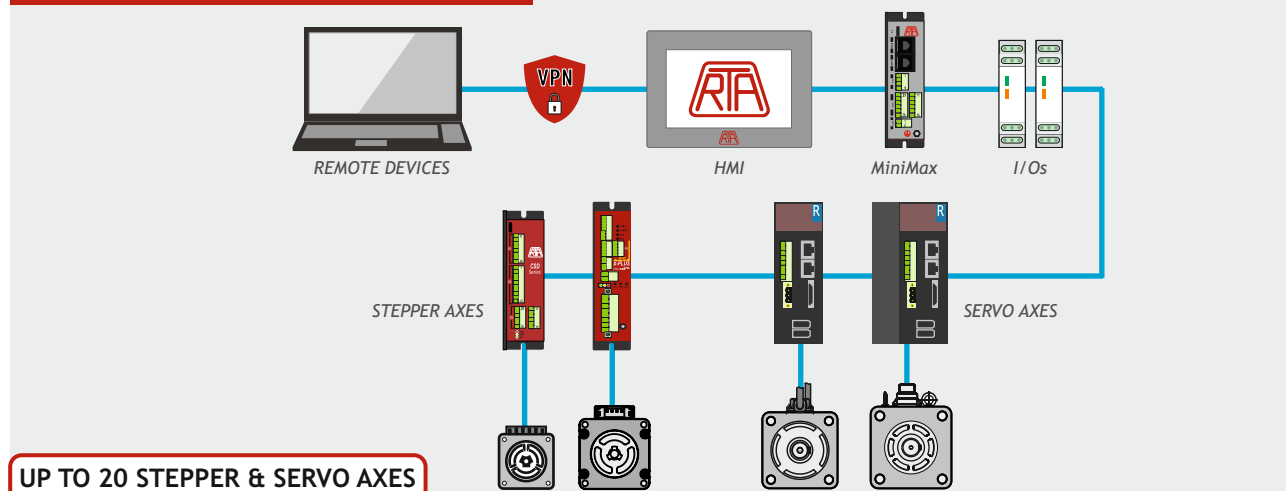
MiniMax is an EtherCAT PLC designed for easy configuration and programming of stepper and servo drives. It allows to develop EtherCAT automation solutions ranging from basic to medium complexity. With an additional LAN port featuring a Modbus TCP/IP server protocol, it can be easily integrated with HMIs, third party PLCs, Industrial PCs and other network devices.

HIGHLIGHTS



- ▶ RTA Studio: unique software environment for configuration and debugging
- ▶ Smart Structured Text programming language with built-in function libraries
- ▶ Full RTA and SANYO DENKI EtherCAT drives compatibility
- ▶ Easy integration with other automation systems by Modbus TCP/IP, UDP and Modbus RTU
- ▶ Up to 20 realtime parallel processes
- ▶ Compact Size: 32x130x106 mm
- ▶ Advanced Axes Motion Interpolation
- ▶ 5 Digital Inputs + 5 Digital Outputs
- ▶ **RTA Wiki** platform available for further technical insights

R.T.A. MiniMax SYSTEM EXAMPLE

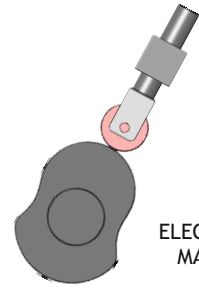


MiniMax versions comparison

MiniMax A1	MiniMax R2
8 basic axes*	20 basic axes
2 advanced axes▲	20 advanced axes

* Basic axes: use the PP, PV and Homing mode of the EtherCAT drives

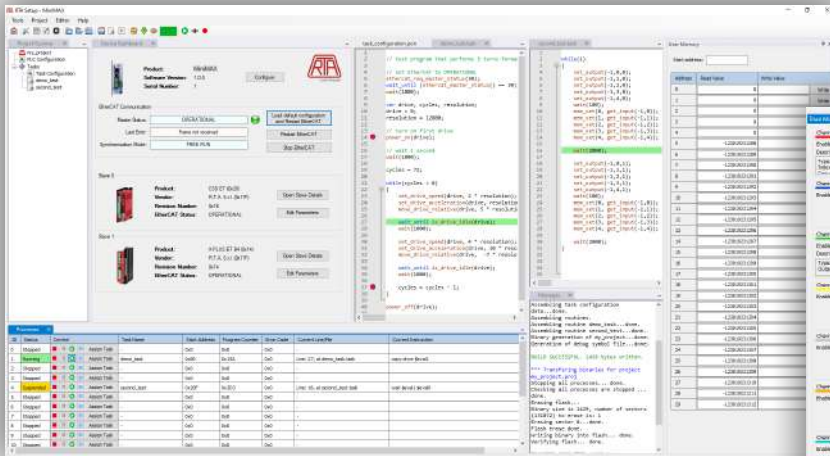
▲ Advanced axes: use CSP of the EtherCAT drives and can do the homing, single axis positioning, mechanical cam and links



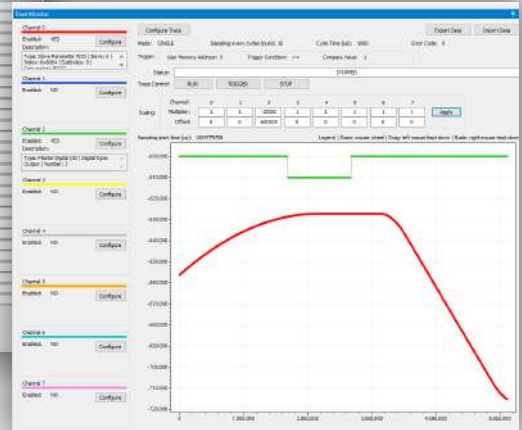
ELECTRICAL CAMS MANAGEMENT

MiniMax Development Environment

Complete integrated environment for Microsoft Windows



Trace monitoring of automation process parameters

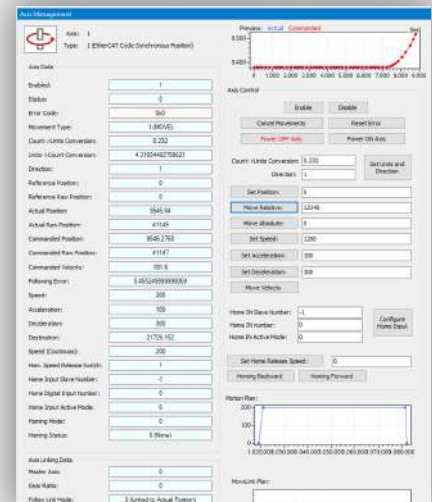


Easy programming language and debugging tools

```

Device Dashboard demo_motion.task
27 power_on_axis(axis);
28
29 // wait 1 second
30 wait(1000);
31
32 cycles = 12;
33
34 while(cycles > 0)
35
36     if (get_input(1, 5) == 1) {
37         set_speed(axis, 2 * 360);
38         set_acceleration(axis, 360);
39         set_deceleration(axis, 360);
40         move_relative(axis, 5 * 360);
41
42
43         set_speed(axis, 4 * 360);
44         set_acceleration(axis, 10 * 360);
45         set_deceleration(axis, 10 * 360);
46         move_relative(axis, -7 * 360);
47
48         wait_until movement_type(axis) == 0;
49         wait(1000);
50
51         cycles = cycles - 1;
52
53     }
54 power_off_axis(axis);
55
    
```

Quick Axis settings and testing setup



Download the MiniMax Series full Datasheet

MAIN FEATURES

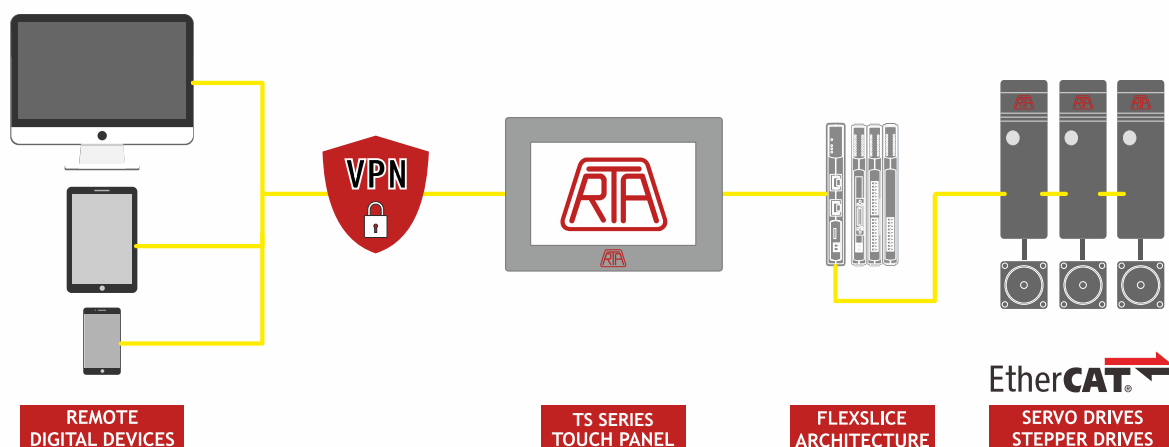
- Four models in two sizes
- Free developer tools
- Optional remote control (VPN)
- Easy integration with R.T.A. products
- R.T.A. support team



MODEL	TS-07-IP-B-08072	TS-07-CMT-A-02078X	TS-07-CMT-A-03072XH2	TS-10-CMT-A-03092X	
SOFTWARE FEATURES	*BASE FUNCTIONS	■	■	■	■
	**ADVANCED FUNCTIONS		■	■	■
	PLC TAG EMBEDDED IN PROJECT	■	■	■	■
	OPC SERVER			■	■
	EXTERNAL DATABASE			■	■
SUPPORT					
<p>*Base functions: Pictres/ Sharpe Library embedded in project, Enhanced Security Mode, VNC Server, Circular Trend Display, Combo Button, Operation Log, OPC UA Client, Picture Viewer, Recipe Database / Reciper View</p> <p>**Advanced functions: e-Mail, Media Player, MQTT (Publisher / Subscriber), USB Camera, IP Camera, VNC Viewer,</p>					
REMOTE CONTROL	EASY ACCESS 2.0 (CRZACEA020)	/	Optional	Optional	Optional
I/O PORT	ETHERNET	10/100 Base-T x 1	10/100 Base-T x 2	10/100 Base-T x 2	10/100 Base-T x 1 10/100/1000 Base-T x 1

HOW THE REMOTE CONTROL WORKS

EasyAccess 2.0 enables the operator to easily connect and monitor the remote HMI from anywhere in the world, through a protected remote VPN connection.

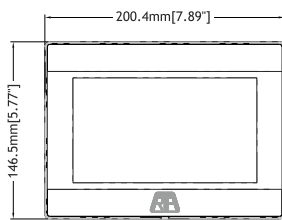


ADVANCED SPECIFICATIONS

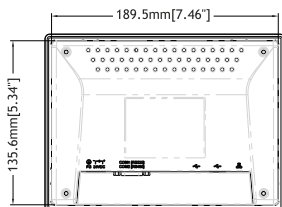
	MODEL	TS-07-IP-B-08072	TS-07-CMT-A-02078X	TS-07-CMT-A-03072XH2	TS-10-CMT-A-03092X
DISPLAY	DISPLAY	7" TFT	7" TFT	7" TFT	9.7" TFT
	RESOLUTION	800x480	800x480	1024x600	1024x768
	BACKLIGHT LIFE TIME	>30,000 hrs.	>30,000 hrs.	>25,000 hrs.	>30,000 hrs.
MEMORY	FLASH	256 Mb	4 Gb	4 Gb	4 Gb
	RAM	128 Mb	1 Gb	1 Gb	1 Gb
PROCESSOR		Dual-core RISC	Quadcore RISC	Quadcore RISC	Quadcore RISC
I/O PORT	USB HOST	USB 2.0 x 1	USB 2.0 x 1	USB 2.0 x 1	USB 2.0 x 1
	COM PORT	COM1 RS-232, COM2 RS-485 2W/4W	COM2 RS-485 2W/4W, COM3 RS-485 2W	COM2 RS-485 2W/4W, COM3 RS-485 2W CAN Bus	COM2 RS-485 2W/4W, COM3 RS-485 2W CAN Bus
RTC		Built-in	Built-in	Built-in	Built-in
CERTIFICATE		CE	CE/UL	CE/UL	CE/UL
DIMENSIONS	DIMENSIONS WxHxD	200.4 x 146.5 x 34 mm	200.3 x 146.3 x 35 mm	200.3 x 146.3 x 35 mm	260.6 x 203.1 x 44.5 mm
	PANEL CUTOUT	192 x 138 mm	192 x 138 mm	192 x 138 mm	250 x 192 mm
ENVIROMENT	PROTECTION STRUCTURE	NEMA4 / IP65 Compliant Front Panel	UL Type 4X (indoor use only)/ NEMA4/ IP66 Compliant Front Panel	UL Type 4X (indoor use only)/ NEMA4/ IP66 Compliant Front Panel	UL Type 4X (indoor use only)/ NEMA4/ IP66 Compliant Front Panel
POWER	INPUT POWER	24 ± 20% VDC	24 ± 20% VDC	24 ± 20% VDC	24 ± 20% VDC
	POWER CONSUMPTION	450 mA at 24VDC	820 mA at 24VDC	850 mA at 24VDC	1 A at 24 VDC
	POWER ISOLATION	Built-in	Built-in	Built-in	Built-in

MECHANICAL DIMENSIONS (mm)

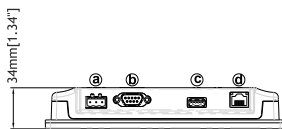
Model TS-07-IP-B-08072



Front View

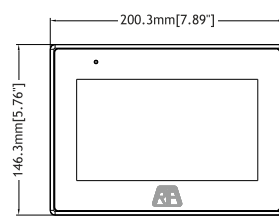


Rear View

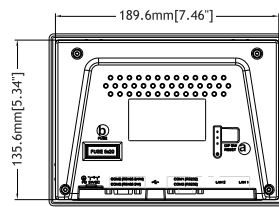


Bottom View

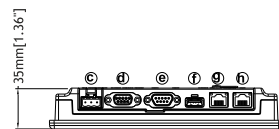
Model TS-07-CMT-A-03072XH2
TS-07-CMT-A-02078X



Front View

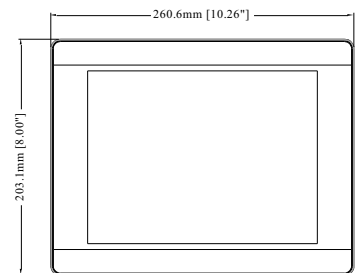


Rear View

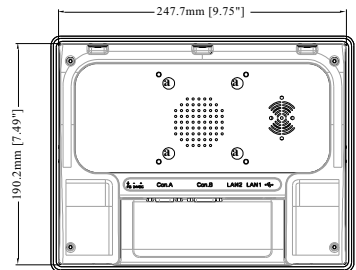


Bottom View

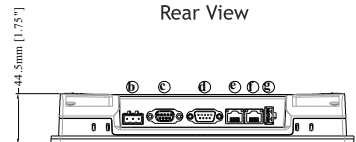
Model TS-10-CMT-A-03092X



Front View



Rear View

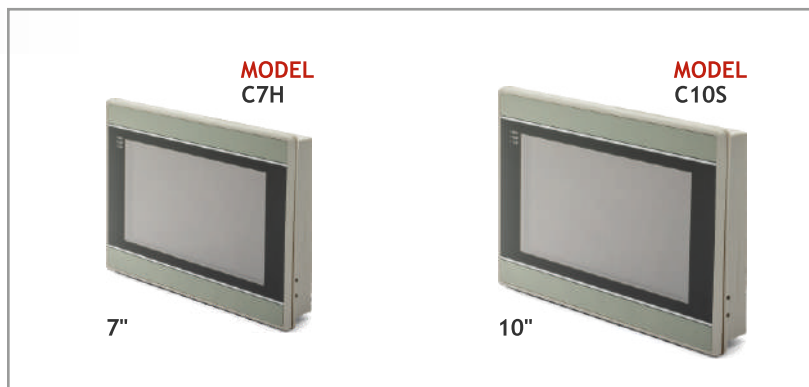


Bottom View

HMI Touch Screen C7H - C10S

MAIN FEATURES

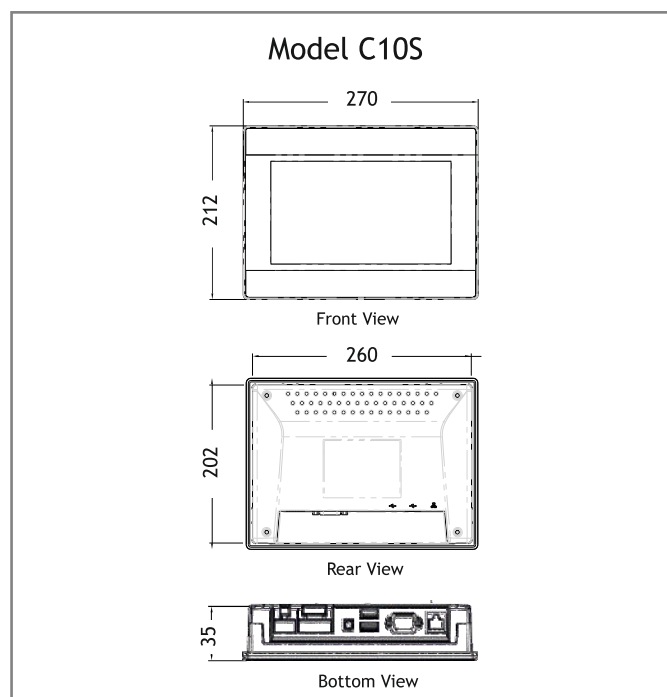
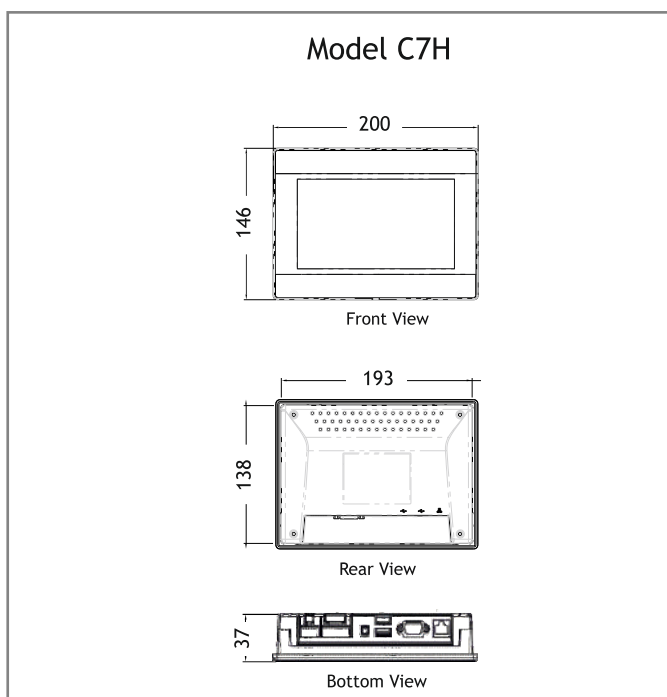
- 2 serial ports , 2 USB ports, SD card
- Compact size for easy installation
- R.T.A. support team



TECHNICAL SPECIFICATIONS

MODEL		C7H	C10S
DISPLAY	DISPLAY	7"	10.1"
	RESOLUTION	1024x600 pixels	1024x600 pixels
MEMORY	FLASH	4 Gb	
	RAM	512 Mb	
DIMENSIONS	DIMENSION	200x146x37 mm	270x212x35 mm
	WEIGHT	0.8 Kg	1.3 Kg
POWER	POWER CONSUMPTION	24±20% VDC	
	INPUT POWER	7 W	10 W

MECHANICAL DIMENSIONS (mm)



SAFETY PLC *Wieland R1.190.1310.0*

INTRODUCTION

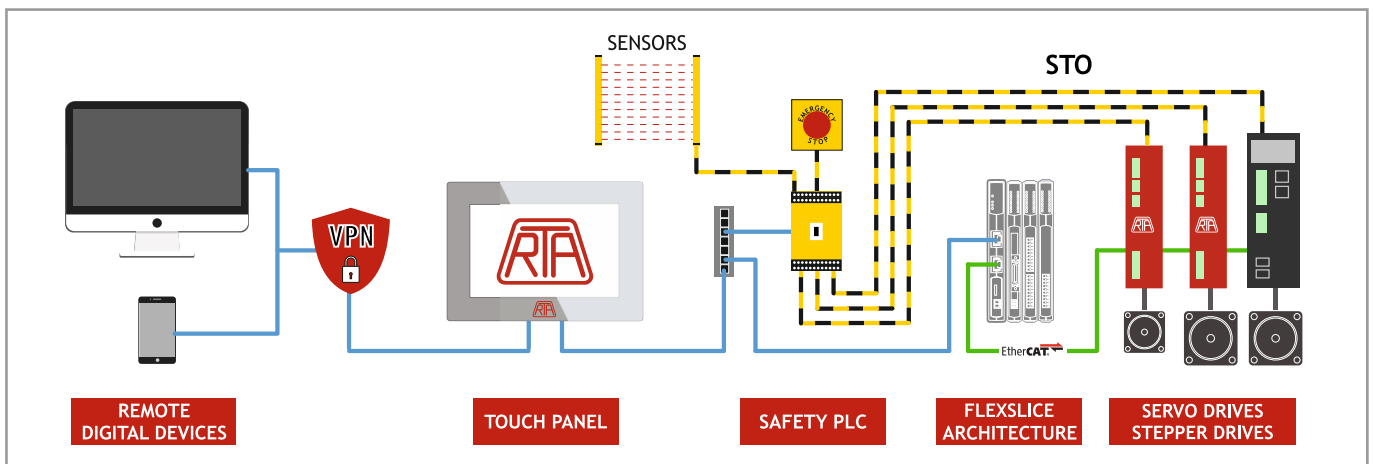
The samosPRO Compact module is suitable for monitoring safety sensors, emergency STOP buttons, safety door switches and door locks, safety light curtains and laser scanners.

HIGHLIGHTS

- 16 safe input, 4 safe output
- 4 configurable I/Os
- Mini-USB and Ethernet ports
- Modbus TCP/IP communication
- Easy integration in the R.T.A. system



R.T.A. SAFETY PLC SYSTEM



MAIN FEATURES

GENERAL FEATURES	
TYPE OF PROTECTION (ACCORDING TO DIN 60529)	IP20
NORMATIVE	EN 62508, EN 62061, EN ISO 13849-1, EN 50156, EN 81-1
CERTIFICATIONS	TUV, UL
SAFETY PARAMETERS	
CATEGORY (ISO 13849-1)	4
PL (ISO 13849-1)	Level e
SIL _{CL} (IEC 62061)	3
HFT	1
T _M	20 a

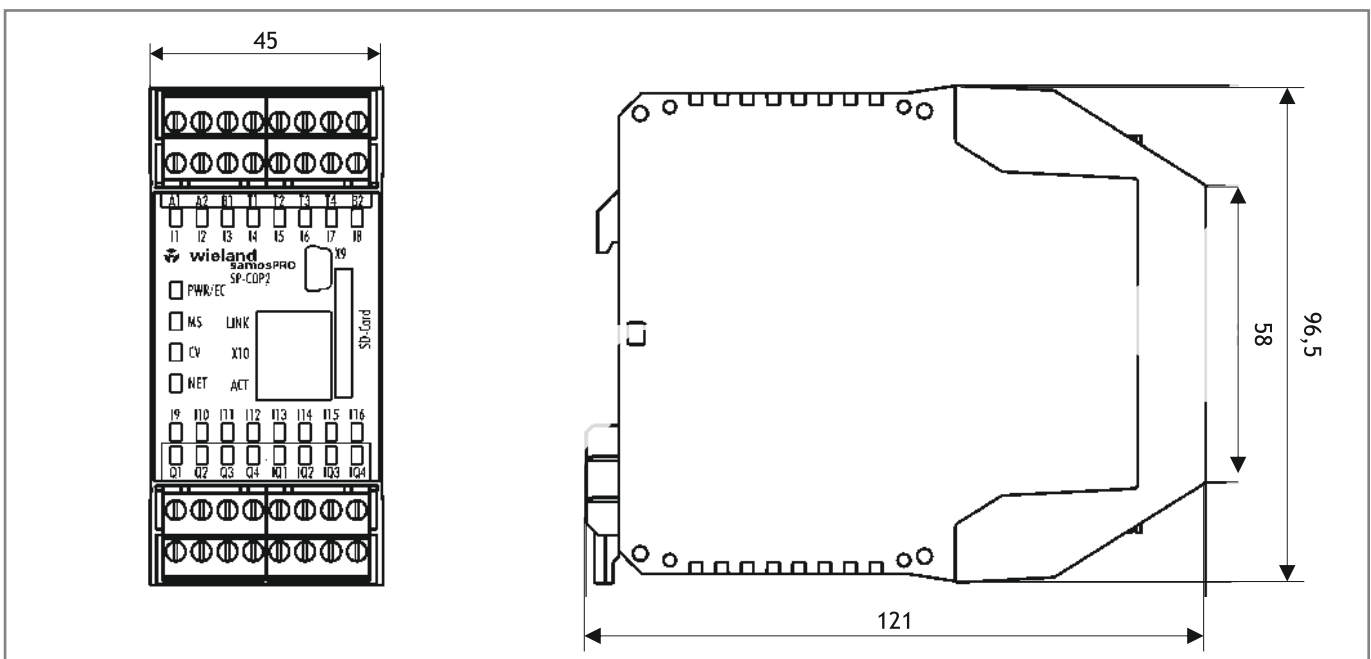
TECHNICAL SPECIFICATIONS

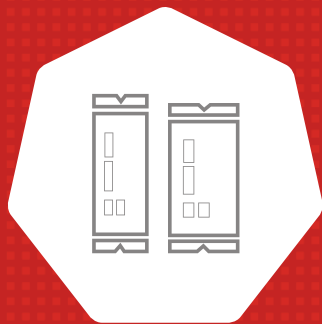
POWER CIRCUIT	
OPERATING VOLTAGE RANGE	24 VDC -30%/+25%
NOMINAL POWER	3,5 W (Logic absorption)
INPUT CIRCUIT	
DIGITAL INPUTS	16 + 4 Configurable
INPUT VOLTAGE RANGE	15 VDC up to 30 VDC
NOMINAL CURRENT	2 mA
OUTPUT CIRCUIT	
DIGITAL OUTPUTS	4 + 4 Configurable
OUTPUT VOLTAGE RANGE	24 VDC
OUTPUT CURRENT I_n PER OUTPUT	4 A (I_{sum} 16 A)
INTERFACE CIRCUIT	
ETHERNET INDUSTRIAL PROTOCOLS	Modbus TCP/IP
PROGRAM MEMORY	External (Mandatory pairing with SD WIELAND R1.190.1000.00)

SAFETY FUNCTIONS

- ✓ Contactless operating selection function
- ✓ Control function of external contactors
- ✓ Contemporaneity button function
- ✓ Operation mode selection function
- ✓ Block restart function
- ✓ Bimanual function
- ✓ Safety function
- ✓ Access control function
- ✓ ON/OFF Delay timer

MECHANICAL DIMENSIONS (mm)





STEPPING MOTOR DRIVES



CSD HT Series Drives

EtherNet/IP™

INTRODUCTION

- New series of stepping motor drives with EtherNet interface, now available with a 3rd generation firmware release and extended current and voltage range.
- Drives optimized for coupling with SANYO DENKI stepping motors, fitted with encoder, but also able to manage third party motors.
- Also available with other interfaces:



MAIN FEATURES

- Modes of operation: Profile Position, Profile Velocity and Homing.
- Wide range of motor phase current setting and motor current overboost:
 - 120% for CSD HT S4 models
 - 140% for CSD HT S8 models.
- Control of different motors sizes:
 - Up to Nema 24 for CSD HT S4 models
 - Up to Nema 34 for CSD HT S8 models. **NEW!**
- Different variety of HOMING operation modes.
- Encoder feedback and support of different resolution.
- Touch Probe function available.
- Limit switches management.
- Auto-sync function available featuring a closed loop positioning.
- 2 + 3 I/Os.
- UL/ CSA.



NEW!



Please refer to download.rta.it for technical specifications



STO FUNCTION FEATURES

- Safe Torque Off (STO) function - **SIL3**
- Error Detection Monitor



Series	Model	V _{DC} range (Volt)	I nom. (Amp)	I boost (Amp)	Digital In/Out	Dimensions (mm)
CSD HT	S8 STO	24 to 85	6.0	8.4	2/3	130x106x32
CSD HT	S4 STO	24 to 48	4.0	4.8	2/3	130x106x32



TECHNICAL FEATURES

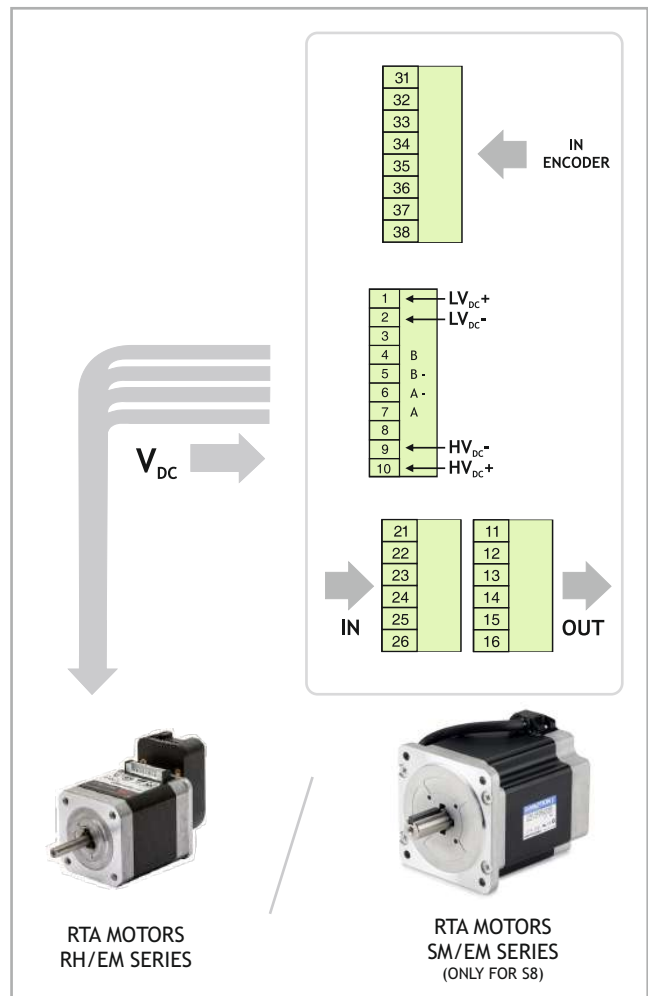
- Range of operating voltage:
 - 24-48 VDC for CSD HT S4 models
 - 24-85 VDC for CSD HT S8 models.
- Protections:
 - Protection against under-voltage and over-voltage
 - Protection against a short-circuit at motor outputs
 - Overtemperature protection.
- Electronic damping facility for further acoustic noise and mechanic vibrations reduction.
- Available in plastic boxed version with plug-in connectors.
- Maximum compactness.
- Optoinsulated auxiliary and programmable inputs and outputs.
- Warranty: 24 months.



- A kit for mounting on a DIN rail is available as optional. Code: KNDCGD

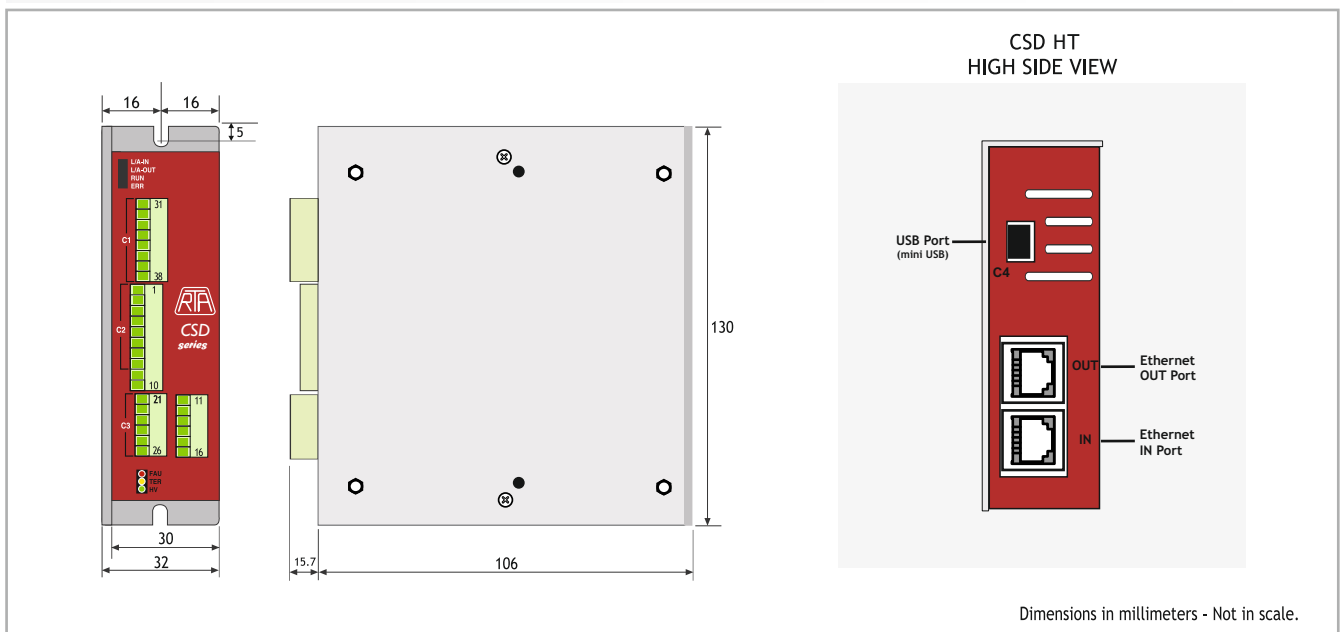


POWER AND LOGIC CONNECTIONS



EtherNet/IP™

MECHANICAL DIMENSIONS



CSD MT Series Drives



INTRODUCTION

- New series of stepping motor drives with Modbus TCP/IP interface, now available with a 3rd generation firmware release and extended current and voltage range.
- Drives optimized for coupling with SANYO DENKI stepping motors, fitted with encoder, but also able to manage third party motors.
- Also available with other interfaces:

EtherNet/IP **EtherCAT**

MAIN FEATURES

- Modes of operation: Profile Position, Profile Velocity and Homing.
- Wide range of motor phase current setting and motor current overboost:
 - 120% for CSD MT 94/S4 models
 - 140% for CSD MT S8 models.
- Control of different motors sizes:
 - Up to Nema 24 for CSD MT 94/S4 models
 - Up to Nema 34 for CSD MT S8 models. **NEW!**
- Different variety of HOMING operation modes.
- Encoder feedback and support of different resolution.
- Touch Probe function available.
- Limit switches management.
- Auto-sync function available featuring a closed loop positioning.
- 5 + 5 I/Os (MT 94) and 2 + 3 I/Os (MT S4/S8).
- UL/ CSA.

CURRENT OVERBOOST
+140%



Please refer to download.rta.it for technical specifications



STO FUNCTION FEATURES

- Safe Torque Off (STO) function - **SIL3**
- Error Detection Monitor



Series	Model	V _{DC} range (Volt)	I nom. (Amp)	I boost (Amp)	Digital In/Out	STO	Dimensions (mm)
CSD MT	S8 STO	24 to 85	6.0	8.4	2/3	Yes	130x106x32
CSD MT	S4 STO	24 to 48	4.0	4.8	2/3	Yes	130x106x32
CSD MT	94	24 to 48	4.0	4.8	5/5	No	130x106x32

CURRENT OVERBOOST
+140%

TECHNICAL FEATURES

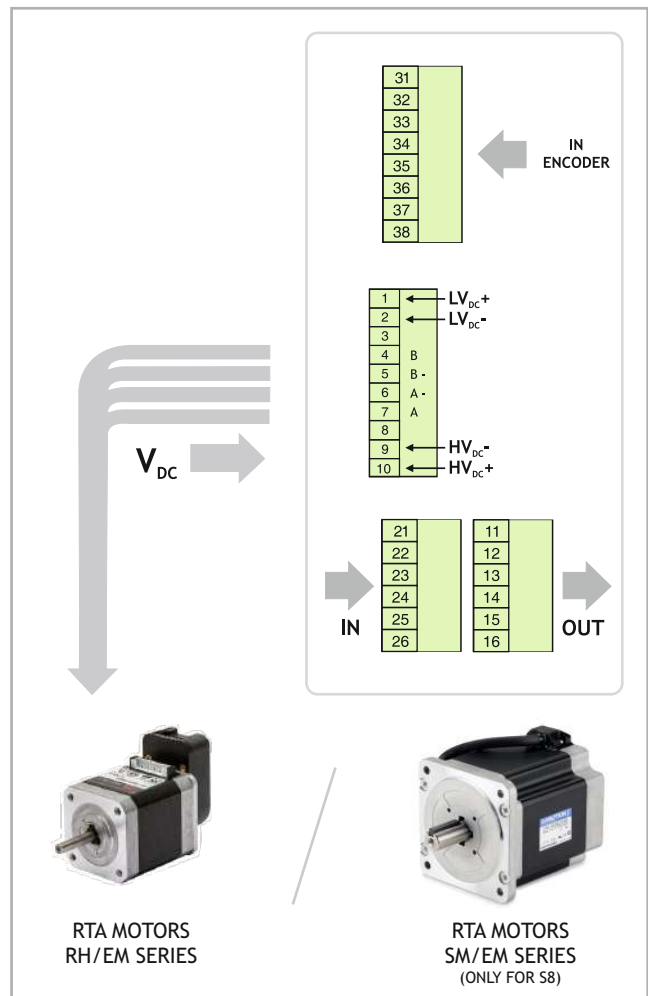
- Range of operating voltage:
 - 24-48 VDC for CSD MT 94/S4 models
 - 24-85 VDC for CSD MT S8 models.
- Protections:
 - Protection against under-voltage and over-voltage
 - Protection against a short-circuit at motor outputs
 - Overtemperature protection.
- Electronic damping facility for further acoustic noise and mechanic vibrations reduction.
- Available in plastic boxed version with plug-in connectors.
- Maximum compactness.
- Optoinsulated auxiliary and programmable inputs and outputs.
- Warranty: 24 months.



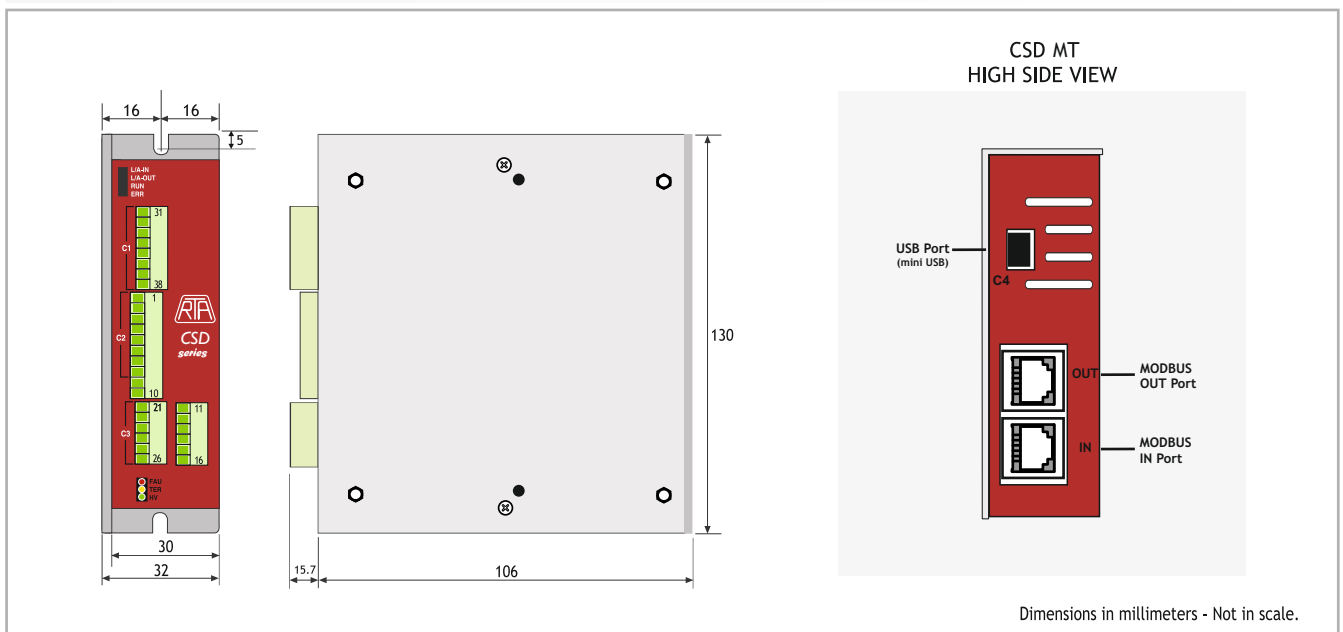
- A kit for mounting on a DIN rail is available as optional. Code: KNDCGD



POWER AND LOGIC CONNECTIONS



MECHANICAL DIMENSIONS



CSD ET Series Drives

EtherCAT®

INTRODUCTION

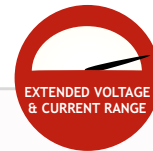
- New series of stepping motor drives with EtherCAT interface, now available with a 3rd generation firmware release and extended current and voltage range.
- Drives optimized for coupling with SANYO DENKI stepping motors, fitted with encoder, but also able to manage third party motors.
- Also available with other interfaces:

EtherNet/IP™  Modbus TCP/IP

MAIN FEATURES

- Modes of operation: Profile Position, Profile Velocity, Homing, CSP and CSV.
- Wide range of motor phase current setting and motor current overboost:
 - 120% for CSD ET 94/S4 models
 - 140% for CSD ET S8 models.
- Control of different motors sizes:
 - Up to Nema 24 for CSD ET 94/S4 models
 - Up to Nema 34 for CSD ET S8 models. **NEW!**
- Different variety of HOMING operation modes.
- Encoder feedback and support of different resolution.
- Touch Probe function available.
- Limit switches management.
- Auto-sync function available featuring a closed loop positioning.
- 5 + 5 I/Os (ET 94) and 2 + 3 I/Os (ET S4/S8).
- UL/ CSA.

CURRENT OVERBOOST
+140%



Please refer to download.rta.it for technical specifications



STO FUNCTION FEATURES

- Safe Torque Off (STO) function - **SIL3**
- Error Detection Monitor



Series	Model	V _{DC} range (Volt)	I nom. (Amp)	I boost (Amp)	Digital In/Out	STO	Dimensions (mm)
CSD ET	S8 STO	24 to 85	6.0	8.4	2/3	Yes	130x106x32
CSD ET	S4 STO	24 to 48	4.0	4.8	2/3	Yes	130x106x32
CSD ET	94	24 to 48	4.0	4.8	5/5	No	130x106x32

CURRENT OVERBOOST
+140%

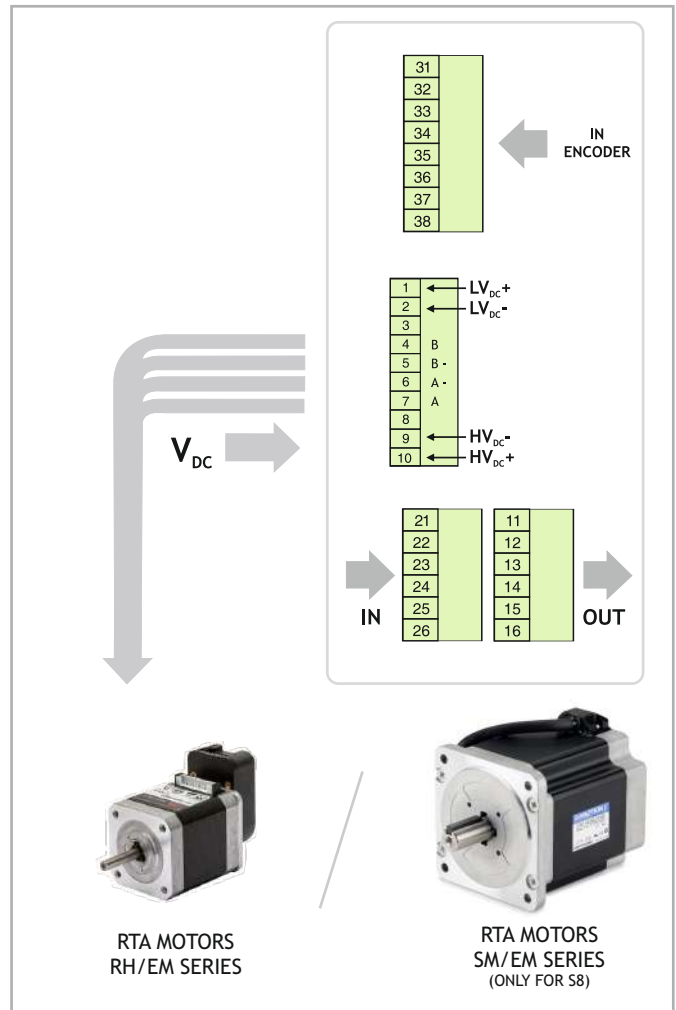
TECHNICAL FEATURES

- Range of operating voltage:
 - 24-48 VDC for CSD ET 94/S4 models
 - 24-85 VDC for CSD ET S8 models.
- Protections:
 - Protection against under-voltage and over-voltage
 - Protection against a short-circuit at motor outputs
 - Overtemperature protection.
- Electronic damping facility for further acoustic noise and mechanic vibrations reduction.
- Available in plastic boxed version with plug-in connectors.
- Maximum compactness.
- Optoinsulated auxiliary and programmable inputs and outputs.
- Warranty: 24 months.



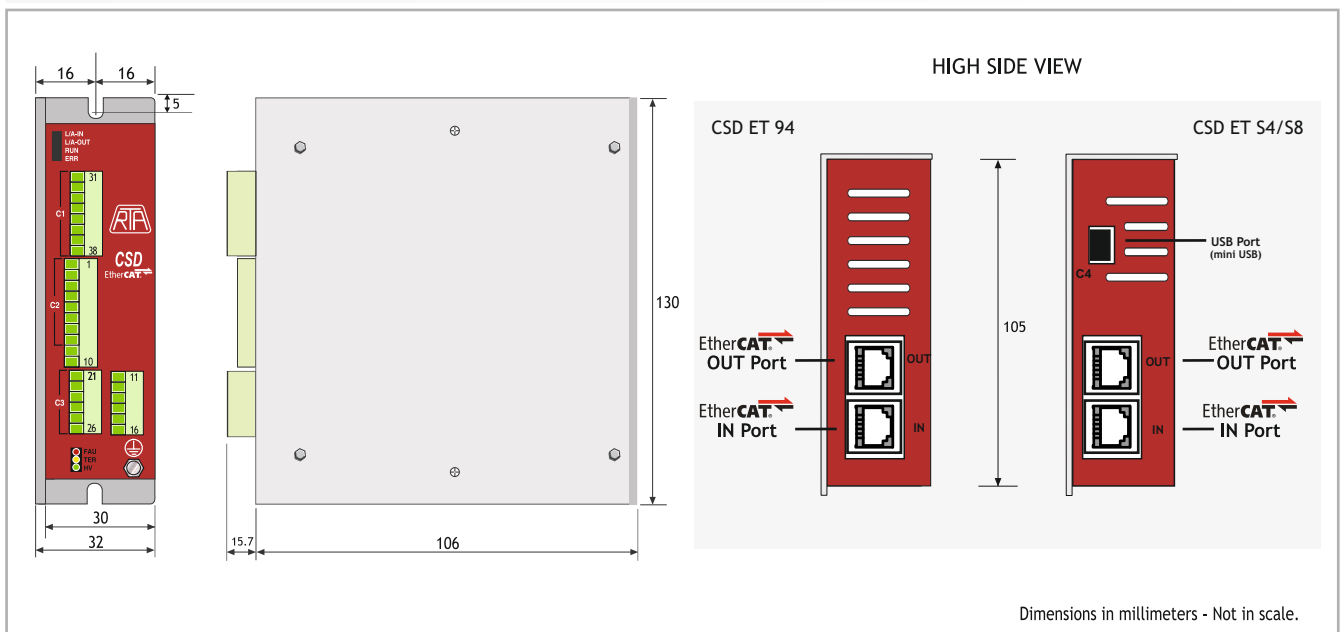
- A kit for mounting on a DIN rail is available as optional. Code: KNDCGD

POWER AND LOGIC CONNECTIONS



EtherCAT®

MECHANICAL DIMENSIONS



X-PLUS MS4 Series Drives

INTRODUCTION

- X-Plus MS4 is a new model of RTA flagship high-power stepping motor drive with STEP&DIR, Analog Input and Modbus RTU RS-485 interface.
- Embedded Auto-Sync and Auto-Feed functions with encoder, featuring a closed loop positioning and motor performance optimization.

AUTO-FEED

AUTO-FEED is a closed loop function with:

- Very simple tuning
- Lower power consumption and heating



MODBUS RTU MAIN FUNCTIONS

- Homing, Position and Velocity mode
- Registers for diagnostics



HIGHLIGHTS

- 3 Current Control modes available: Open Loop, Auto-Sync and Auto-Feed
- Configuration settings, diagnostics and setup via RTA STUDIO for Windows®.
- INPUT and OUTPUT configurable.
- Extended interfaces: STEP&DIR, Analog Input velocity setpoint (± 10 Volt) and Modbus RTU.
- Integrated system for back EMF energy dissipation with optional external resistor.
- Zero index, Proximity Switch and Hard Stop searching function.
- Replied encoder signal output.



STO FUNCTION FEATURES

- Safe Torque Off (STO) function - **SIL3-Plc**
- Error Detection Monitor (EDM) output

SIL3
SAFE TORQUE OFF (STO)

ONE OF THE MOST COMPACT DRIVES WITH POWER INPUT DIRECTLY FROM THE MAIN AC SUPPLY (110 - 230 VAC)

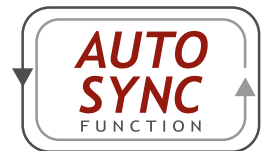
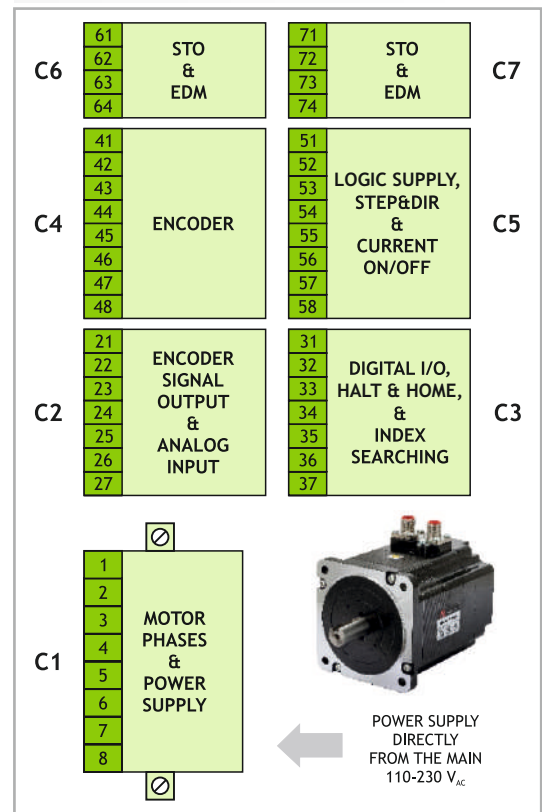
Series	Model	V _{AC} range (Volt)	I _{nom.} (Amp)	I _{boost} (Amp)	Dimensions (mm)
X-PLUS	MS4	110 to 230 +/- 15%	4.8	6.0	169x129x46

TECHNICAL FEATURES

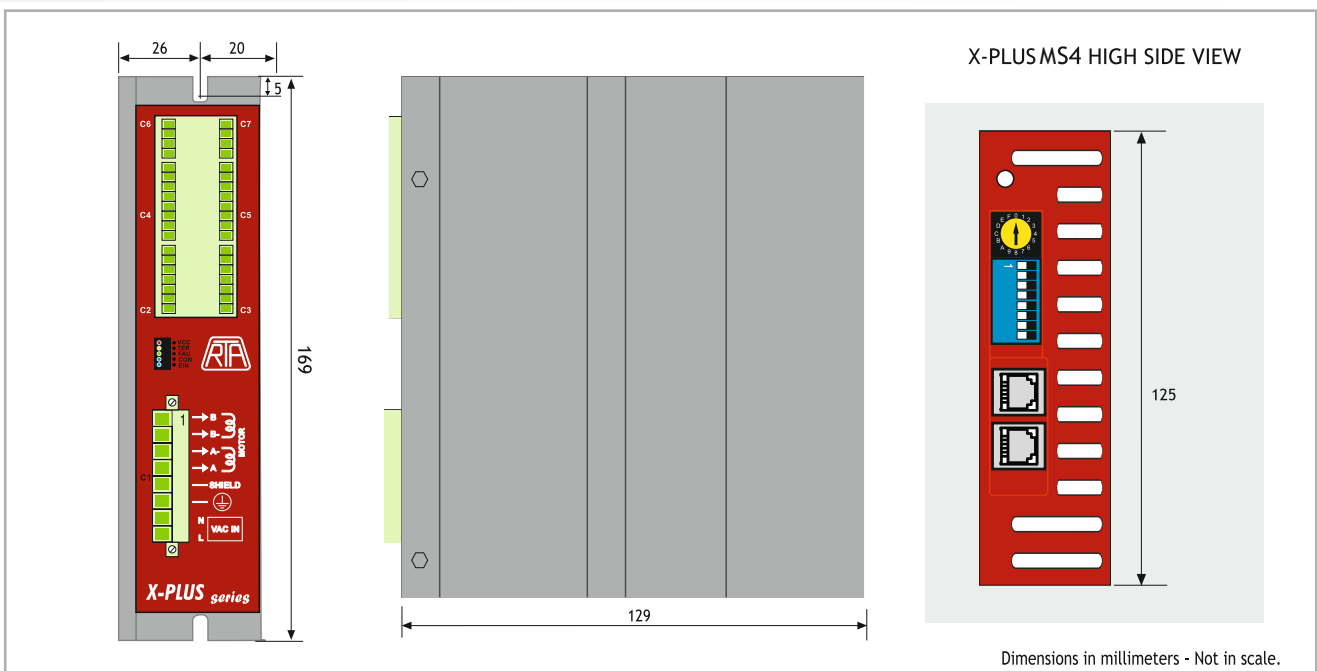
- Range of operating nominal voltage: 110-230 V_{AC}.
- Up to 6.0 Amps motor current setting.
- RS-485 baud rate up to 256000.
- Microstepping: 400, 800, 1600, 3200, 6400 and 12800 steps/revolutions.
- Various encoder resolution available.
- Protections:
 - Protection against under-voltage and over-voltage
 - Protection against a short-circuit at motor outputs
 - Overtemperature protection with thermal sensor
 - Open motor/encoder phase.
- Automatic current reduction at motor standstill.
- Electronic damping facility for further acoustic noise and mechanic vibrations reduction.
- Easy wiring with plug-in connectors. Maximum compactness.
- Optoinsulated digital I/O to ensure best EM noise immunity.
- Coupling with stepping motors rated for high insulation is mandatory.
- Warranty: 24 months.



POWER AND LOGIC CONNECTIONS



MECHANICAL DIMENSIONS



X-PLUS RS4 Series Drives

INTRODUCTION

- X-Plus RS4 is a new model of RTA flagship high-power stepping motor drive with Step & Direction and Analog Input interface.
- The embedded Auto-Sync function with encoder enhances the drive features and optimizes the motor performances.
- Also available with Modbus RTU interface.

HIGHLIGHTS

- Embedded Auto-Sync function with encoder, featuring a closed loop positioning.
- Easy parameter setting via DIP switches.
- Modes of operation: STEP&DIR or Analog Input velocity setpoint (± 10 V) for application where SPEED CONTROL is needed.
- Integrated system for back EMF energy dissipation with optional external resistor.
- LED diagnostic function.
- Zero index searching function.
- Encoder signal output functionality included.



STO FUNCTION FEATURES

- Safe Torque Off (STO) function - **SIL3-PIe**
- Error Detection Monitor (EDM) output

SIL3
SAFE TORQUE
OFF (STO)

ONE OF THE MOST COMPACT DRIVES WITH POWER INPUT DIRECTLY FROM THE MAIN AC SUPPLY (110 - 230 VAC)

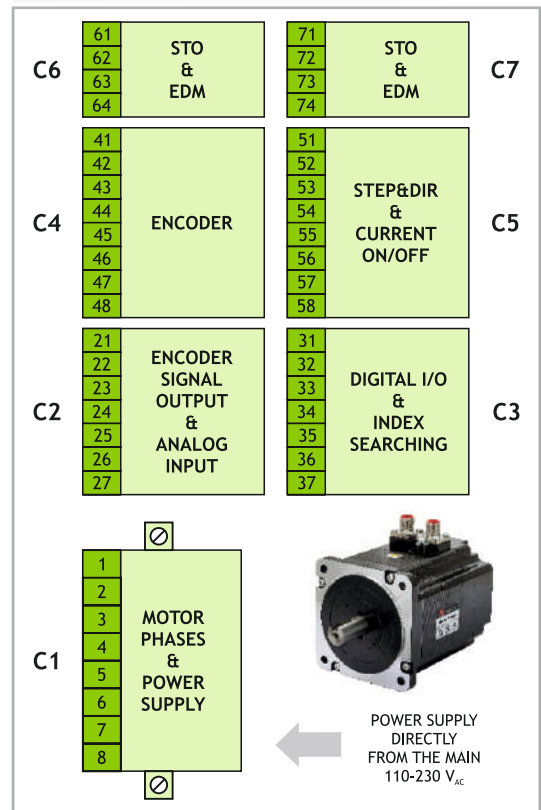
Series	Model	V _{AC} range (Volt)	I _{NP} min. (Peak value) (Amp)	I _{NP} max. (Peak value) (Amp)	Dimensions (mm)
X-PLUS	RS4	110 to 230 +/- 15%	1.2	4.8	169x129x46

TECHNICAL FEATURES

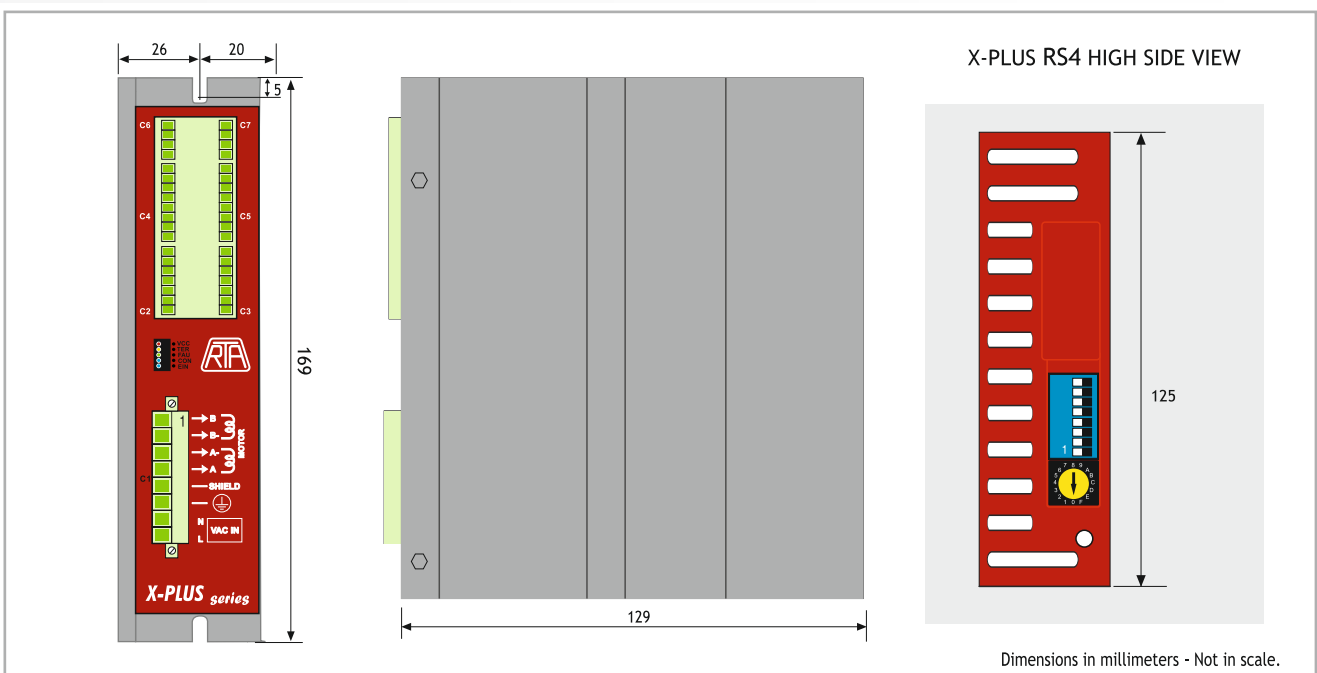
- Range of operating nominal voltage: 110-230 V_{AC}.
- Range of current motor settings: 1.2-4.8 A.
Setting up to four possible values by means of dip-switches.
- Microstepping: 1600, 3200, 6400 and 12800 steps/revolutions
Setting by means of dip-switches.
- Various encoder resolution available.
- Automatic current reduction at motor standstill.
- Protections:
 - Protection against under-voltage and over-voltage.
 - Protection against a short-circuit at motor outputs.
 - Overtemperature protection with thermal sensor.
 - Open motor/encoder phase.
- Electronic damping facility for further acoustic noise and mechanic vibrations reduction.
- Easy wiring with plug-in connectors .
Maximum compactness.
- Optoinsulated digital I/O to ensure best EM noise immunity.
- Coupling with stepping motors rated for high insulation is mandatory.
- Warranty: 24 months.



POWER AND LOGIC CONNECTIONS



MECHANICAL DIMENSIONS



R-MOD ET Combo Unit



INTRODUCTION

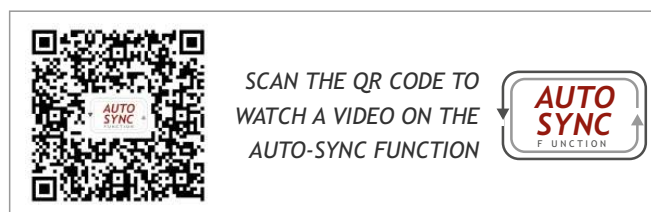
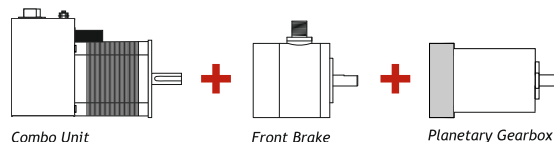
R-MOD ET is a series of stepping motors in two sizes with integrated ministep bipolar chopper EtherCAT drives, based on incremental or battery-less multi-turn absolute encoder.

HIGHLIGHTS

- New generation Full Closed Loop Absolute Encoder version available
- Holding Torque up to 300 Ncm
- Communication by means of EtherCAT interface
- Different Operation Modes
- Available Inputs
- Different HOMING operation modes
- PROXIMITY hardware input
- AUTO-SYNC function
- Battery-less Multi-turn ABSOLUTE ENCODER versions
- CSA Certified



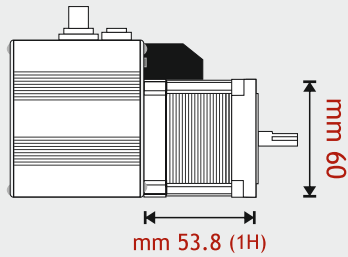
Front Brake and/or Gearbox versions available



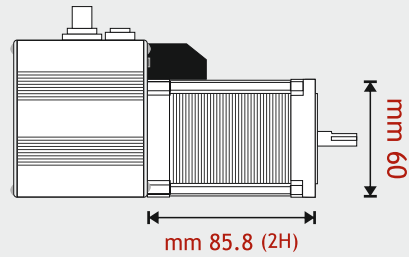
Please refer to download.rta.it for technical specifications

Models	Motor Length (mm)	Holding Torque (Ncm)	Encoder Type	Digital In/Out	Certifications
R-MOD ET A3H2MK <i>Full Closed Loop</i>	85.8	300	Battery-less Multi-turn Absolute	1/0	CE
R-MOD ET E3H2MA	85.8	300	Incremental	1/0	CE

SIZES AND PERFORMANCES



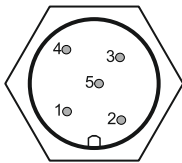
Holding Torque: 170 Ncm



Holding Torque: 300 Ncm

CONNECTION SCHEME

CN1



- 1: Input (PX / Touch probe)
- 2: Power supply
- 3: Input (PX / Touch probe)
- 4: GND
- 5: Logic power supply

CN2



EtherCAT
OUT
(Female)

CN3

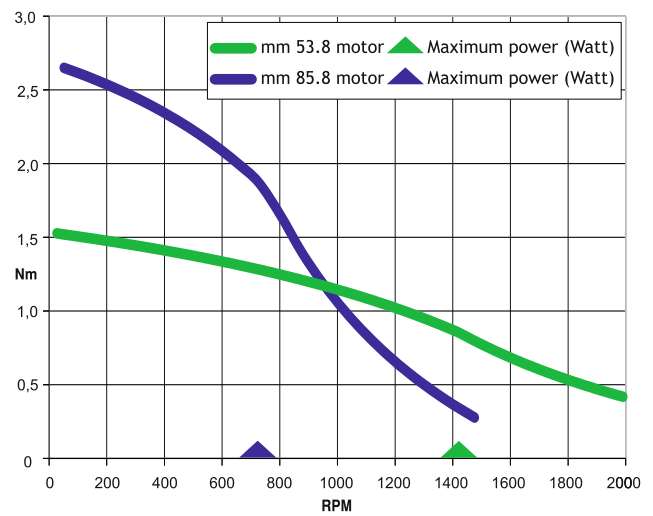


EtherCAT
IN
(Female)

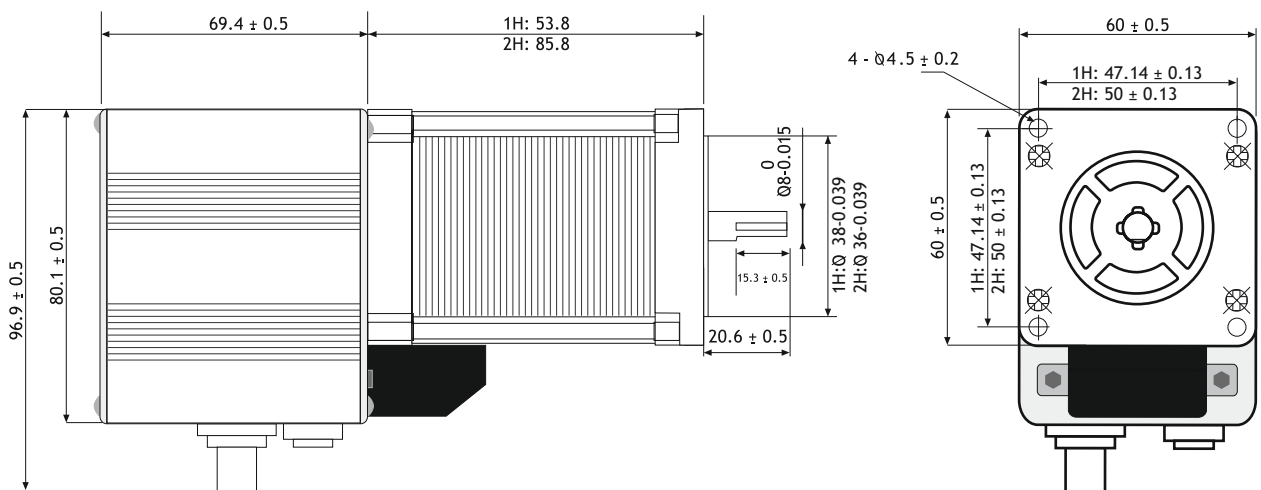
- 1: Transmit Data +
- 2: Receive Data +
- 3: Transmit Data -
- 4: Receive data -

TORQUE/SPEED CURVE

24 VDC TORQUE SPEED CURVE / 120 % MOTOR CURRENT SETTING



MECHANICAL DIMENSIONS (mm)



Starter kit and cable set available.

HI MOD ET/ETS Combo Unit

3rd
FIRMWARE
GENERATION



INTRODUCTION

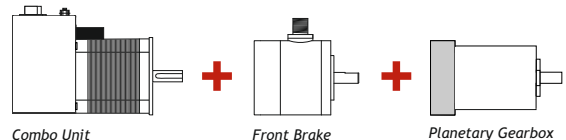
HI-MOD ETS is a series of stepping motors in three sizes with integrated ministep bipolar chopper EtherCAT drives and STO Function, based on battery-less multi-turn absolute encoder.

HIGHLIGHTS

- New generation Full Closed Loop Absolute Encoder versions available
- Holding Torque up to 920 Ncm
- Communication by means of EtherCAT interface
- Different Operation Modes
- Available Inputs / Outputs
- Touch probe hardware input
- AUTO-SYNC function
- Battery-less Multi-turn ABSOLUTE ENCODER versions
- STO Function - SIL3 with Error Detection Monitor



Front Brake and/or Gearbox versions available



SCAN THE QR CODE TO WATCH A VIDEO ON THE AUTO-SYNC FUNCTION



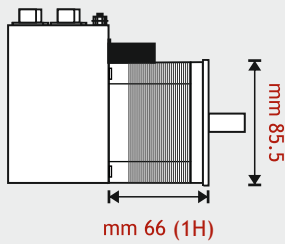
Please refer to download.rta.it for technical specifications

Models	Motor Length (mm)	Holding Torque (Ncm)	Encoder Type	Digital In/Out	STO	Rated Voltage (VDC)
HI-MOD ETS A4K2HK.M <i>Full Closed Loop</i>	96.5	700	Battery-less Multi-turn Absolute	2/2	✓	48-80
HI-MOD ET A5K2HK.M <i>Full Closed Loop</i>	96.5	700	Battery-less Multi-turn Absolute	2/2	X	48-80
HI-MOD ETS A4K2RK.M <i>Full Closed Loop</i>	96.5	700	Battery-less Multi-turn Absolute	2/2	✓	80-140
HI-MOD ET A5K2RK.M <i>Full Closed Loop</i>	96.5	700	Battery-less Multi-turn Absolute	2/2	X	80-140

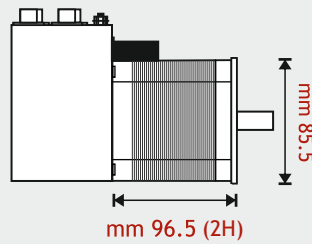
140 VDC
140 VDC

Other models upon request

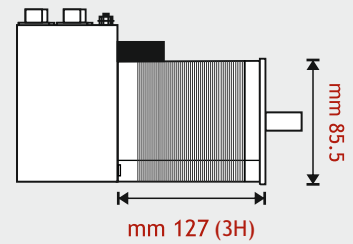
SIZES AND PERFORMANCES



Holding Torque: 360 Ncm

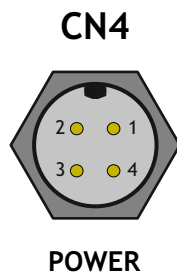
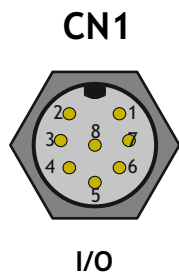
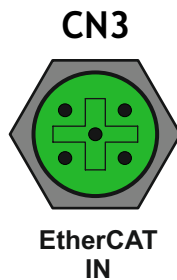


Holding Torque: 700 Ncm



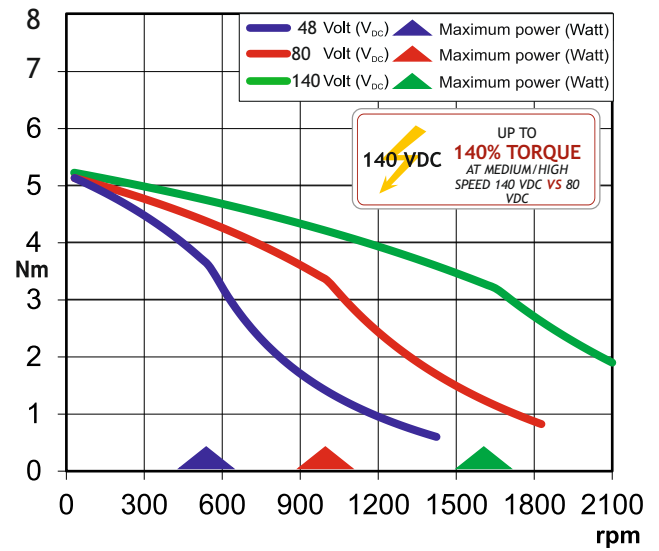
Holding Torque: 920 Ncm

CONNECTION SCHEME

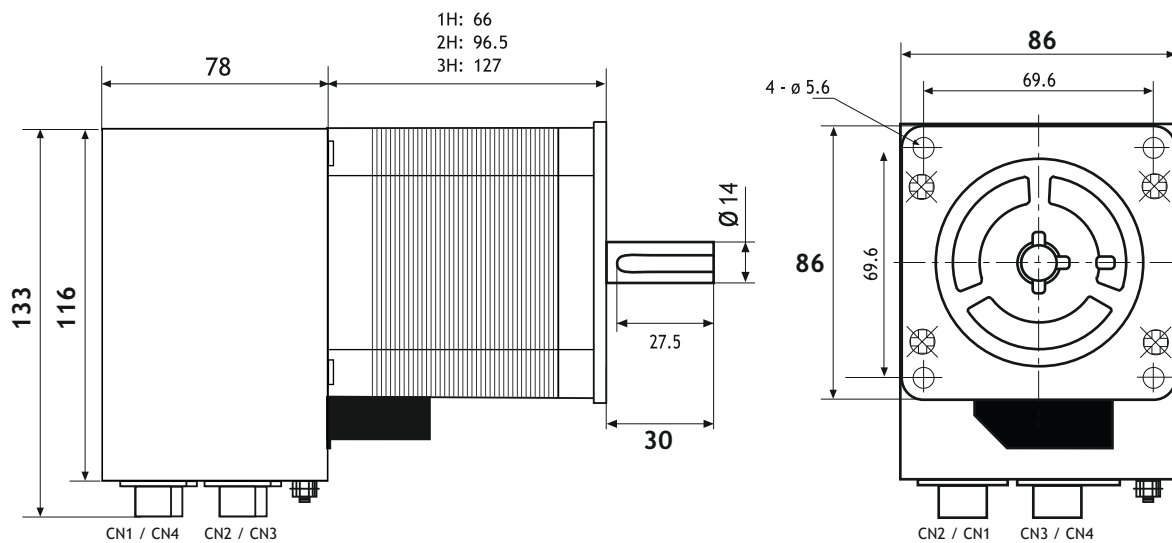


TORQUE/SPEED CURVE

48/80/140 VDC TORQUE/SPEED CURVE - REF. 700 Ncm MODELS



MECHANICAL DIMENSIONS (mm)



Starter kit and cable set available.

STEPPING MOTOR DRIVES ACCESSORIES

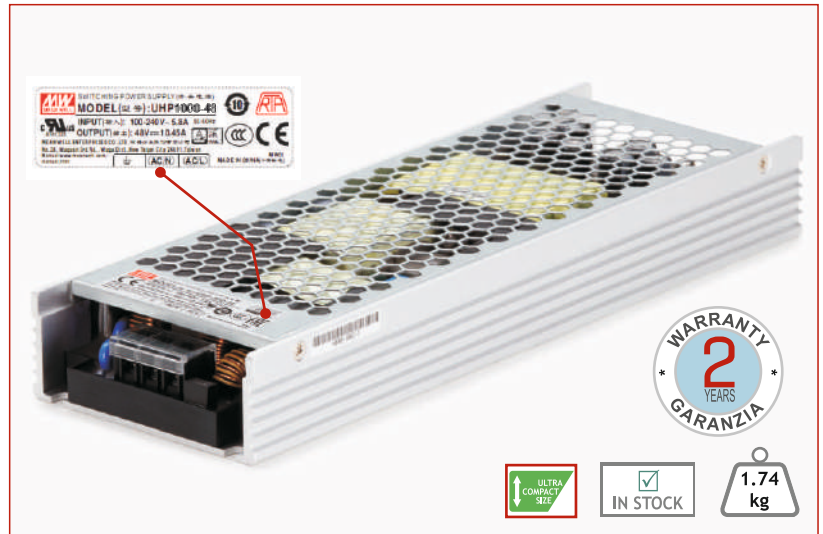
SWITCHING POWER SUPPLY



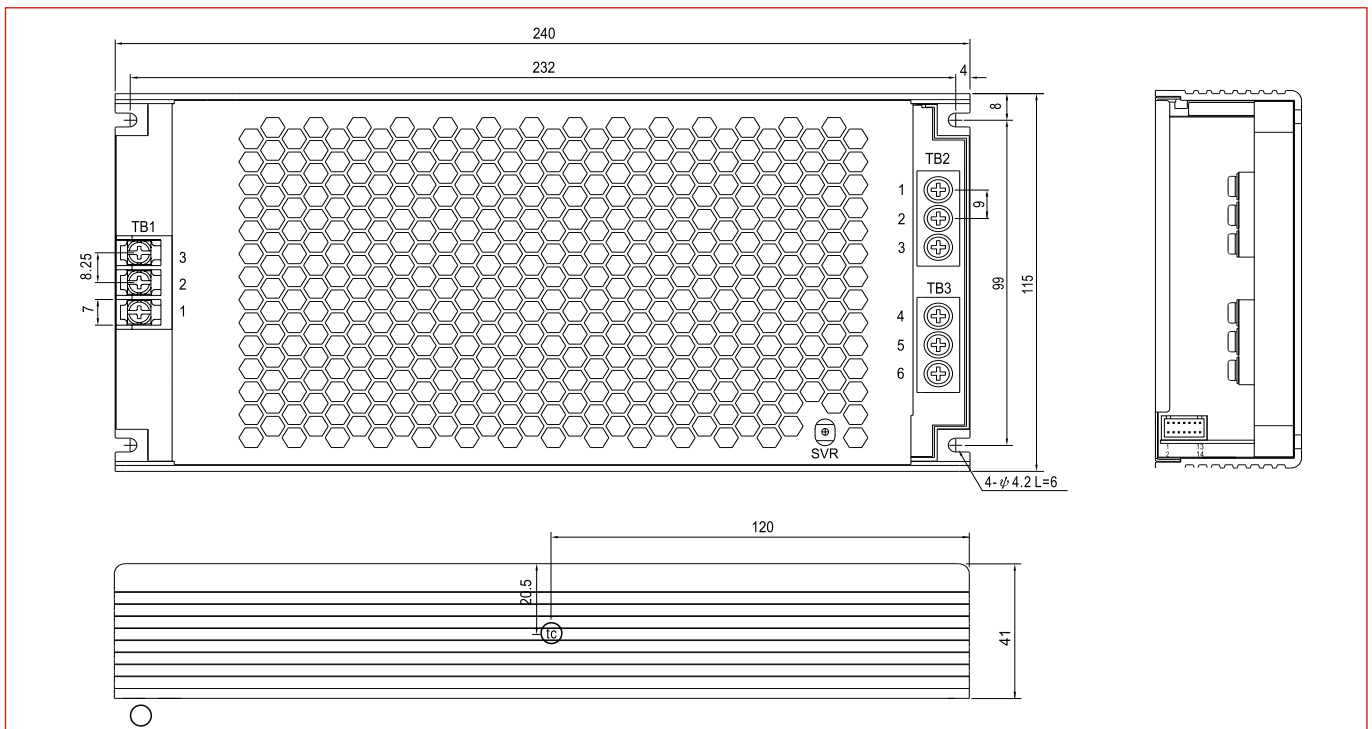
R-UHP 1000-48 SWITCHING POWER SUPPLY

Main Features

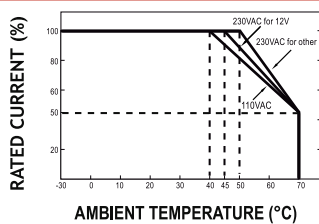
- 21 A output - 48 VDC
- AC input voltage range:90~264 VAC
- -30~+70 °C ambient temperature
- Protections: Short Circuit, Overload, Over Voltage, Over Temperature
- V_{DC_OK} signal active
- Led indicator for power on
- Warranty: 24 months



Dimensions (Units:mm)



MORE INFO

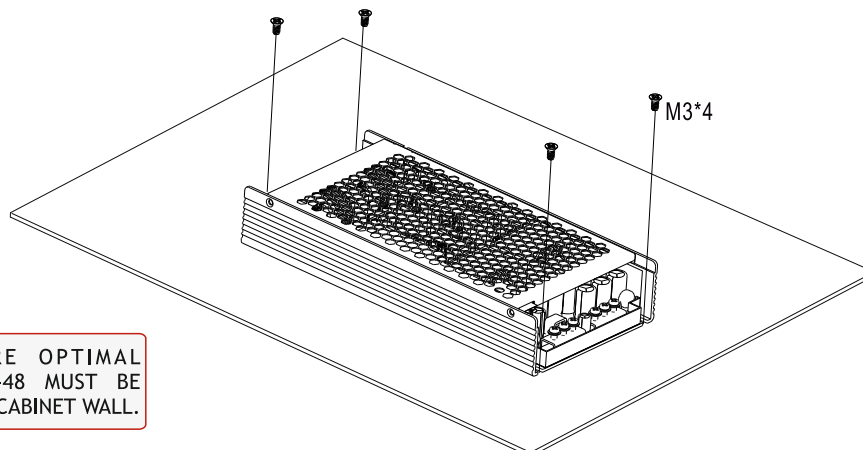


DERATING CURVE

Specifications

MODEL		R-UHP 1000-48
OUTPUT	DC VOLTAGE	48V
	RATED CURRENT	21A
	RATED POWER	1008W
	VOLTAGE ADJ. RANGE	48 ~ 57.6V
	VOLTAGE TOLERANCE Note.	±1.0%
	LINE REGULATION	±0.5%
	LOAD REGULATION	±0.5%
INPUT	VOLTAGE RANGE Note.3	90 ~ 264VAC 127 ~ 370VDC
	FREQUENCY RANGE	47 ~ 63Hz
	EFFICIENCY	96%
	AC CURRENT (Typ.)	10.1A/115VAC 5.3A/230VAC
FUNCTION	OVERLOAD	105 ~ 120% rated output power Protection type: Constant current limiting with delay shutdown after 3 seconds, re-power to cover
	OVER VOLTAGE	59 ~ 66 V Protection type: Shut down O/P voltage, re-power on to recover
	OVER TEMPERATURE	Protection type: Shut down O/P voltage, recovers automatically after temperature goes down
	DC_OK SIGNAL(Optional)	The TTL signal out, PSU turn on=4.5 ~ 5.5V; PSU turn off= -01 ~ 0.5V
ENVIRONMENT	WORKING TEMP.	-30 ~ +70°C (Refer to «Derating Curve»)
	WORKING HUMIDITY	20 ~ 90% RH non-condensing
	VIBRATION	10 ~ 500Hz, 5G 10min./1cycle, 60min. each along X, Y, Z axes
SAFETY & EMC (Note.5)	SAFETY STANDARDS	UL62368-1, TUV BS EN/EN62368-1, EAC TP TC 004 approved; design refer to BS EN/EN61558-1, BS EN/EN60335-1
	WITHSTAND VOLTAGE	I/P-O/P:3 75KVAC I/P-FG:2KVAC O/P-FG:1 25KVAC
	ISOLATION RESISTANCE	I/P-O/P, I/P-FG, O/P-FG:100M Ohms/500VDC/25°C/70%RH
	EMC EMISSION	Compliance to EN55032,GB9254,Class B, EN55014,EN61000-3-2,-3,EAC TP TC 020
OTHERS	EMC IMMUNITY	Compliance to EN61000-4-2,3,4,5,6,8,11;EN61000-6-2 (EN50082-2), heavy industry level ,criterial A, EAC TP TC020
OTHERS	MTBF	218.86K hrs min. Telcordia SR-332 (Bellcore); 69.81K hrs min. MIL-HDBK-217F(25°C)
NOTE	<ol style="list-style-type: none"> 1. All parameters NOT specially mentioned are measured at 230 VAC input, rated load and 25°C ambient temperature. 2. Tolerance: includes set up tolerance, line regulation and load regulation. 3. Please check the derating curve for more details. 4.The ambient temperature derating of 5°C /1000m is needed for operating altitude greater than 2000m (6500ft). 5. The power supply is considered a component which will be installed into a final equipment. The final equipment must be re-confirmed that is still meets EMC directives. 	

Mounting



IN ORDER TO ASSURE OPTIMAL DISSIPATION, R-UHP 1000-48 MUST BE INSTALLED ON ELECTRICAL CABINET WALL.

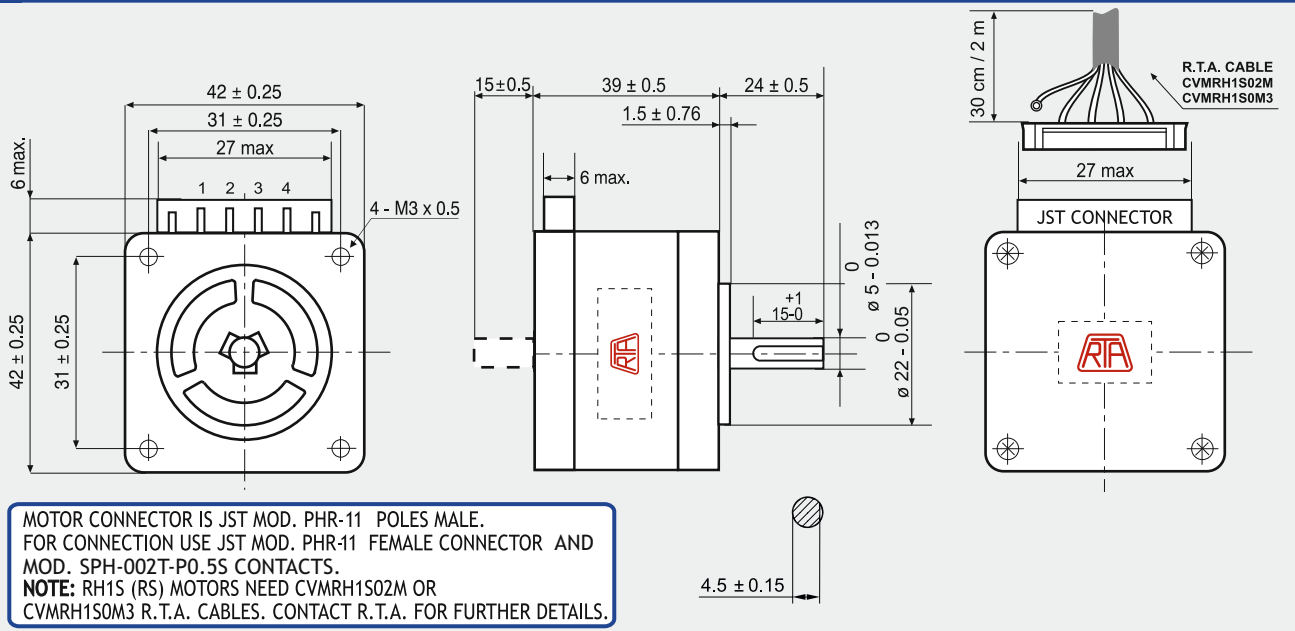


STEPPING MOTORS



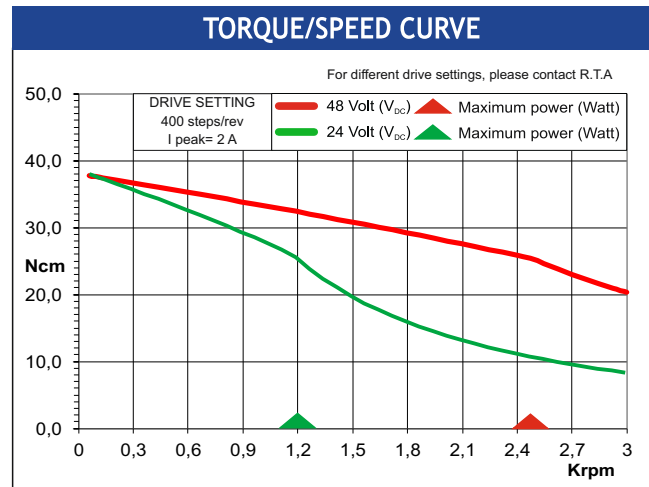
RH 1S1H

Dimensions (Unit:mm)



FEATURES		RH 1S1H (RH 1S1H-RS)
MODEL		RH 1S1H (RH 1S1H-RS)
BASIC STEP ANGLE		1.8 ± 0.09°
BIPOLAR CURRENT	(Amp)	2.0
UNIPOLAR CURRENT	(Amp)	
RESISTANCE	(Ohm)	1.1
INDUCTANCE	(mH)	2.4
BIPOLAR HOLDING TORQUE	(Ncm)	43
UNIPOLAR HOLDING TORQUE	(Ncm)	
ROTOR INERTIA	(Kgm ² x 10 ⁻⁷)	46
THEORETICAL ACCELERATION	(rad x sec. ⁻²)	93000
BACK E.M.F.	(V/Krpm)	21.5
MASS	(Kg)	0.3
PROTECTION DEGREE		IP40
LEADS CODE		V

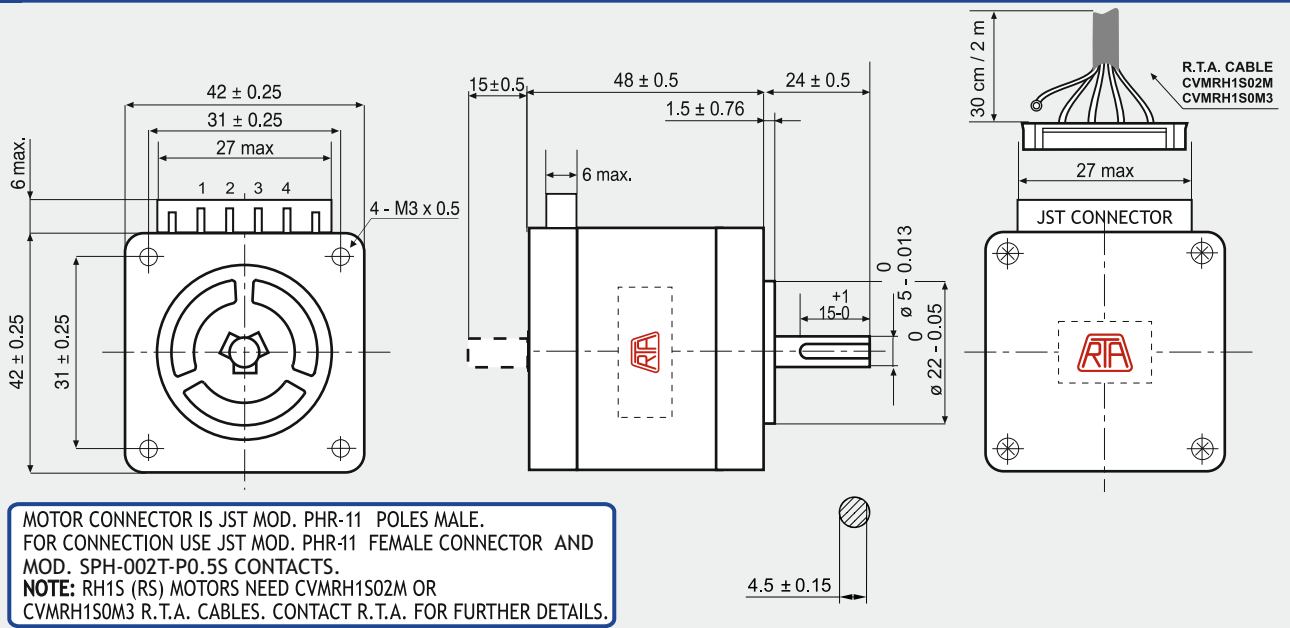
Codes between brackets refer to double shaft models.



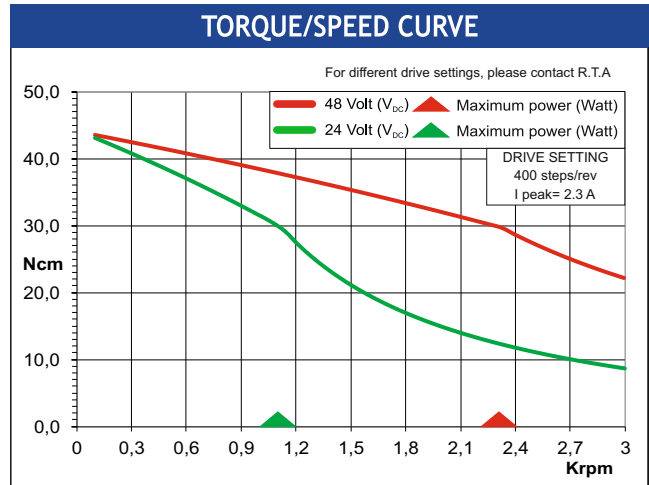
Suggested R.T.A. drive series: BSD, CSD, FLEX-DRIVE

RH 1S2H

Dimensions (Unit:mm)



FEATURES		RH 1S2H (RH 1S2H-RS)
MODEL		RH 1S2H (RH 1S2H-RS)
BASIC STEP ANGLE		1.8 ± 0.09°
BIPOLAR CURRENT	(Amp)	2.3
UNIPOLAR CURRENT	(Amp)	
RESISTANCE	(Ohm)	0.93
INDUCTANCE	(mH)	2.2
BIPOLAR HOLDING TORQUE	(Ncm)	56
UNIPOLAR HOLDING TORQUE	(Ncm)	
ROTOR INERTIA	(Kgm ² x 10 ⁻⁷)	63
THEORETICAL ACCELERATION	(rad x sec. ⁻²)	89000
BACK E.M.F.	(V/Krpm)	24.3
MASS	(Kg)	0.38
PROTECTION DEGREE		IP40
LEADS CODE		V



Codes between brackets refer to double shaft models.

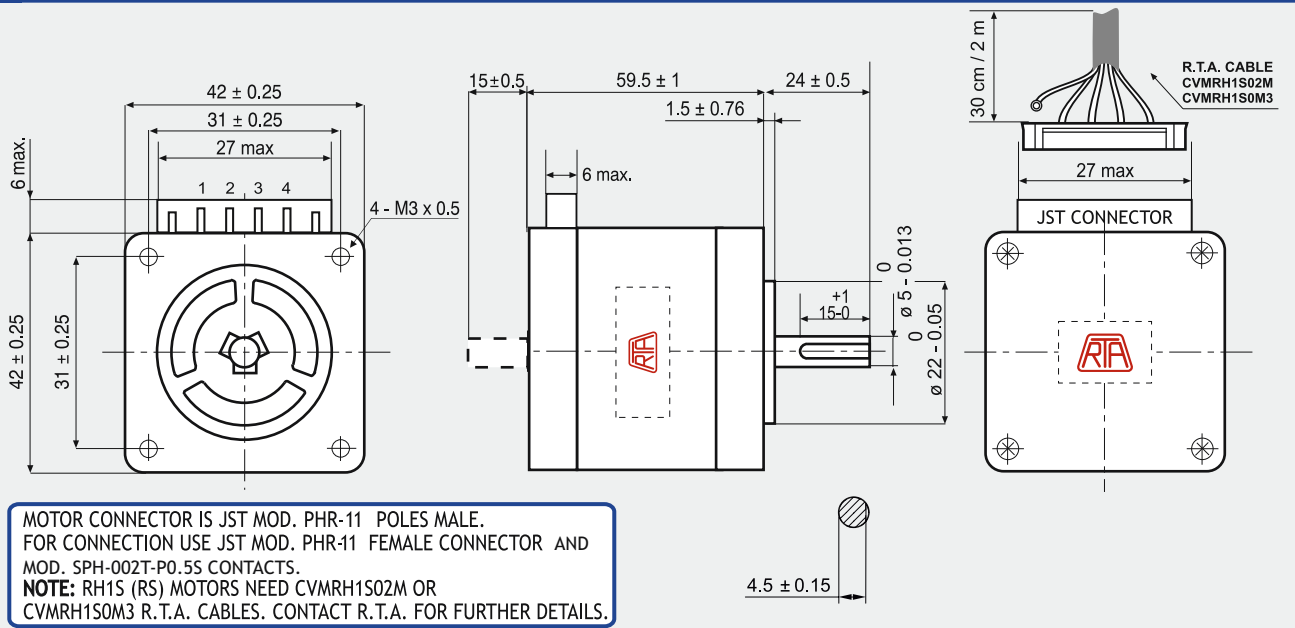
R.T.A. MOTOR CABLE
CVMRH1S02M
CVMRH1S0M3

(4/B-) BROWN
(3/B) YELLOW
(2/A-) WHITE
(1/A) GREEN

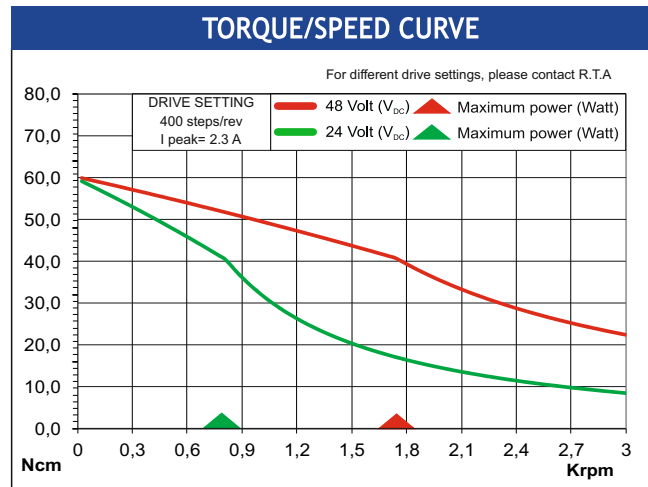
Suggested R.T.A. drive series: BSD, CSD, FLEX-DRIVE

RH 1S3H

Dimensions (Unit:mm)



FEATURES		RH 1S3H (RH 1S3H-RS)
MODEL		RH 1S3H (RH 1S3H-RS)
BASIC STEP ANGLE		1.8 ± 0.09°
BIPOLAR CURRENT	(Amp)	2.3
UNIPOLAR CURRENT	(Amp)	
RESISTANCE	(Ohm)	1.2
INDUCTANCE	(mH)	3.0
BIPOLAR HOLDING TORQUE	(Ncm)	80
UNIPOLAR HOLDING TORQUE	(Ncm)	
ROTOR INERTIA	(Kgm ² x 10 ⁻⁷)	94
THEORETICAL ACCELERATION	(rad x sec. ⁻²)	85100
BACK E.M.F.	(V/Krpm)	34.7
MASS	(Kg)	0.51
PROTECTION DEGREE		IP40
LEADS CODE		V



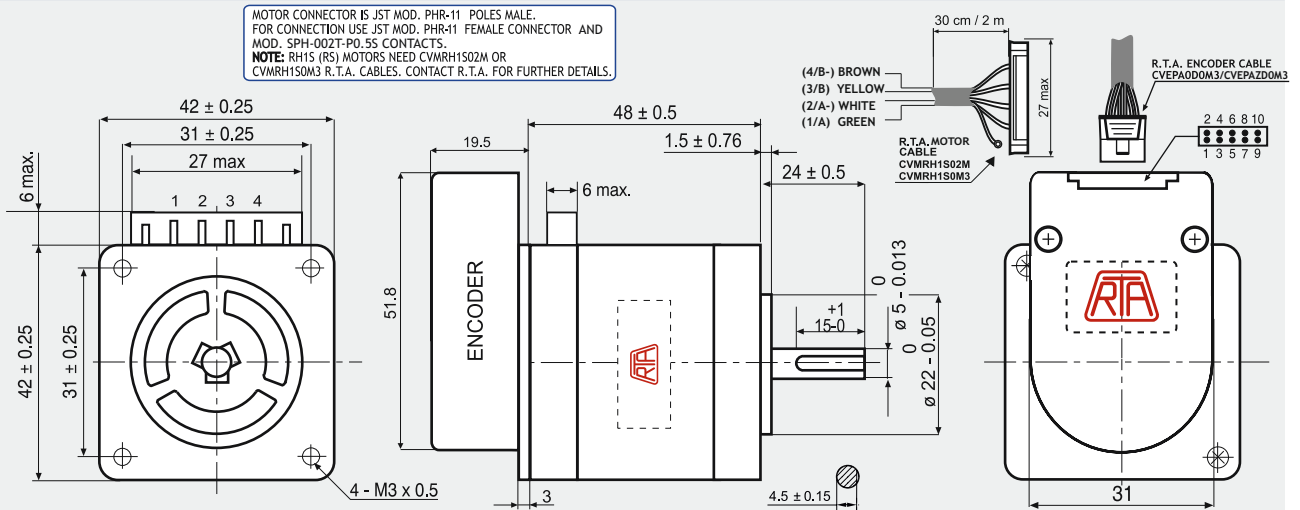
Codes between brackets refer to double shaft models.



Suggested R.T.A. drive series: BSD, CSD, FLEX-DRIVE

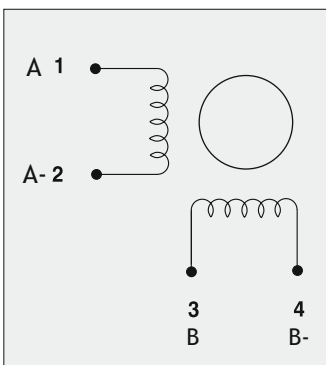
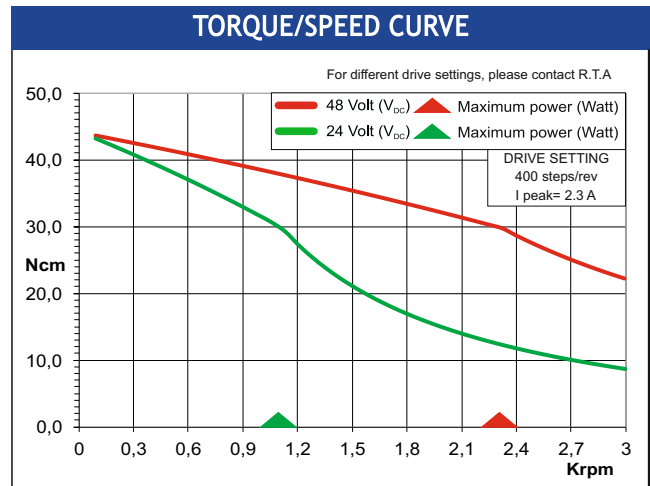
RH 1S2H-OXX0

Dimensions (Unit:mm)



ENCODER OPTIONS:	RH 1S2H-04D0	RH 1S2H-04E0	RH 1S2H-0HE0
RESOLUTION	400 cpr	400 cpr	4000 cpr
INDEX	No	Yes	Yes
CURRENT CONSUMPTION (mA)	50	50	85
HIGH LEVEL OUTPUT (Volt)	5 (TIP) - 4.75 (MIN) ($I_{max}=25mA$)	3.4 (TIP) - 2.4 (MIN) ($I_{max}=20mA$)	3.4 (TIP) - 2.4 (MIN) ($I_{max}=20mA$)
LOW LEVEL OUTPUT (Volt)	0.25 (TIP) - 0.6 (MAX) ($I_{max}=25mA$)	0.2 (TIP) - 0.4 (MAX) ($I_{max}=20mA$)	0.2 (TIP) - 0.4 (MAX) ($I_{max}=20mA$)
OUTPUT SIGNAL	Differential	Differential	Differential
MAXIMUM FREQUENCY (KHz)	100	100	720
POWER SUPPLY VOLTAGE (Volt)	5 $V_{DC} \pm 10\%$	5 $V_{DC} \pm 10\%$	5 $V_{DC} \pm 10\%$

FEATURES	
MODEL	RH 1S2H
BASIC STEP ANGLE	1.8 ± 0.09°
BIPOLAR CURRENT (A)	2.3
UNIPOLAR CURRENT (A)	
RESISTANCE (Ohm)	0.93
INDUCTANCE (mH)	2.2
BIPOLAR HOLDING TORQUE (Ncm)	56
UNIPOLAR HOLDING TORQUE (Ncm)	
ROTOR INERTIA ($Kgm^2 \times 10^{-7}$)	63
THEORETICAL ACCELERATION ($rad \times sec^{-2}$)	89000
BACK E.M.F. (V/Krpm)	24.3
MASS (Kg)	0.38
PROTECTION DEGREE	IP40
LEADS CODE	V



RTA MOTOR CABLE COLORS

DESCRIPTION	COLOR
CHANNEL A	GREEN
CHANNEL A-	WHITE
CHANNEL B	YELLOW
CHANNEL B-	BROWN

ENCODER PIN-OUT

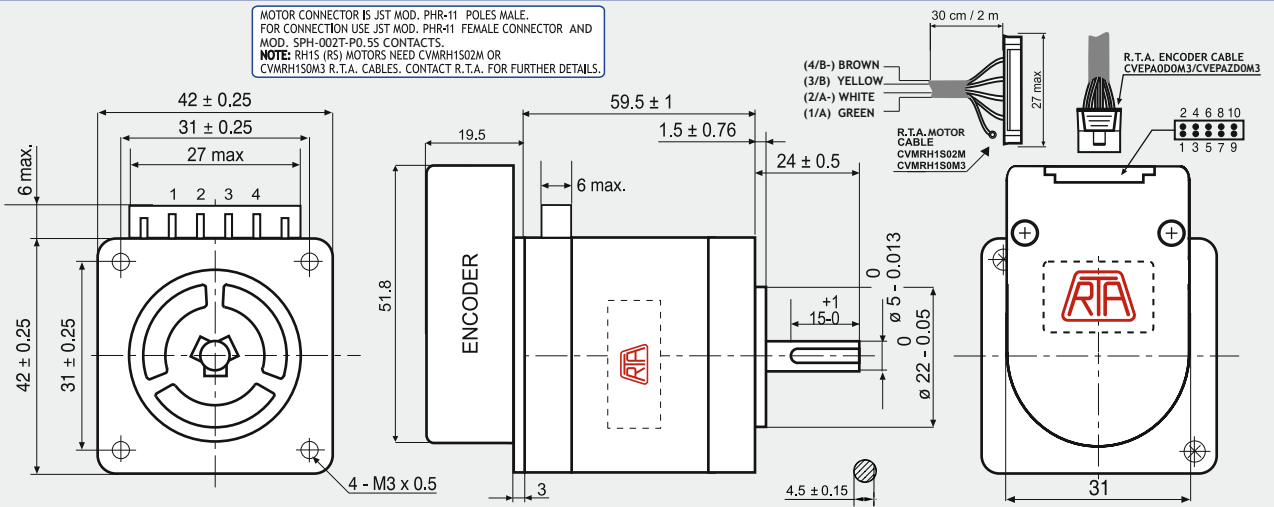
DESCRIPTION	04D0 PINS	04E0/0HE0 PINS	R.T.A. CABLE LEADS COLOR
CHANNEL A+	6	6	GREEN
CHANNEL A-	5	5	PURPLE
CHANNEL B+	8	8	BLUE
CHANNEL B-	7	7	BROWN
+ DC (5V)	2	2	RED
GROUND	3	3	BLACK
INDEX+	/	10	ORANGE
INDEX-	/	9	WHITE

R.T.A. CABLE (30 cm) CVEPA0D0M3 CVEPAZ0D0M3

Suggested R.T.A. drive series: BSD, CSD, FLEX-DRIVE

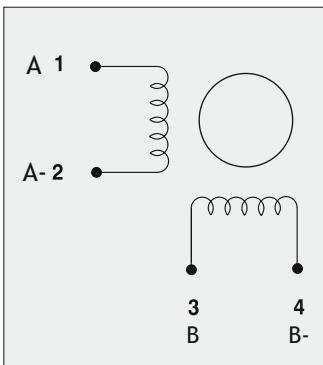
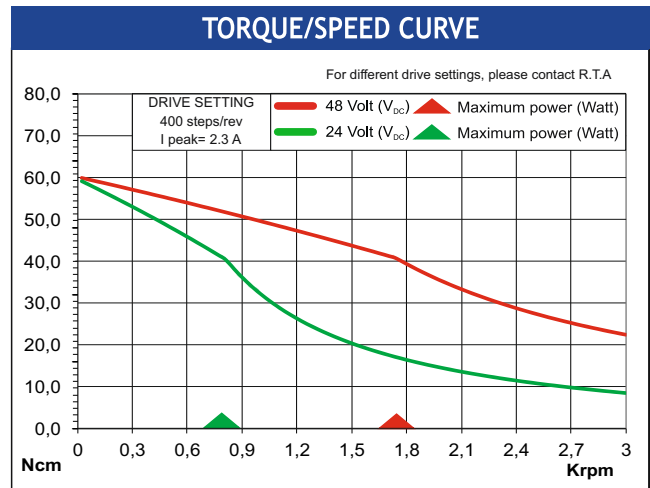
RH 1S3H-OXX0

Dimensions (Unit:mm)



ENCODER OPTIONS:	RH 1S3H-04D0	RH 1S3H-04E0	RH 1S3H-0HE0
RESOLUTION	400 cpr	400 cpr	4000 cpr
INDEX	No	Yes	Yes
CURRENT CONSUMPTION (mA)	50	50	85
HIGH LEVEL OUTPUT (Volt)	5 (TIP) - 4.75 (MIN) ($I_{MAX}=25mA$)	3.4 (TIP) - 2.4 (MIN) ($I_{MAX}=20mA$)	3.4 (TIP) - 2.4 (MIN) ($I_{MAX}=20mA$)
LOW LEVEL OUTPUT (Volt)	0.25 (TIP) - 0.6 (MAX) ($I_{MAX}=25mA$)	0.2 (TIP) - 0.4 (MAX) ($I_{MAX}=20mA$)	0.2 (TIP) - 0.4 (MAX) ($I_{MAX}=20mA$)
OUTPUT SIGNAL	Differential	Differential	Differential
MAXIMUM FREQUENCY (KHz)	100	100	720
POWER SUPPLY VOLTAGE (Volt)	$5 V_{DC} \pm 10\%$	$5 V_{DC} \pm 10\%$	$5 V_{DC} \pm 10\%$

FEATURES		RH 1S3H
MODEL		RH 1S3H
BASIC STEP ANGLE		$1.8 \pm 0.09^\circ$
BIPOLAR CURRENT (Amp)		2.3
UNIPOLAR CURRENT (Amp)		
RESISTANCE (Ohm)		1.2
INDUCTANCE (mH)		3.0
BIPOLAR HOLDING TORQUE (Ncm)		80
UNIPOLAR HOLDING TORQUE (Ncm)		
ROTOR INERTIA ($Kgm^2 \times 10^{-7}$)		94
THEORETICAL ACCELERATION ($rad \times sec^{-2}$)		85100
BACK E.M.F. (V/Krpm)		34.7
MASS (Kg)		0.51
PROTECTION DEGREE		IP40
LEADS CODE		V



RTA MOTOR CABLE COLORS

DESCRIPTION	COLOR
CHANNEL A	GREEN
CHANNEL A-	WHITE
CHANNEL B	YELLOW
CHANNEL B-	BROWN

ENCODER PIN-OUT

DESCRIPTION	04D0 PINS	04E0/OHE0 PINS	R.T.A. CABLE LEADS COLOR
CHANNEL A+	6	6	GREEN
CHANNEL A-	5	5	PURPLE
CHANNEL B+	8	8	BLUE
CHANNEL B-	7	7	BROWN
+ DC (5V)	2	2	RED
GROUND	3	3	BLACK
INDEX+	/	10	ORANGE
INDEX-	/	9	WHITE

R.T.A. CABLE (30 cm) CVEPA0D0M3 CVEPAZD0M3

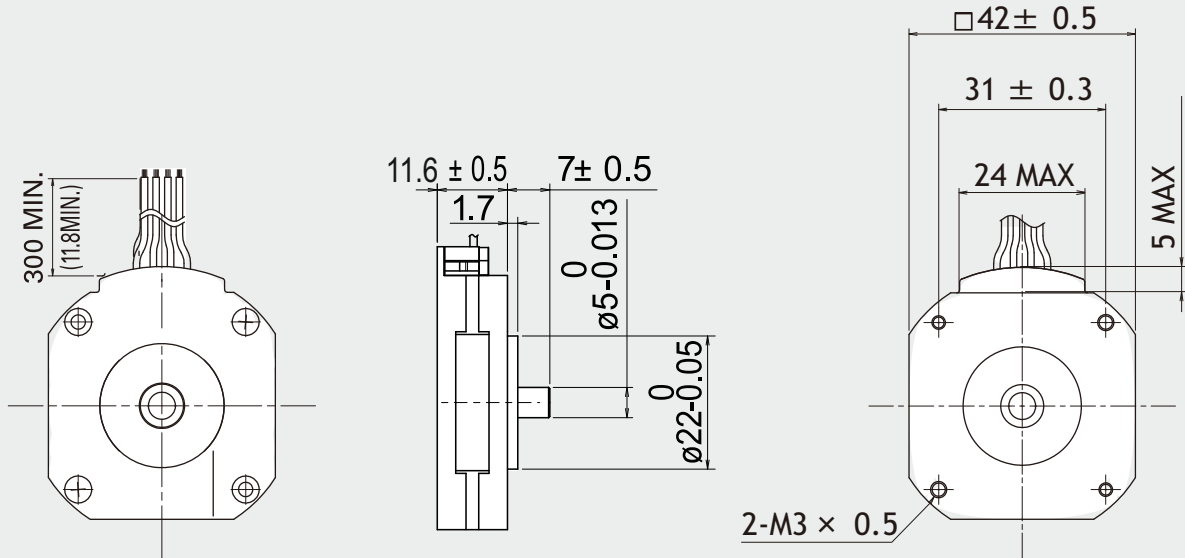
Suggested R.T.A. drive series: BSD, CSD, FLEX-DRIVE

SS2421-5041

PANCAKE
TYPE
motor

SANYO DENKI
SANMOTION

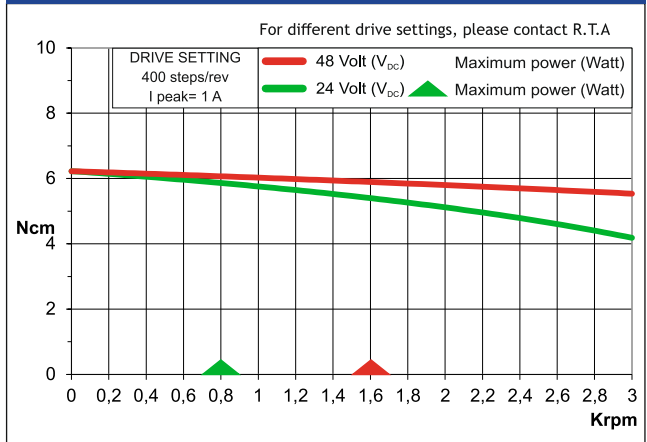
Dimensions (Unit:mm)



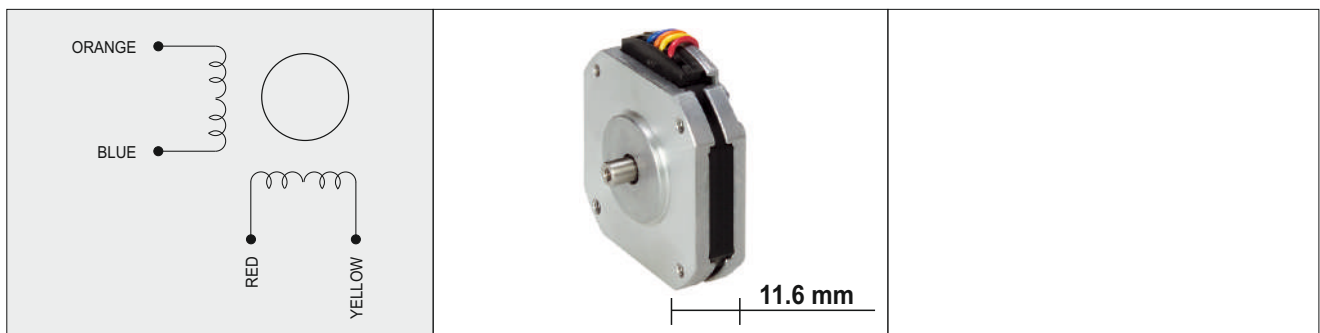
FEATURES

MODEL	SS2421-5041	
BASIC STEP ANGLE	1.8° ± 0.09°	
BIPOLAR CURRENT	(Amp)	1.0
UNIPOLAR CURRENT	(Amp)	
RESISTANCE	(Ohm)	3.5
INDUCTANCE	(mH)	1.2
BIPOLAR HOLDING TORQUE	(Ncm)	8.3
UNIPOLAR HOLDING TORQUE	(Ncm)	
ROTOR INERTIA	(Kg ^m × 10 ⁻⁷)	0.015
THEORETICAL ACCELERATION	(rad × sec. ⁻²)	55000
BACK E.M.F.	(V/Krpm)	8.0
MASS	(Kg)	0.07

TORQUE/SPEED CURVE

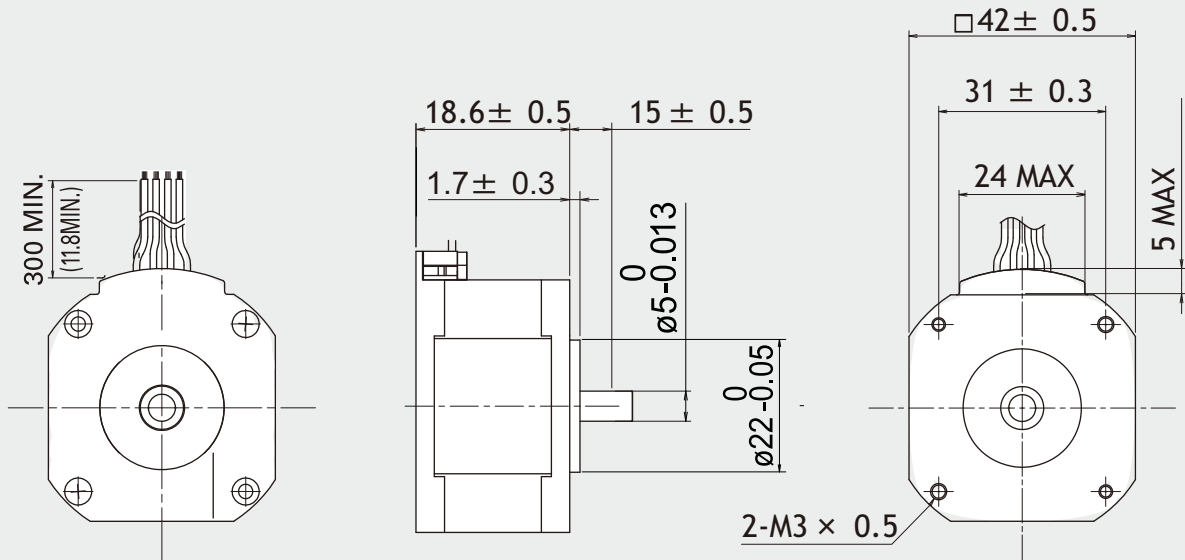


R.T.A. s.r.l. PAVIA (ITALY) SANYO DENKI CO., Ltd (JAPAN)



Suggested driver: contact R.T.A.

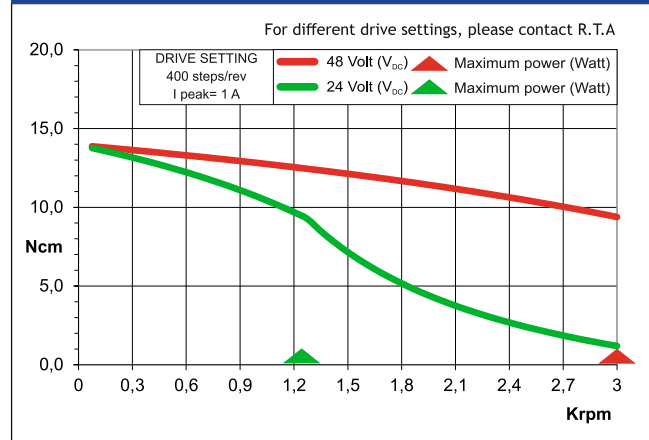
Dimensions (Unit:mm)



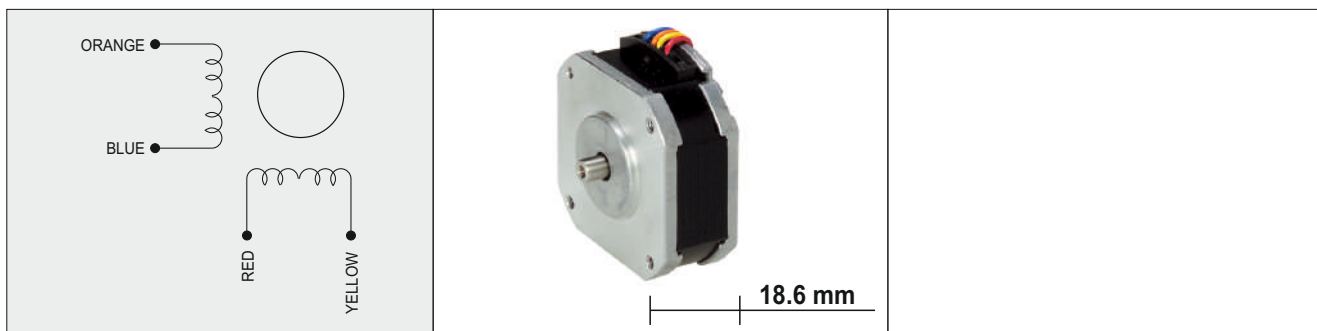
FEATURES

MODEL	SS2422-5041 (SS2422-5011)	
BASIC STEP ANGLE		1.8° ± 0.09°
BIPOLAR CURRENT	(Amp)	1.0
UNIPOLAR CURRENT	(Amp)	
RESISTANCE	(Ohm)	5.4
INDUCTANCE	(mH)	2.9
BIPOLAR HOLDING TORQUE	(Ncm)	18.6
UNIPOLAR HOLDING TORQUE	(Ncm)	
ROTOR INERTIA	(Kg ^m 2 x 10 ⁻⁷)	0.028
THEORETICAL ACCELERATION	(rad x sec. ⁻²)	63000
BACK E.M.F.	(V/Krpm)	18
MASS	(Kg)	0.14

TORQUE/SPEED CURVE



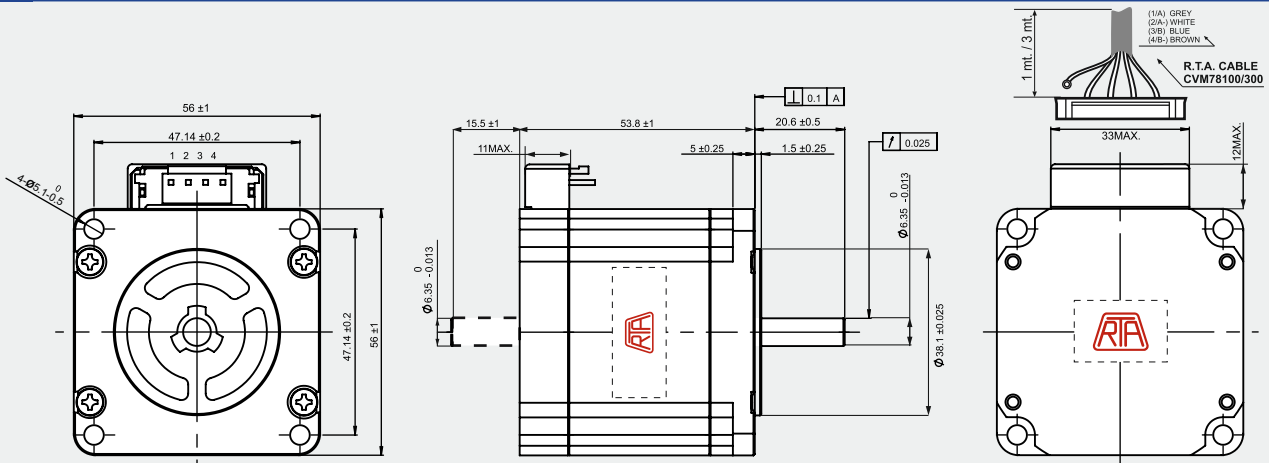
R.T.A. s.r.l. PAVIA (ITALY) SANYO DENKI CO., Ltd (JAPAN)



Suggested driver: contact R.T.A.

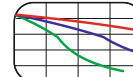
RH 2S1M

Dimensions (Unit:mm)



MOTOR CONNECTOR IS JST mod. B4P-VH 4 POLES MALE.
FOR CONNECTION USE JST mod. VHR-4N FEMALE CONNECTOR AND
mod. SVH-21 T-P1.1 CONTACTS.
NOTE: RH2S (RS) MOTORS NEED CVM78100 AND CVM78300
R.T.A. CABLES. CONTACT R.T.A. FOR FURTHER DETAILS.

**+ 30%
HOLDING
TORQUE**

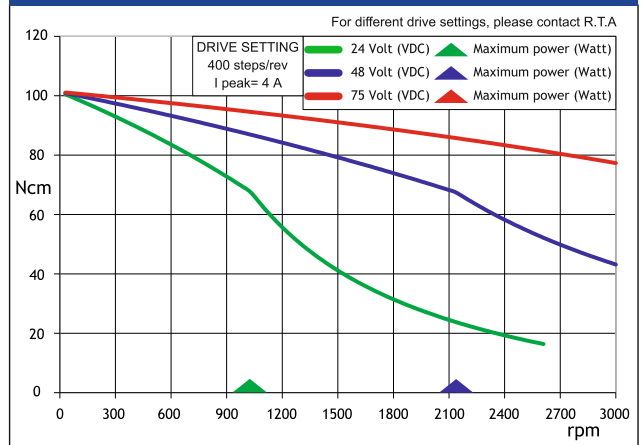


THAN THE PREVIOUS «H» SERIES

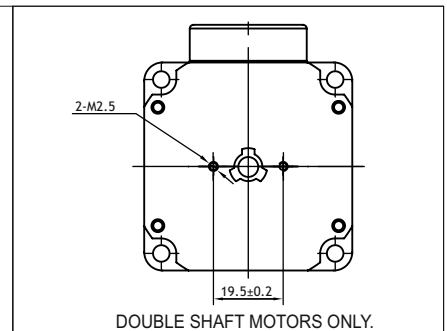
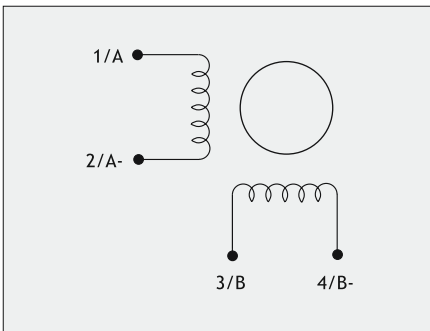
FEATURES

MODEL	RH 2S1M (RH 2S1M-RS)	
BASIC STEP ANGLE	1.8 ± 0.09°	
BIPOLAR CURRENT	(Amp)	4.0
UNIPOLAR CURRENT	(Amp)	
RESISTANCE	(Ohm)	0.37
INDUCTANCE	(mH)	1.5
BIPOLAR HOLDING TORQUE	(Ncm)	140
ROTOR INERTIA	(Kgm ² x 10 ⁻⁷)	280
THEORETICAL ACCELERATION	(rad x sec. ⁻²)	50000
BACK E.M.F.	(V/Krpm)	35
MASS	(Kg)	0.69
INTERNATIONAL STANDARDS	UL, CSA	
PROTECTION DEGREE	IP40	
LEADS CODE	V	

TORQUE/SPEED CURVE



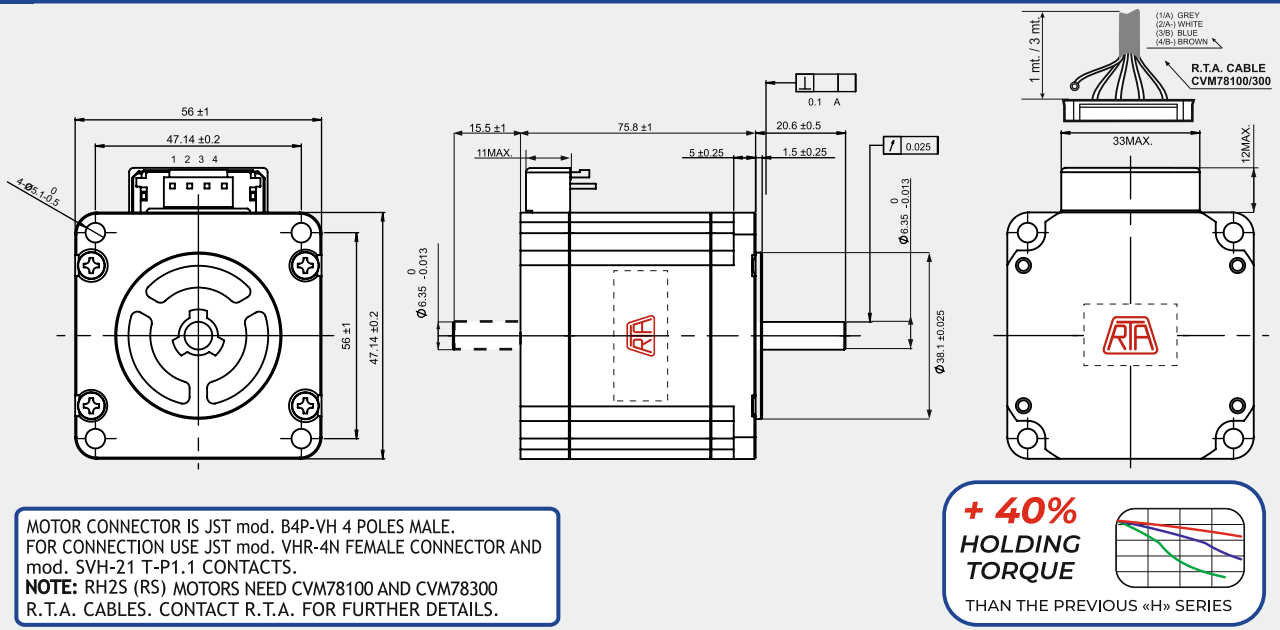
Codes between brackets refer to double shaft models.



Suggested R.T.A. drive series: BSD, CSD, FLEX-DRIVE, NDC

RH 2S2M

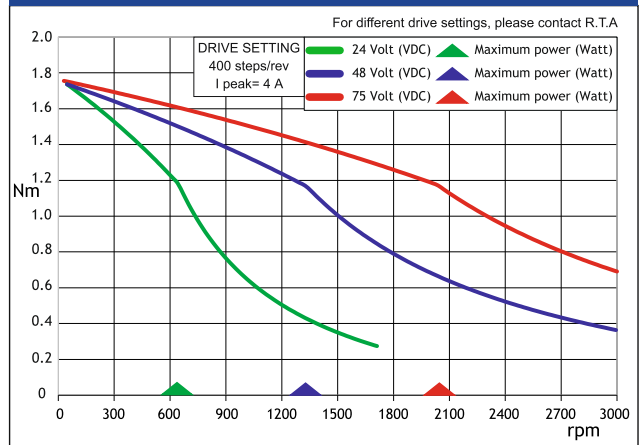
Dimensions (Unit:mm)



FEATURES

MODEL	RH 2S2M (RH 2S2M-RS)	
BASIC STEP ANGLE	1.8 ± 0.09°	
BIPOLAR CURRENT	(Amp)	4.0
UNIPOLAR CURRENT	(Amp)	
RESISTANCE	(Ohm)	0.52
INDUCTANCE	(mH)	2.4
BIPOLAR HOLDING TORQUE	(Ncm)	235
ROTOR INERTIA	(Kg ^m 2 x 10 ⁻⁷)	500
THEORETICAL ACCELERATION	(rad x sec. ⁻²)	47000
BACK E.M.F.	(V/Krpm)	58.7
MASS	(Kg)	1.1
INTERNATIONAL STANDARDS	UL, CSA	
PROTECTION DEGREE	IP40	
LEADS CODE	V	

TORQUE/SPEED CURVE



Codes between brackets refer to double shaft models.

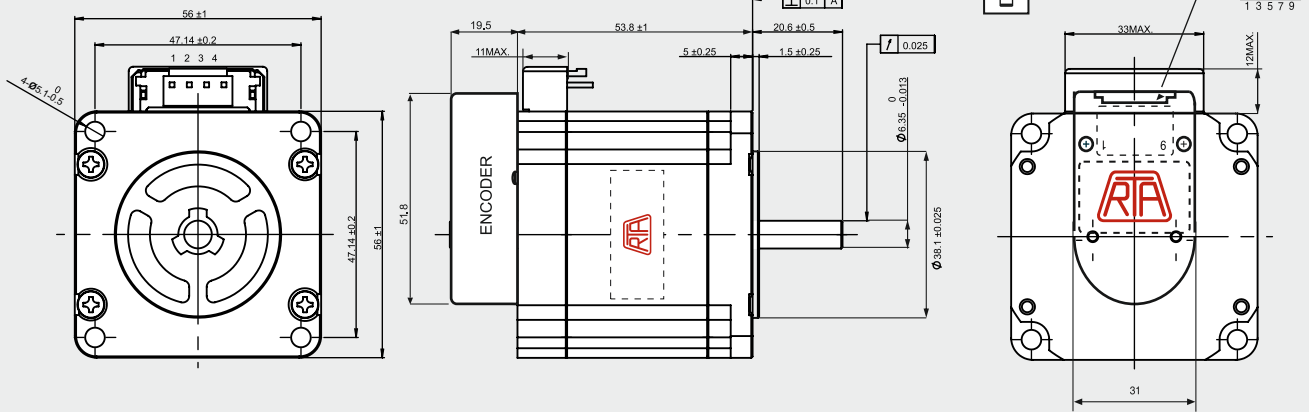
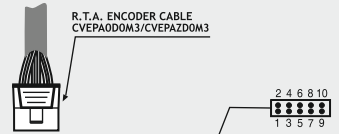
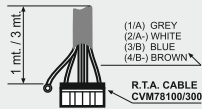


Suggested R.T.A. drive series: BSD, CSD, FLEX-DRIVE, NDC

RH 2S1M-OXX0

Dimensions (Unit:mm)

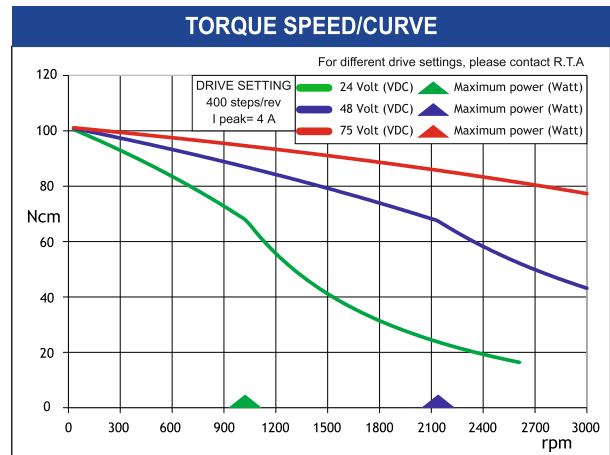
+ 30% HOLDING TORQUE
THAN THE PREVIOUS «H» SERIES



ENCODER OPTIONS:	RH 2S1M-04D0	RH 2S1M-04E0	RH 2S1M-0HE0
RESOLUTION	400 cpr	400 cpr	4000 cpr
INDEX	No	Yes	Yes
CURRENT CONSUMPTION (mA)	50	50	85
HIGH LEVEL OUTPUT (Volt)	5 (TIP) - 4.75 (MIN) (I _{MAX} =25mA)	3.4 (TIP) - 2.4 (MIN) (I _{MAX} =20mA)	3.4 (TIP) - 2.4 (MIN) (I _{MAX} =20mA)
LOW LEVEL OUTPUT (Volt)	0.25 (TIP) - 0.6 (MAX) (I _{MAX} =25mA)	0.2 (TIP) - 0.4 (MAX) (I _{MAX} =20mA)	0.2 (TIP) - 0.4 (MAX) (I _{MAX} =20mA)
OUTPUT SIGNAL	Differential	Differential	Differential
MAXIMUM FREQUENCY (KHz)	100	100	720
POWER SUPPLY VOLTAGE (Volt)	5 V _{DC} ± 10%	5 V _{DC} ± 10%	5 V _{DC} ± 10%

ENCODER NEEDS CVEPA0D0M3 OR CVEPAZD0M3 R.T.A. CABLE. CONTACT R.T.A. FOR FURTHER DETAILS

FEATURES		RH 2S1M-OXX0
MODEL		RH 2S1M-OXX0
BASIC STEP ANGLE		1.8 ± 0.09°
BIPOLAR CURRENT	(Amp)	4.0
UNIPOLAR CURRENT	(Amp)	
RESISTANCE	(Ohm)	0.37
INDUCTANCE	(mH)	1.5
BIPOLAR HOLDING TORQUE	(Ncm)	140
UNIPOLAR HOLDING TORQUE	(Ncm)	
ROTOR INERTIA	(Kg·m ² × 10 ⁻⁷)	280
THEORETICAL ACCELERATION	(rad × sec. ⁻²)	50000
BACK E.M.F.	(V/Krpm)	35
MASS	(Kg)	0.69
PROTECTION DEGREE		IP40
LEADS CODE		V

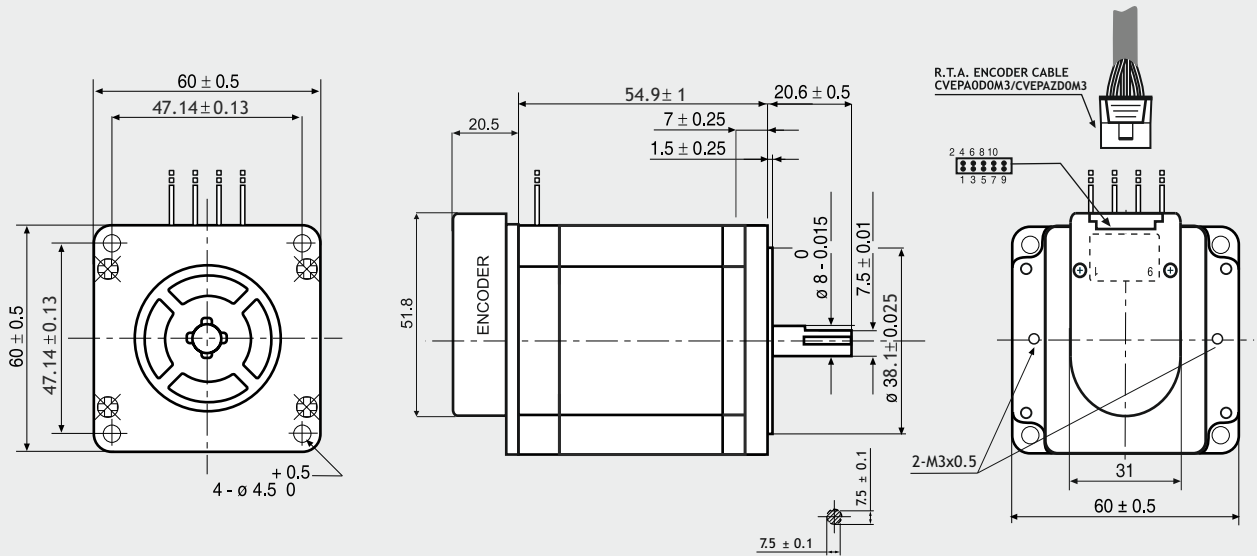


DESCRIPTION	ENCODER PIN-OUT			R.T.A. CABLE LEADS COLOR
	04D0 PINS	04E0 PINS	0HE0 PINS	
CHANNEL A+	6	6	6	GREEN
CHANNEL A-	5	5	5	PURPLE
CHANNEL B+	8	8	8	BLUE
CHANNEL B-	7	7	7	BROWN
+ DC (5V)	2	2	2	RED
GROUND	3	3	3	BLACK
INDEX+	/	10	10	ORANGE
INDEX-	/	9	9	WHITE

Suggested R.T.A. drive series: BSD, CSD, FLEX-DRIVE, NDC

EM 6H1M-OXX0

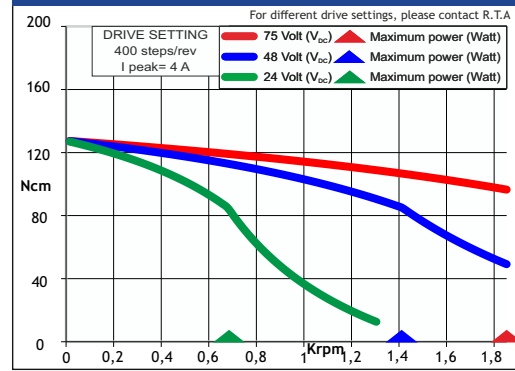
Dimensions (Unit:mm)



SANYO DENKI MOTOR FEATURES

MODEL	EM 6H1M-OXX0
SANYO DENKI MOTOR CODE	103-H7822-1731
BASIC STEP ANGLE	1.8° ± 0.09°
BIPOLAR PARALLEL CURRENT (A)	4.0
RESISTANCE (Ohm)	0.43
INDUCTANCE (mH)	1.38
BIPOLAR HOLDING TORQUE (Ncm)	137
ROTOR INERTIA (Kg·m ² × 10 ⁻⁷)	400
THEORETICAL ACCELERATION (rad × sec. ⁻²)	34200
BACK E.M.F. (V/Krpm)	43
MASS (Kg)	1.3
LEADS CODE	V

TORQUE/SPEED CURVE



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

ENCODER OPTIONS:	EM 6H1M-04D0	EM 6H1M-04E0	EM 6H1M-0HE0
RESOLUTION	400 cpr	400 cpr	4000 cpr
INDEX	No	Yes	Yes
CURRENT CONSUMPTION (mA)	50	50	85
HIGH LEVEL OUTPUT (Volt)	5 (TIP) - 4.75 (MIN) (I _{max} =25mA)	3.4 (TIP) - 2.4 (MIN) (I _{max} =20mA)	3.4 (TIP) - 2.4 (MIN) (I _{max} =20mA)
LOW LEVEL OUTPUT (Volt)	0.25 (TIP) - 0.6 (MAX) (I _{max} =25mA)	0.2 (TIP) - 0.4 (MAX) (I _{max} =20mA)	0.2 (TIP) - 0.4 (MAX) (I _{max} =20mA)
OUTPUT SIGNAL	Differential	Differential	Differential
MAXIMUM FREQUENCY (KHz)	100	100	720
POWER SUPPLY VOLTAGE (Volt)	5 V _{dc} ± 10%	5 V _{dc} ± 10%	5 V _{dc} ± 10%

ENCODER NEEDS CVEPA0D0M3 OR CVEPAZD0M3 R.T.A. CABLE. CONTACT R.T.A. FOR FURTHER DETAILS

DESCRIPTION	ENCODER PIN-OUT			R.T.A. CABLE LEADS COLOR
	04D0 PINS	04E0 PINS	0HE0 PINS	
CHANNEL A+	6	6	6	GREEN
CHANNEL A-	5	5	5	PURPLE
CHANNEL B+	8	8	8	BLUE
CHANNEL B-	7	7	7	BROWN
+ DC (5V)	2	2	2	RED
GROUND	3	3	3	BLACK
INDEX+	/	10	10	ORANGE
INDEX-	/	9	9	WHITE

R.T.A. CABLE CVEPA0D0M3 CVEPAZD03M CVEPAZD03M

Suggested R.T.A. drive series: BSD, CSD, NDC, ADW, FLEX-DRIVE

STEPPING MOTORS ACCESSORIES

FRONT BRAKES



FB-M12-17-02-00000

FRONT BRAKES

M12
CONNECTOR

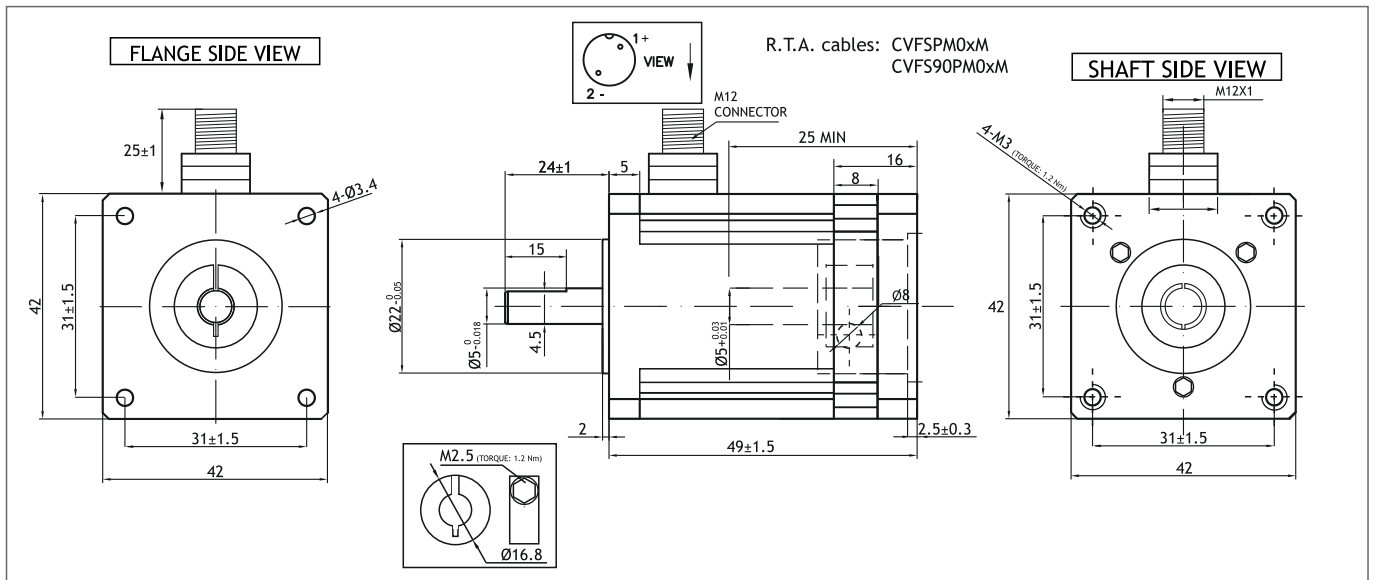
24 VDC

NEMA 17



SCAN THE QR CODE
TO WATCH A VIDEO
ON FB SERIES
FRONT BRAKES

Dimensions (Units:mm)



MODEL	Static torque (Nm)	Current (mA)	Voltage (V)	Power (W)	Mass (Kg)
FB-M12-17-02-00000	0.2	170	24 VDC	4.1	0.27

Suggested motors and cables

MOUNTING OPERATION MODE:

NEMA 17 motors

R.T.A. cables

Shield
Red +
Yellow -

CVFSPM0xM x=1m/3m

CVFS90PM0xM x=1m/3m

■ Tightening torque M= 1.2 Nm ■ Locking bolt M5 ■ R.T.A. Quality Control



CAUTION

Use for safety related functions is forbidden (EN 60204-1). Moreover, when the application arrangement is in such way that a brake fault or failure could generate a risk for property or human life, external independent safety protection system must be provided in the machine.

FB-M12-23-08-00000

FRONT BRAKES

M12
CONNECTOR

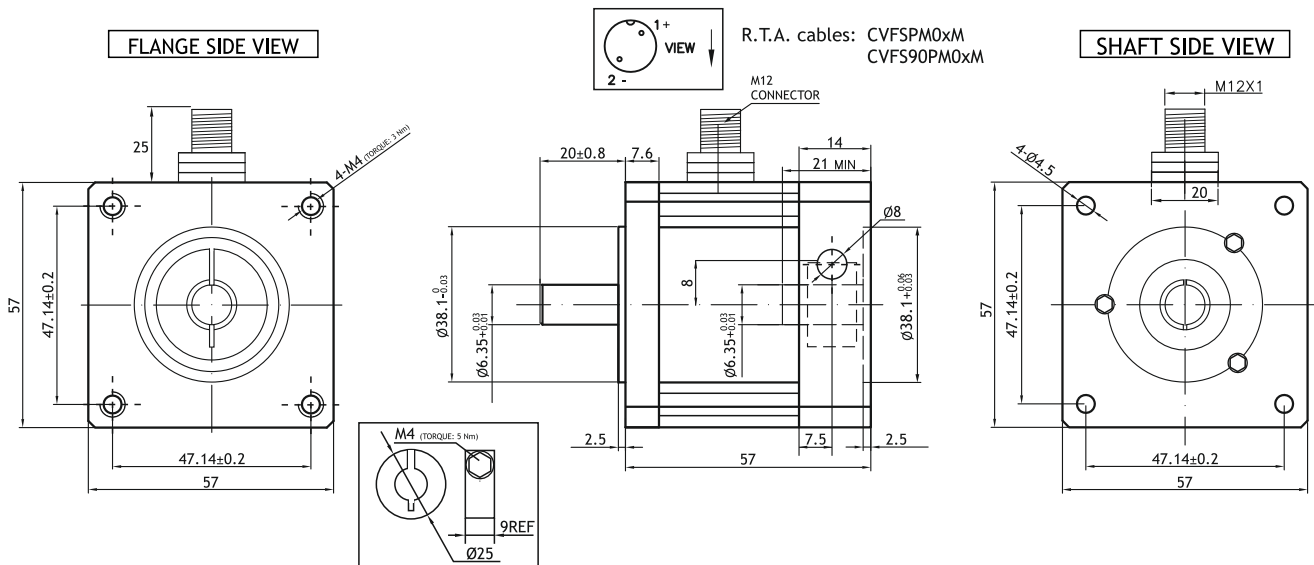
24 VDC

NEMA 23



SCAN THE QR CODE
TO WATCH A VIDEO
ON FB SERIES
FRONT BRAKES

Dimensions (Units:mm)



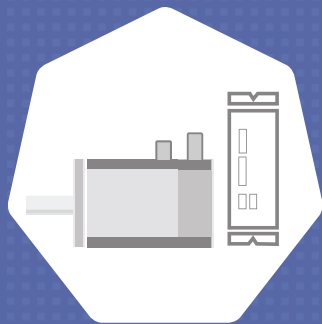
MODEL	Static torque (Nm)	Current (mA)	Voltage (V)	Power (W)	Mass (Kg)
FB-M12-23-08-00000	0.8	340	24 VDC	8.1	0.63

Suggested motors and cables

	<p>NEMA 23 motors</p>	<p>R.T.A. cables</p> <p>Shield Red + Yellow -</p> <p>CVFSPM0xM x=1m/3m</p>
		<p>CVFS90PM0xM x=1m/3m</p>
<p>MOUNTING OPERATION MODE: ■ Tightening torque M= 5 Nm ■ Locking bolt M4 ■ R.T.A. Quality Control</p>		



Use for safety related functions is forbidden (EN 60204-1). Moreover, when the application arrangement is in such way that a brake fault or failure could generate a risk for property or human life, external independent safety protection system must be provided in the machine.



SERVO SYSTEMS



SANMOTION
AC SERVO SYSTEMS **RS3**

230
VAC

SIL3
SAFE TORQUE
OFF (STO)

EtherCAT

3rd
GENERATION!

Dimensions: (60x160x130)
Model RS3A03A2HAE

230 VAC SERVOAMPLIFIERS

**ADVANCED SAFETY
MODULE**

RS3 SERIES AC SERVOAMPLIFIERS - EtherCAT INTERFACE & STO

FIVE DIGIT DISPLAY: It allows to monitor amplifier and EtherCAT Network.

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

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

Internal regenerative resistor. External regenerative resistor (optional)

EtherCAT INTERFACE CONNECTOR: RJ45 - CAT5e.

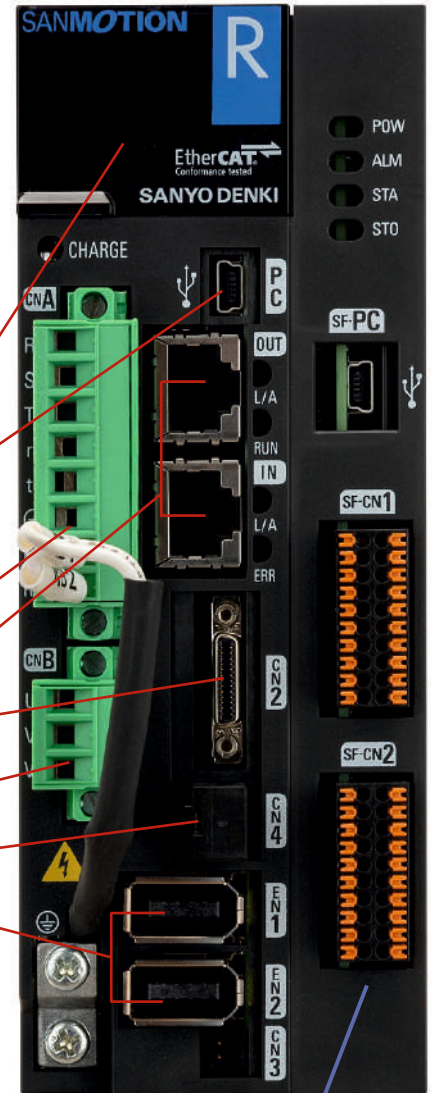
I/O CONNECTOR: 7 inputs and 2 outputs.

MOTOR POWER CONNECTOR - CONNETTORE POTENZA MOTORE

SAFE TORQUE OFF SIL3 CONNECTOR



SECOND ENCODER CONNECTOR FOR EXTERNAL LINEAR SCALE TO AVOID BACKLASH



MAIN FEATURES OF THE 3rd GENERATION



- Advanced safety function
- 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.
- Speed frequency response of 2.2 kHz [3.3 times that of previous RS1 model!]
- Safe Torque Off (STO) function - SIL3/IEC61508. Performance Level - PL = e/ISO13849-1
- RS3A03A2HAE covers 100W, 200W, 400W, 750W, 1000W, 1500W motors

SAFETY FUNCTIONS SPECIFICATIONS

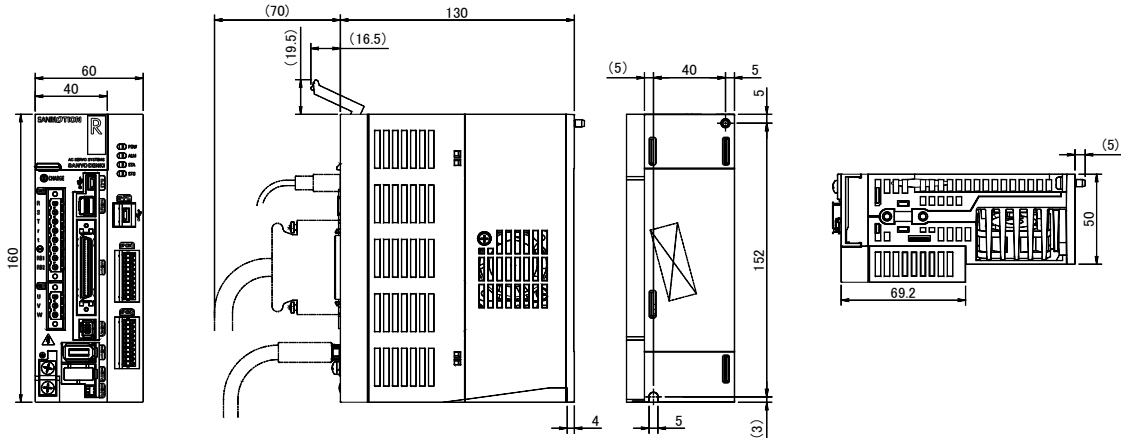
STO	SAFE TORQUE OFF
SS1	SAFE STOP 1
SS2	SAFE STOP 2
SOS	SAFE OPERATING STOP
SLS	SAFELY-LIMITED SPEED
SBC	SAFE BRAKE CONTROL
SSM	SAFE SPEED MONITOR

TECHNICAL DATA	EtherCAT Control			
	MODEL	RS3A03A2HAE	RS3A05A2HAE	RS3A10A2HAE
MAX CURRENT		30 Amp	50 Amp	100 Amp
MOTOR OUTPUT STAGE	IGBT, PWM control, sinusoidal current			
POWER SUPPLY VOLTAGE	Single-phase or three-phase (configurable by the user) 200 VAC or 230 VAC (+10%, -15%) 50/60 Hz (± 3 Hz)			
LOGIC SUPPLY VOLTAGE	Single-phase from 200 VAC to 230 VAC (+10%, -15%) 50/60 Hz (± 3 Hz)			
DIMENSIONS (mm)	60x160x130	105x160x130	120x205x220	
MASS (kg)	1.1	1.65	4.2	

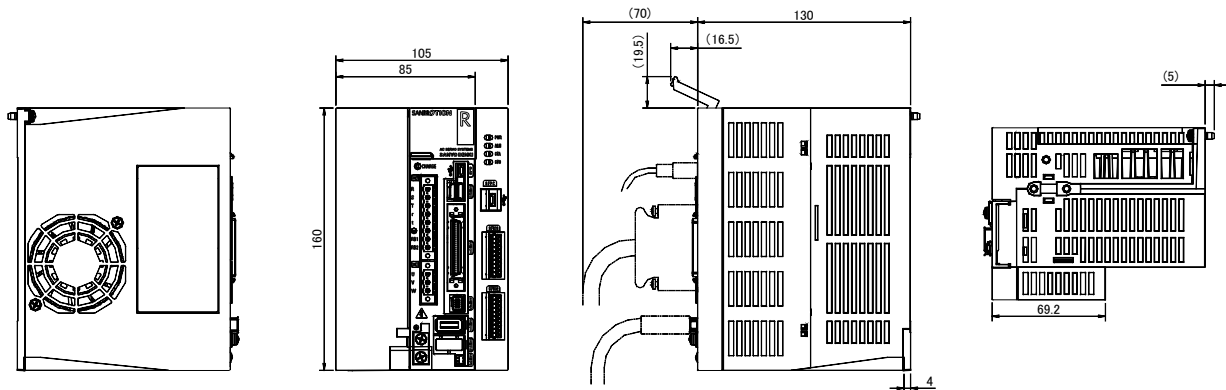
R.T.A. - s.r.l. PAVIA (ITALY) SANYO DENKI CO., Ltd (JAPAN)

“RS3A” SERIES AC SERVOAMPLIFIERS: EtherCAT VERSION OUTLINE DRAWINGS

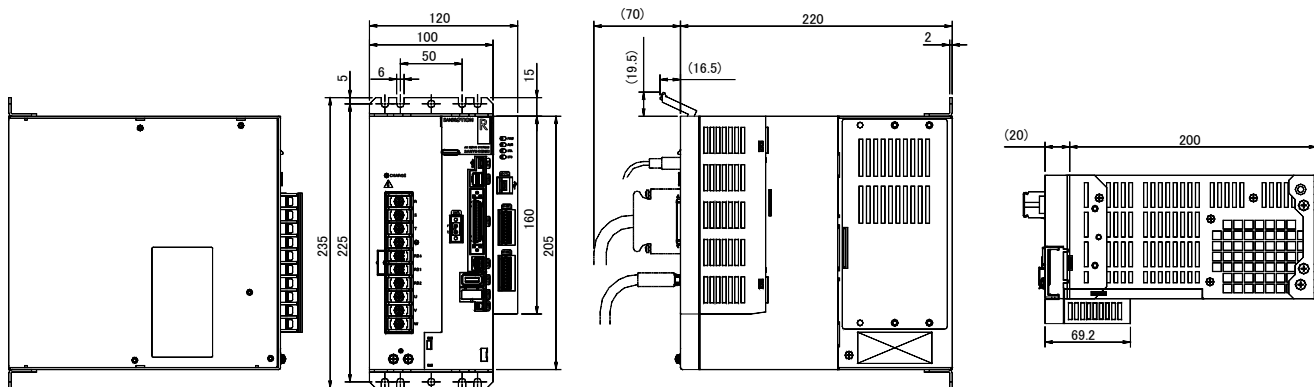
RS3A03A2HAE



RS3A05A2HAE



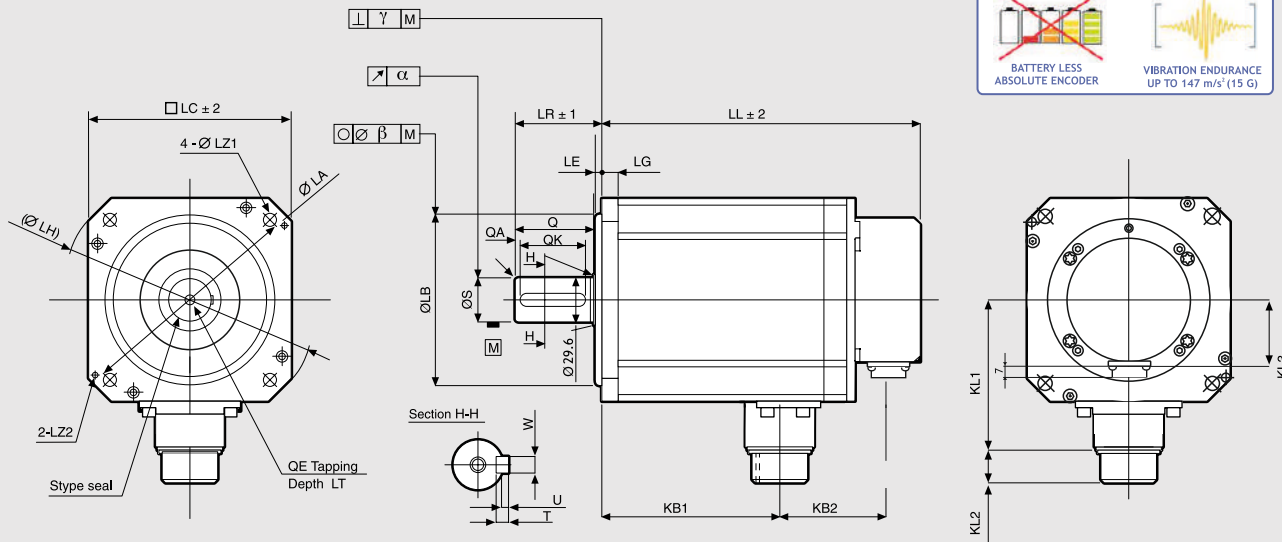
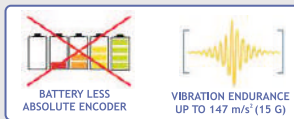
RS3A10A2HAE



Dimensions mm.

R2AA13200LXR00M (R2AA13200LCR00M)

Dimensions (Unit:mm)



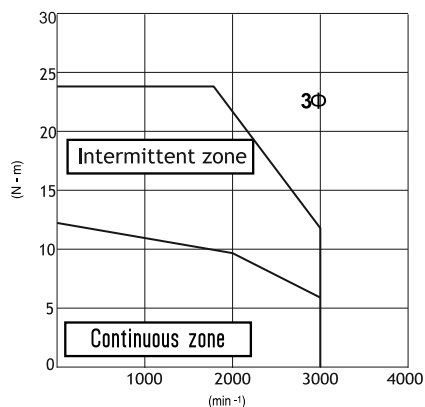
without brake		with brake		KL1	KL2	KL3	LG	LA	LB	LE	LH	LC	LZ1	LZ2	LR	S	Q	QA	QK	W	T	U	KB1	QE	LT
LL	KB2	LL	KB2																						
171	57	216	103	98	21	38	12	145	0 110-0.035	4	165	130	9	M6	55	0 28-0.013	50	3	42	0 8-0.036	7	3	99	M8	25

FEATURES

MODEL	R1AA13200LXR00M	
NOMINAL POWER	(W)	2000
NOMINAL SPEED	(rpm)	2000
MAXIMUM SPEED	(rpm)	3000
NOMINAL TORQUE	(Nm)	9.5
STALL TORQUE	(Nm)	12
MAXIMUM TORQUE	(Nm)	24
INERTIA	(Kg·m ²)	12.2 × 10 ⁻⁴
ENCODER	(imp./rev)	SINGLE TURN: 131072 imp/rev (17 bit) MULTI TURN: 65536 turns (16 bit)
PROTECTION DEGREE		IP65
WEIGHT	[version with brake] (Kg)	10 (12)

TORQUE CURVE

R1AA13200F [2kW] + RS3A10



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

WITHOUT BRAKE
R2AA13200LXR00M



Indicated performances refer to motor controlled by related new RS3 standard and EtherCat amplifiers.

3Φ = torque curve with three-phase power supply

WITHOUT BRAKE
R2AA13200LCR00M



Suggested amplifiers: RS3A05A0AA2, RS3A05A2HA4W00

R2CA18350LXROOM (R2CA18350LCROOM)

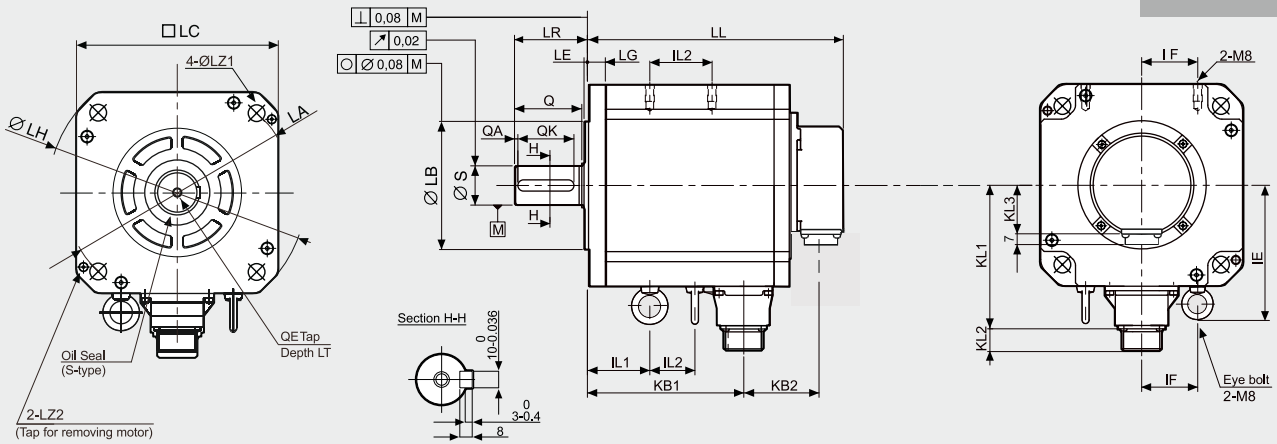
SANYO DENKI
SANMOTION

Dimensions (Unit:mm)

GAUSS



400
VAC

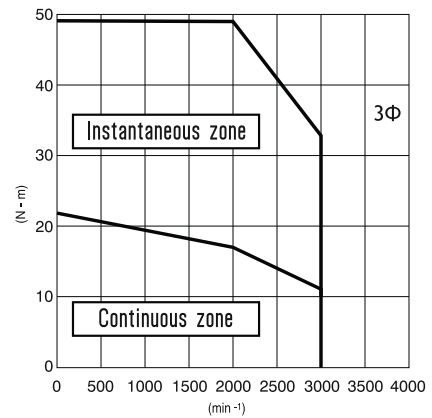


without brake	with brake	KL1	KL2	KL3	LG	LA	LB	LE	LH	LC	LZ1	LZ2	LR	S	Q	QA	QK	IL1	IL2	IF	IE	KB1	QE	LT
LL KB2	LL KB2	123	21	38	16	200	0 Ø114.3-0.035	3	Ø230	□180	Ø13.5	M8	65	0 Ø35-0.016	60	3	50	47	20	50	123	92	M8	25

FEATURES

MODEL	R2CA18350LXROOM (R2CA18350LCROOM)	
NOMINAL POWER	(W)	3500
NOMINAL SPEED	(rpm)	2000
MAXIMUM SPEED	(rpm)	3000
NOMINAL TORQUE	(Nm)	17.0
STALL TORQUE	(Nm)	22.0
MAXIMUM TORQUE	(Nm)	49.0
INERTIA	(Kg·m ²)	40×10 ⁻⁴
BATTERY-LESS ABSOLUTE ENCODER	(imp./rev)	SINGLE TURN: 131072 imp/rev (17 bit) MULTI TURN: 65536 turns (16 bit)
PROTECTION DEGREE		IP65
WEIGHT	(Kg)	15.5

TORQUE CURVE R2CA18350LXH [3.5kW] + RS3C05



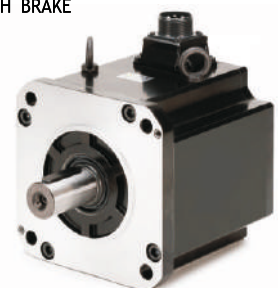
WITHOUT BRAKE



Indicated performances refer to motor controlled by related RS3 standard and EtherCat amplifiers.

3Φ = torque curve with three-phase power supply

WITH BRAKE



Suggested amplifiers: RS3C05A0AA2, RS3C05A2HA4

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

R2CA18450HXROOM (R2CA18450HCROOM)

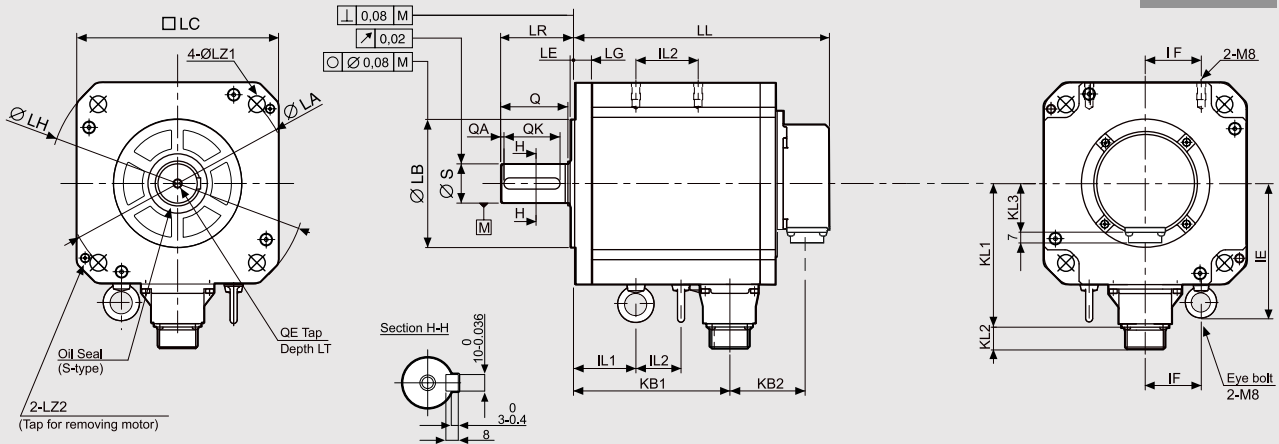
SANYO DENKI
SANMOTION

Dimensions (Unit:mm)

RA US



**400
VAC**



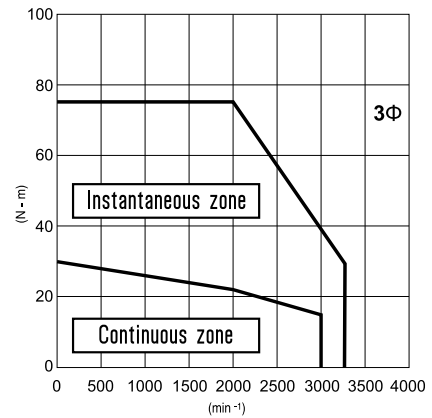
without brake		with brake		KL1	KL2	KL3	LG	LA	LB	LE	LH	LC	LZ1	LZ2	LR	S	Q	QA	QK	IL1	IL2	IF	IE	KB1	QE	LT
176	52	223	99	123	21	38	16	200	0 Ø114.3-0.035	3	Ø230	180	Ø13.5	M8	65	0 Ø35-0.016	60	3	50	57	20	50	123	109	M8	25

FEATURES

MODEL	R2CA18450HXROOM (R2CA18450HCROOM)	
NOMINAL POWER	(W)	4500
NOMINAL SPEED	(rpm)	2000
MAXIMUM SPEED	(rpm)	3500
NOMINAL TORQUE	(Nm)	21.5
STALL TORQUE	(Nm)	30
MAXIMUM TORQUE	(Nm)	75.0
INERTIA	(Kg·m ²)	50×10 ⁻⁴
BATTERY-LESS ABSOLUTE ENCODER	(imp./rev)	SINGLE TURN: 131072 imp/rev (17 bit) MULTI TURN: 65536 turns (16 bit)
PROTECTION DEGREE		IP65
WEIGHT	(Kg)	20 [24]

TORQUE CURVE

R2CA18450HX [4.5kW] + RS3C10



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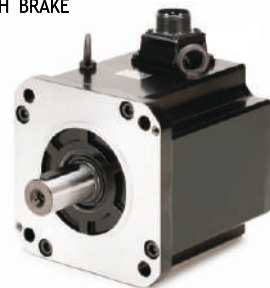
WITHOUT BRAKE



Indicated performances refer to motor controlled by related RS3 standard and EtherCat amplifiers.

3Φ = torque curve with three-phase power supply

WITH BRAKE



Suggested amplifiers: RS3C10A0AA2, RS3C10A2HA4

R2CA18750HCR00M

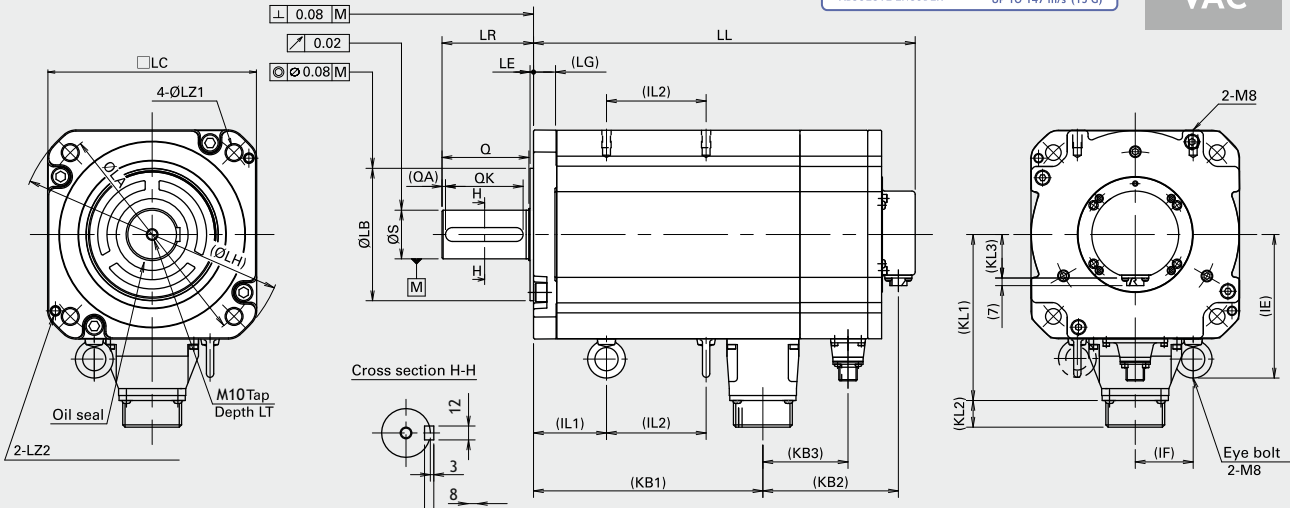
SANYO DENKI
SANMOTION

Dimensions (Unit:mm)

C[®] **RS** US



400
VAC

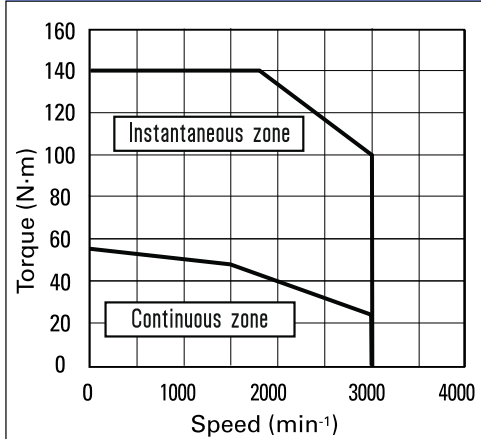


without brake			with brake			LG	KL1	KL2	KL3	LA	LB	LE	LH	LC	LZ1	LZ2	LR	S	Q	QA	QK	KB1	LT	IE	IF	IL1	IL2
LL	KB2	KB3	LL	KB2	KB3																						
--	--	--	329	117	74	19	144	22	38	200	114.3 ⁰ -0.0035	3	230	180	13.5	M8	79	42 ⁰ -0.016	75	3	67	198	25	123	50	63	86

FEATURES

MODEL	R2CA18750HCR00M	
NOMINAL POWER	(W)	7500
NOMINAL SPEED	(rpm)	1500
MAXIMUM SPEED	(rpm)	3000
NOMINAL TORQUE	(Nm)	48
STALL TORQUE	(Nm)	54.9
MAXIMUM TORQUE	(Nm)	140
INERTIA	(Kg·m ²)	98 × 10 ⁻⁴
BATTERY-LESS ABSOLUTE ENCODER	(imp./rev)	SINGLE TURN: 131072 imp/rev (17 bit) MULTI TURN: 65536 turns (16 bit)
PROTECTION DEGREE		IP65
WEIGHT	(Kg)	38

TORQUE CURVE R2CA18750HCR [7.5 KW] + RS3C15



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

R2CA18750HCR00M



Indicated performances refer to motor controlled by related RS3 standard and EtherCat amplifiers.

3Φ = torque curve with three-phase power supply

Suggested amplifiers: RS3C15A2HL4

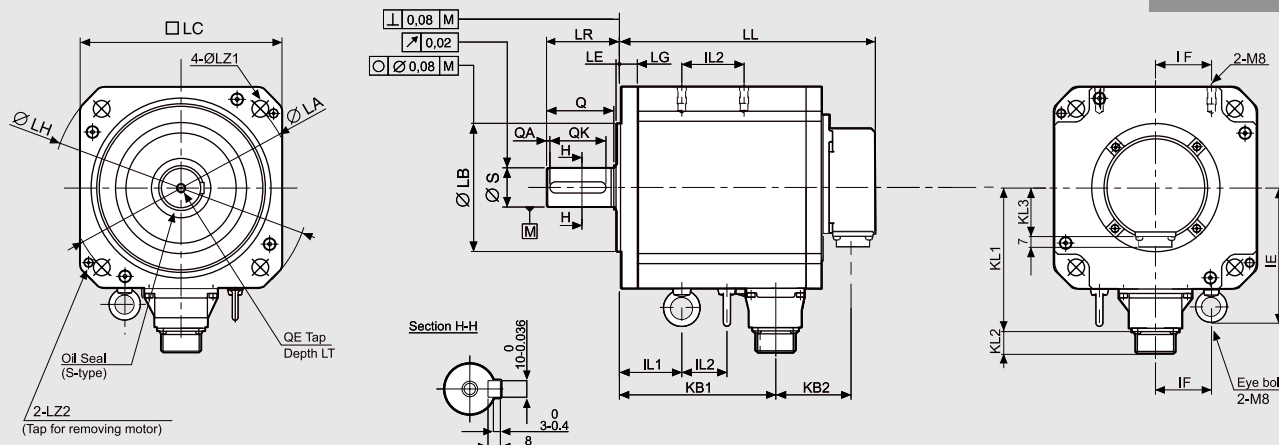
R2CA2215KVXH00M

SANYO DENKI
SANMOTION

Dimensions (Unit:mm)

CALUS

400
VAC



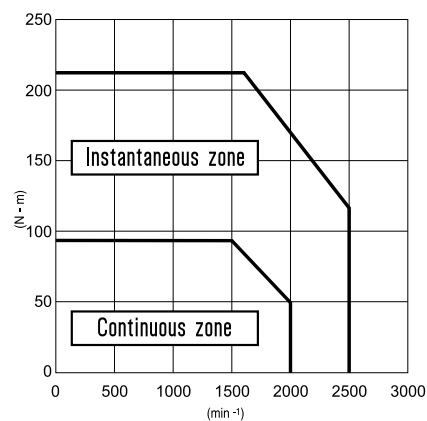
LL	KB2	KL1	KL2	KL3	LG	LA	LB	LE	LH	LC	LZ1	LZ2	LR	S	Q	QA	QK	IL1	IL2	IF	IE	KB1	QE	LT
397	78	162	22	38	19	235	0 Ø200-0.046	4	Ø270	Ø220	Ø13.5	M10	79	0 Ø55-0.019	79	3	67	98	150	60	142	304	M10	25

FEATURES

MODEL	R2CA2215KVXH00M	
NOMINAL POWER	(W)	15000
NOMINAL SPEED	(rpm)	1500
MAXIMUM SPEED	(rpm)	2500
NOMINAL TORQUE	(Nm)	95.0
STALL TORQUE	(Nm)	95.0
MAXIMUM TORQUE	(Nm)	215
INERTIA	(Kg*m ²)	288×10 ⁻⁴
ENCODER	(imp./rev)	131072 (17BIT)
PROTECTION DEGREE		IP67
WEIGHT	(Kg)	74

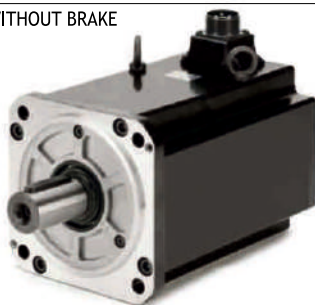
TORQUE CURVE

R2CA2215KVXH [15.0kW] + RS3C15



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

WITHOUT BRAKE



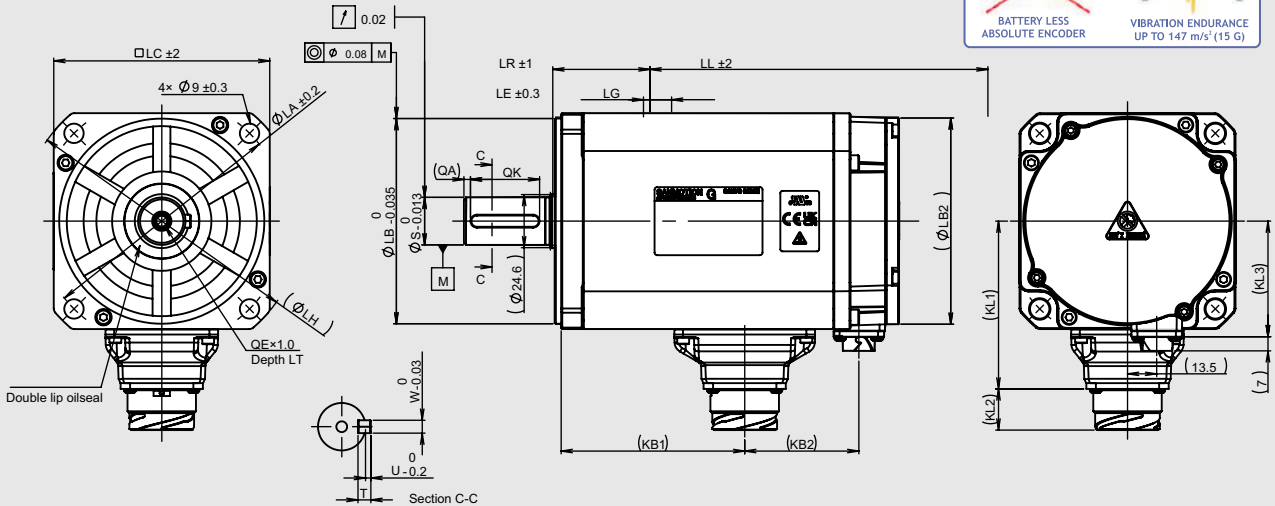
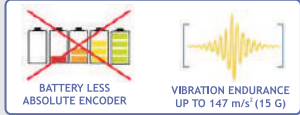
(Version with brake available on request)

Indicated performances refer to motor controlled by related RS3 standard amplifiers.

Suggested amplifiers: RS3C15A0AL2

GAM1AA150FOXRB3

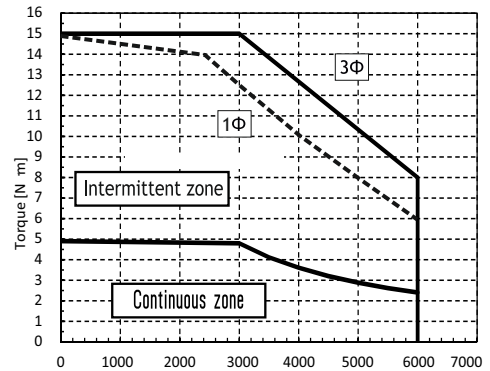
Dimensions (Unit:mm)



without brake		with brake		KL1	KL2	KL3	LG	LA	LB	LE	LH	LC	LZ1	LB2	LR	S	QA	QK	W	T	U	KB1	QE	LT
LL	KB2	LL	KB2																					
161	53	205.5	90	78	19	54	10	115	0 95.5-0.035	3	130	100	9	95.5	45	0 22-0.013	3	32	0 6-0.03	6	2.5	85	M6	20

MODEL	GAM1AA150FOXRB3	
NOMINAL POWER	(W)	1500
NOMINAL SPEED	(rpm)	3000
MAXIMUM SPEED	(rpm)	6000
NOMINAL TORQUE	(Nm)	4.8
STALL TORQUE	(Nm)	4.9
MAXIMUM TORQUE	(Nm)	15.0
INERTIA	(Kg·m ²)	1.98x10 ⁴
ENCODER	(imp./rev)	SINGLE TURN: 131072 imp/rev (17 bit) MULTI TURN: 65536 turns (16 bit)
PROTECTION DEGREE		IP67
WEIGHT	(Kg)	5.0

TORQUE CURVE GAM1AA150FOXRB3 + RS3A05



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

GAM1AA150FOXRB3

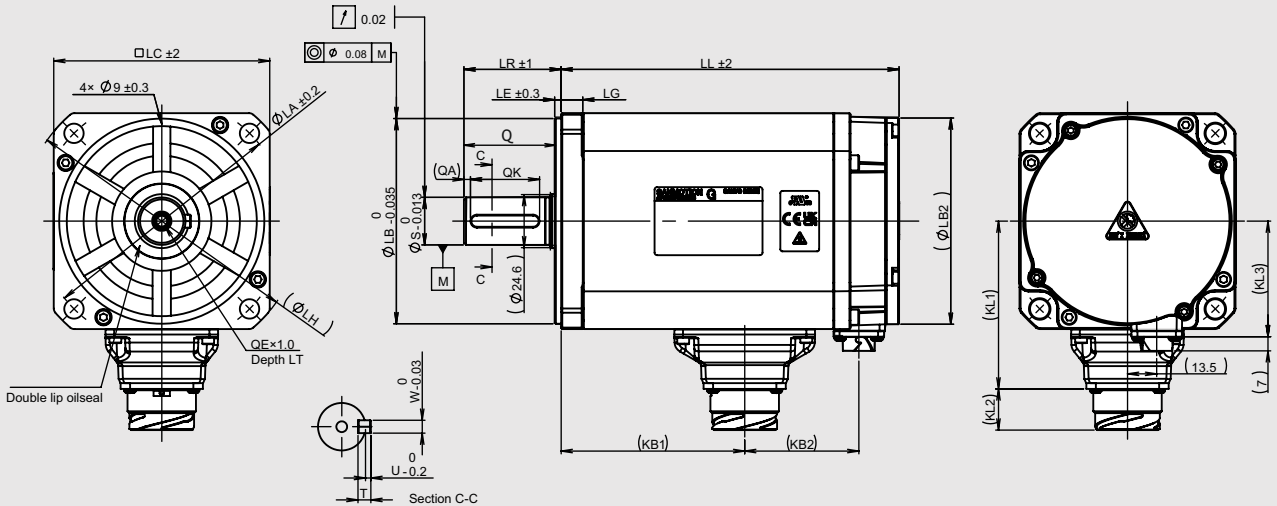
Indicated performances refer to motor controlled by related new RS3 standard and EtherCat amplifiers.

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

Suggested amplifiers: RS3A05A2HA4W00, RS3A05A0AA2, RS3A05A2HAE

GAM2AA1050BOXNB3 [GAM2AA10150B0CNB3]

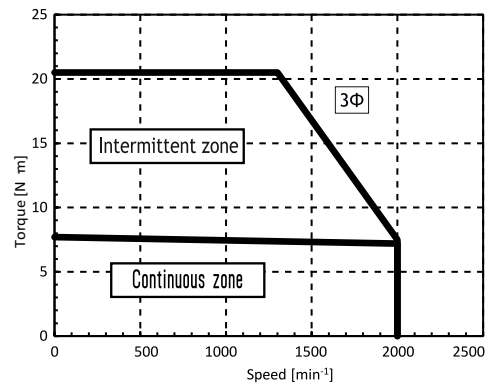
Dimensions (Unit:mm)



without brake	with brake	KL1	KL2	KL3	LG	LA	LB	LE	LH	LC	LZ1	LB2	LR	S	Q	QA	QK	W	T	U	KB1	QE	LT
LL	KB2	78	19	54	10	115	0 95.5-0.035	3	130	100	9	95.5	45	0 22-0.013	40	3	32	0 6-0.03	6	2.5	97.5	M6	20

MODEL	GAM2AA10150BOXNB3 [GAM2AA10150B0CNB3]	
NOMINAL POWER	(W)	1500
NOMINAL SPEED	(rpm)	2000
MAXIMUM SPEED	(rpm)	2000
NOMINAL TORQUE	(Nm)	7.2
STALL TORQUE	(Nm)	7.7
MAXIMUM TORQUE	(Nm)	20.5
INERTIA	(Kg·m ²)	6.10×10 ⁻⁴ [6.45×10 ⁻⁴]
ENCODER	(imp./rev)	SINGLE TURN: 131072 imp/rev (17 bit) MULTI TURN: 65536 turns (16 bit)
PROTECTION DEGREE		IP67
WEIGHT	[version with brake] (Kg)	5.9 [7.5]

TORQUE CURVE GAM2AA10150BOX[C] + RS3A03



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

WITHOUT BRAKE
GAM2AA10150BOXNB3

Indicated performances refer to motor controlled by related new RS3 standard and EtherCat amplifiers.

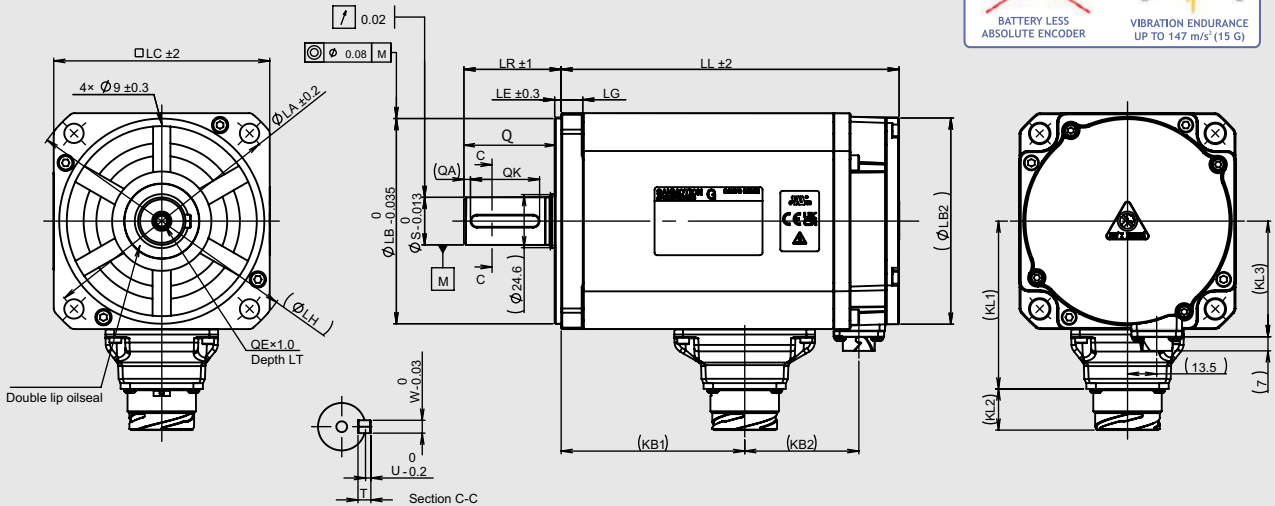
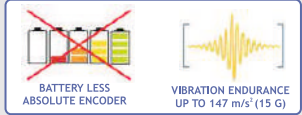
1Φ torque curve with single phase power supply
3Φ = torque curve with three-phase power supply

WITH BRAKE
GAM2AA10150B0CNB3

Suggested amplifiers: RS3A03A2HA4W00, RS3A03A0AA2, RS3A03A2HAE

GAM2AA150BOXRB3 [GAM2AA150B0CRB3]

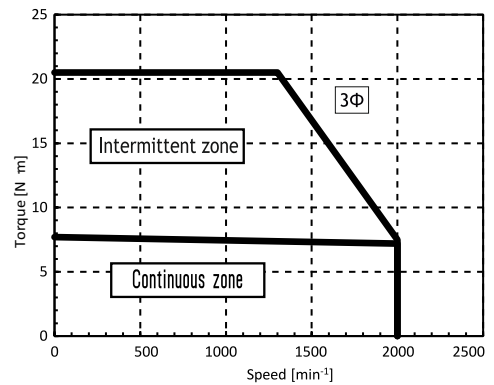
Dimensions (Unit:mm)



without brake	with brake	KL1	KL2	KL3	LG	LA	LB	LE	LH	LC	LZ1	LB2	LR	S	Q	QA	QK	W	T	U	KB1	QE	LT					
LL	KB2																											
161	45	205.5	90	78	19	54	10	115	0	95.5-0.035	3	130	100	9	95.5	45	0	22-0.013	40	3	32	0	6-0.03	6	2.5	97.5	M6	20

MODEL	GAM2AA150BOXRB3 [GAM2AA150B0CRB3]	
NOMINAL POWER	(W)	1500
NOMINAL SPEED	(rpm)	2000
MAXIMUM SPEED	(rpm)	2000
NOMINAL TORQUE	(Nm)	7.2
STALL TORQUE	(Nm)	7.7
MAXIMUM TORQUE	(Nm)	20.5
INERTIA	(Kg·m ²)	6.10×10 ⁻⁴ [6.45×10 ⁻⁴]
ENCODER	(imp./rev)	SINGLE TURN: 131072 imp/rev (17 bit) MULTI TURN: 65536 turns (16 bit)
PROTECTION DEGREE		IP67
WEIGHT	[version with brake] (Kg)	5.9 [7.5]

TORQUE CURVE GAM2AA10150BOX[C] + RS3A03



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

WITHOUT BRAKE
GAM2AA150BOXRB3

Indicated performances refer to motor controlled by related new RS3 standard and EtherCat amplifiers.

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

WITH BRAKE
GAM2AA150B0CRB3

Suggested amplifiers: RS3A03A2HA4W00, RS3A03A0AA2, RS3A03A2HAE



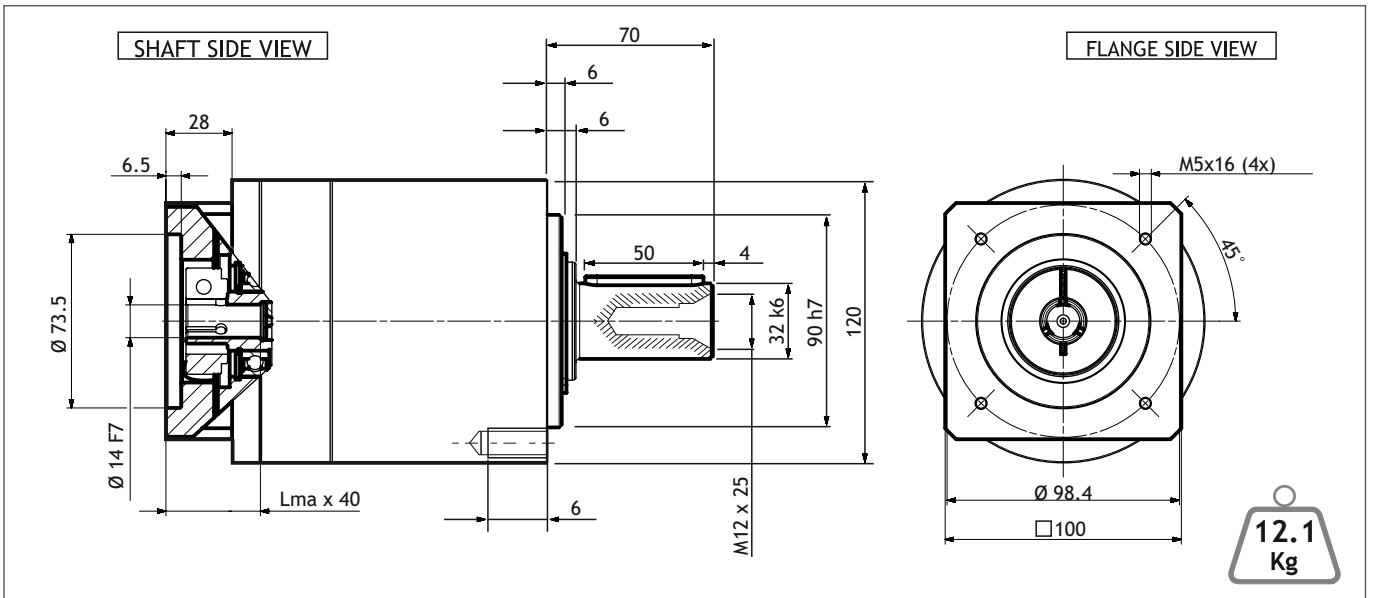
PLANETARY GEARBOXES



SG-P11-120-025-15-SM-286X-00000



Dimensions (Units:mm)



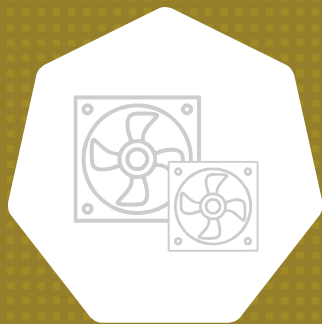
MODEL	Rated output torque [Nm]	Maximum acceleration output torque [Nm]	Emergency step output torque [Nm]	Backlash [arcmin]	Nominal input speed [min ⁻¹]	Maximum momentary input speed [min ⁻¹]	Torsional stiffness [Nm/arcmin]	Maximum radial force applying on output shaft [N]	Maximum axial force applying on output shaft [N]	Gear efficiency [%]	Gear moment of inertia [Kgcm ²]
SG-P11-120-025-15-SM-286X-00000	110	190	360	15°	3000	4500	22.5	3500	3000	94	0.71

Suggested motors

RM 3RxM

RM 3TxM-0xx0

MOUNTING OPERATION MODE: ■ Tightening torque M=11 Nm ■ Locking bolt M6 ■ R.T.A. Quality Control



COOLING FANS



120x120x38 mm

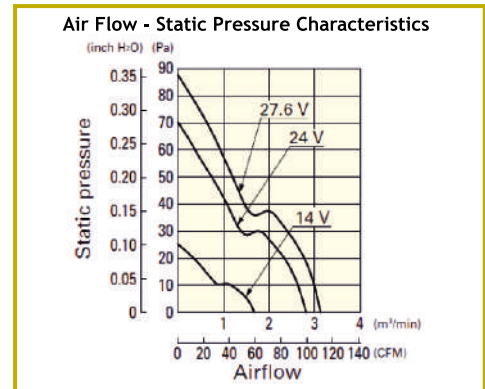
24 V



General Specifications

- Material:
 - Frame: Plastics (Flammability: UL 94V-0)
 - Impeller: Plastics (Flammability: UL 94V-1)
- Expected Life: 40,000 h (L10:Survival rate: 90% at 60 °C, rated voltage, and continuously run in a free air state)
- Lead Wire: ⊕ red ⊖ black or blue
- Storage Temperature: -30 °C to +70 °C (Non-condensing)
- Ball bearings
- International Standards: UL/CSA, TÜV, RoHS

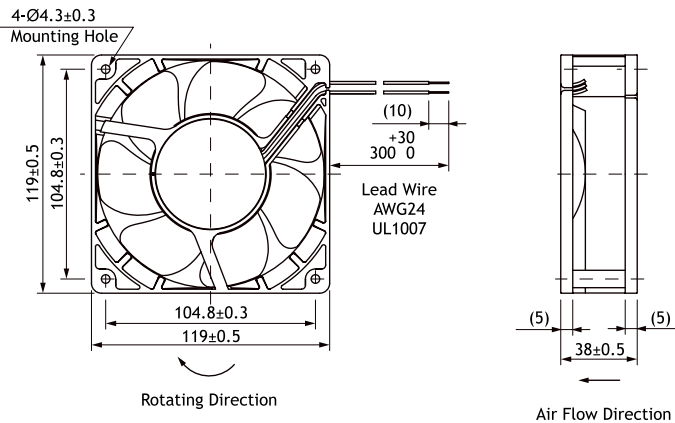
Air Flow - Static Pressure Characteristics



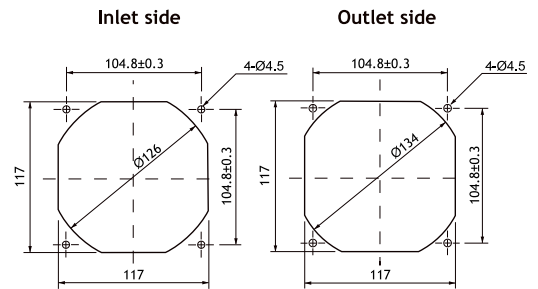
Specifications

Model No.	Rated Voltage [V]	Operating Voltage Range [V]	Rated Current [A]	Rated Input [W]	Rated Speed [min ⁻¹]	Max. Air Flow [m ³ /min] [CFM]	Max. Static Pressure [Pa] [inchHO]	SPL [dB(A)]	Operating Temperature [°C]	Expected Life [h]
9G1224H102	24	14.0 to 27.6	0.22	5.28	2,600	2.8 99	70.4 0.283	39	-20 to +70	40,000/60°

Dimensions (Unit:mm)



Reference dimension of mounting holes and vent opening (Unit: mm)



120 mm sq.



- Model always available on stock at R.T.A.
- Also available for online purchasing at www.rta-store.com

ITALY

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GERMANY

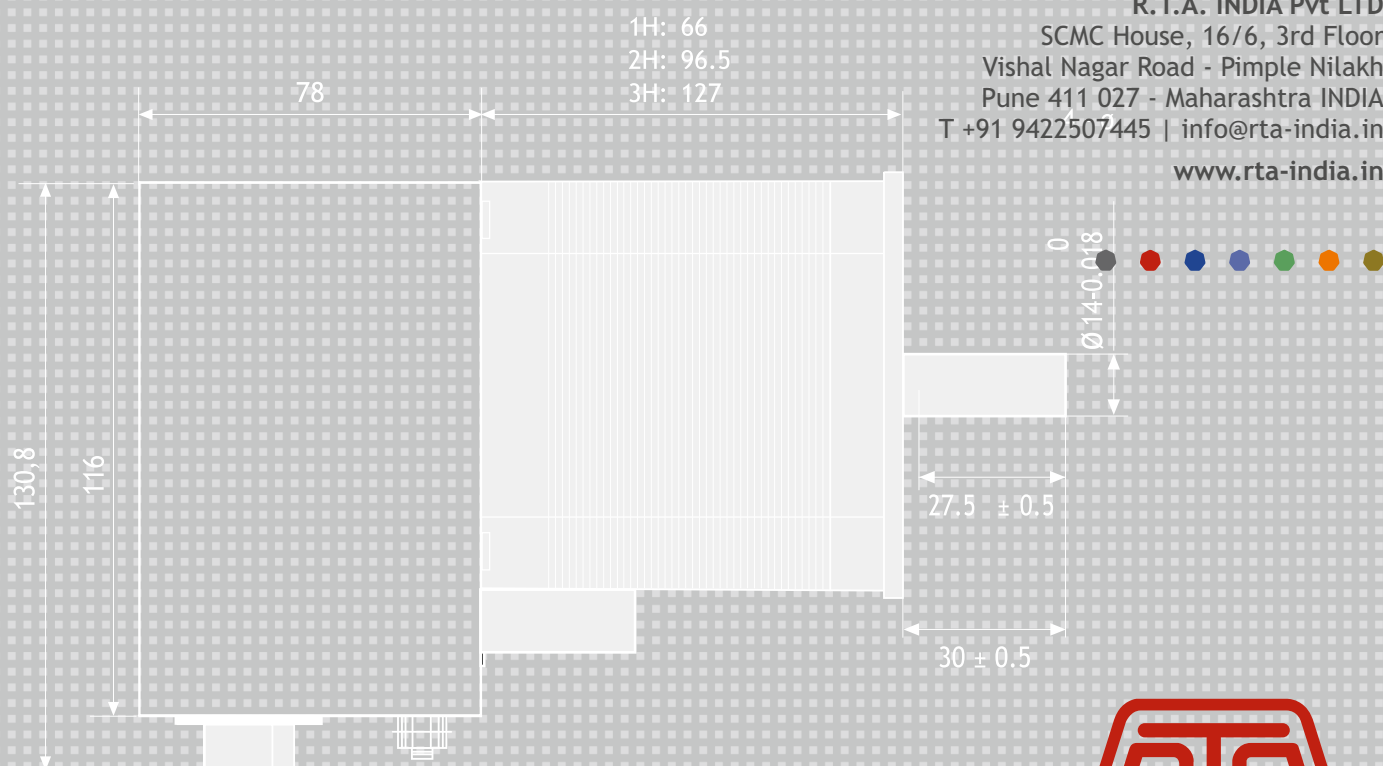
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www.rta-india.in



Look Ahead!