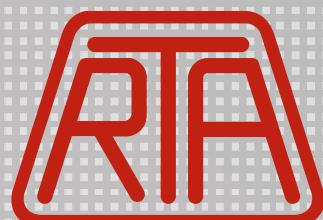


2022

# PRODUCT NEWS



*Look Ahead!*

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## MOTION CONTROLLERS



# A-Series PLC SYSTEM

CPU - Modules - HMI

## INTRODUCTION

A-series integrated PLC system, including CPU, modules and touch screens, is a versatile and programmable logic controller, expandable with external modules.

It is typically suitable for simple stepper position applications, thanks to easy and flexible parameters setting.

It perfectly integrates with R.T.A. selected products and technologies, forming an easy-to-use control system.

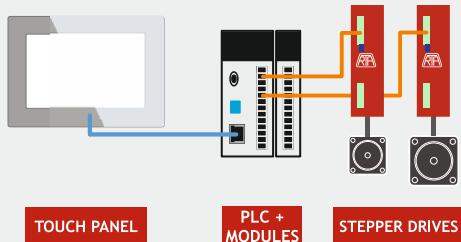
## TOUCH SCREENS



- Easy integration with the PLC System
- Compact size
- Quick installation

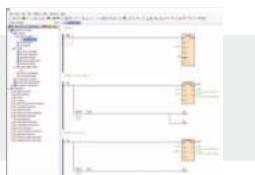
## R.T.A. PLC SYSTEM

— STEP-DIR   — MODBUS TCP



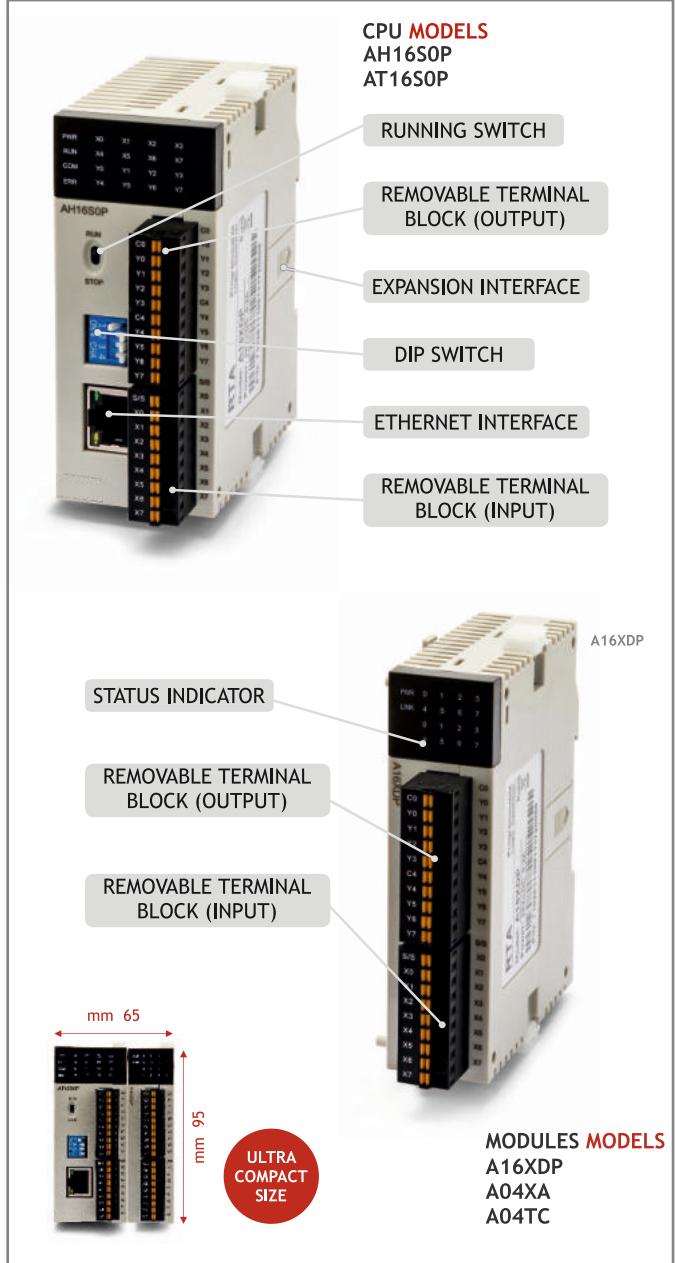
## LADDER LOGIC

Programming System



## MAIN FEATURES

CPU MAIN FEATURES		
	AH16SOP	AT16SOP
PULSE/TRAIN AXES	4	2
MOVEMENT	Single and multi-axes	Single axes movement
ETHERNET	yes	yes
EXPANDABLE	15 modules	15 modules
INPUT/OUTPUT	8 Digital Input / 8 Digital Output	



## MODULES MAIN FEATURES

	A16XDP	A04XA	A04TC
DIGITAL INPUT	8	0	0
DIGITAL OUTPUT	8	0	0
ANALOG INPUT		2	0
ANALOG OUTPUT		2	0
THERMOCOUPLE			4

## TECHNICAL SPECIFICATIONS

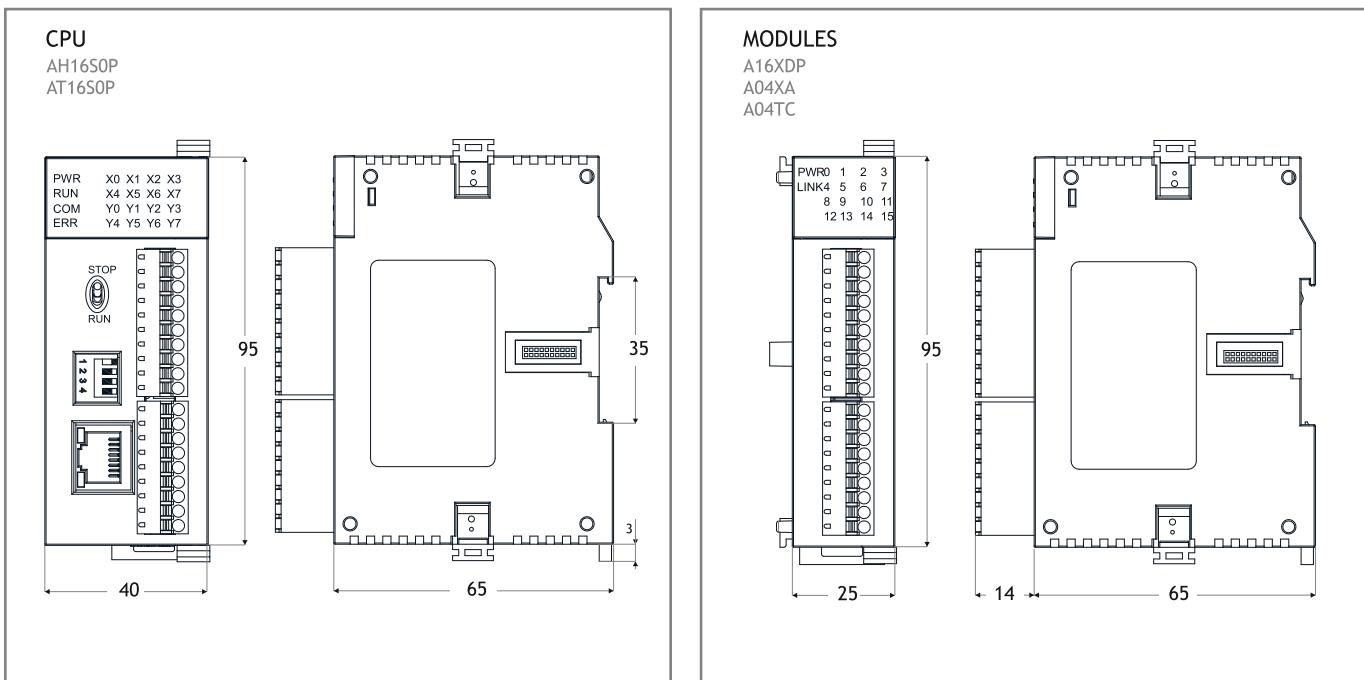
PLC SPECIFICATIONS	AH16SOP	T16SOP
POWER SUPPLY	24 VDC ±15%	
POWER PROTECTION	DC input power polarity reverse, over voltage protection	
STEP/DIR OUTPUT	4 (200KHz, 24V PNP)	2 (200KHz, 24V PNP)
AB ENCODER INPUT	4 (200KHz, 24V PNP)	2 (200KHz, 24V PNP)

DIGITAL INPUT SPECIFICATIONS		DIGITAL OUTPUT SPECIFICATIONS	
INPUT SIGNAL	24 VDC PNP	MAX LOAD	0,5A/1 point, 2A/4 points COM, 24VDC PNP
INPUT IMPEDANCE	4.3KΩ	REACTION TIME	Off->On 10 ms, On->Off 5 ms
MAX INPUT CURRENT	10 mA	INSULATION TYPE	Optoelectronic isolation for each channel
INSULATION TYPE	Optoelectronic isolation for each channel		

ANALOG INPUT / OUTPUT SPECIFICATIONS		VOLTAGE INPUT/OUTPUT			CURRENT INPUT/OUTPUT	
INPUT/OUTPUT RANGE	0V - +10V	0V - +5V	1V - +5V	1V - +5V	0 - 20 mA	4 - 20 mA
RESOLUTION	2.5 mV	1.25 mV	1.25 mV	1.25 mV		5µA
DIGITAL INPUT/OUTPUT RANGE	12 bits, Code range: 0~ 32000					

THERMOCUPLE MODULE SPECIFICATIONS	
INPUT RANGE	IS, K, E, B, N, R, Wre/25, Wre5/26, [0, 20]mV, [0, 50]mV, [0, 100]mV
RESOLUTION	0.1 °C
MAX INPUT RANGE	±30mA
RESPONSE TIME	560ms/4 Channel
DIGITAL OUTPUT RANGE	12 bits, Code range: 0 ~ 32000

## MECHANICAL DIMENSIONS (mm)



# HMI

## Touch Screen C7H - C10S

### MAIN FEATURES

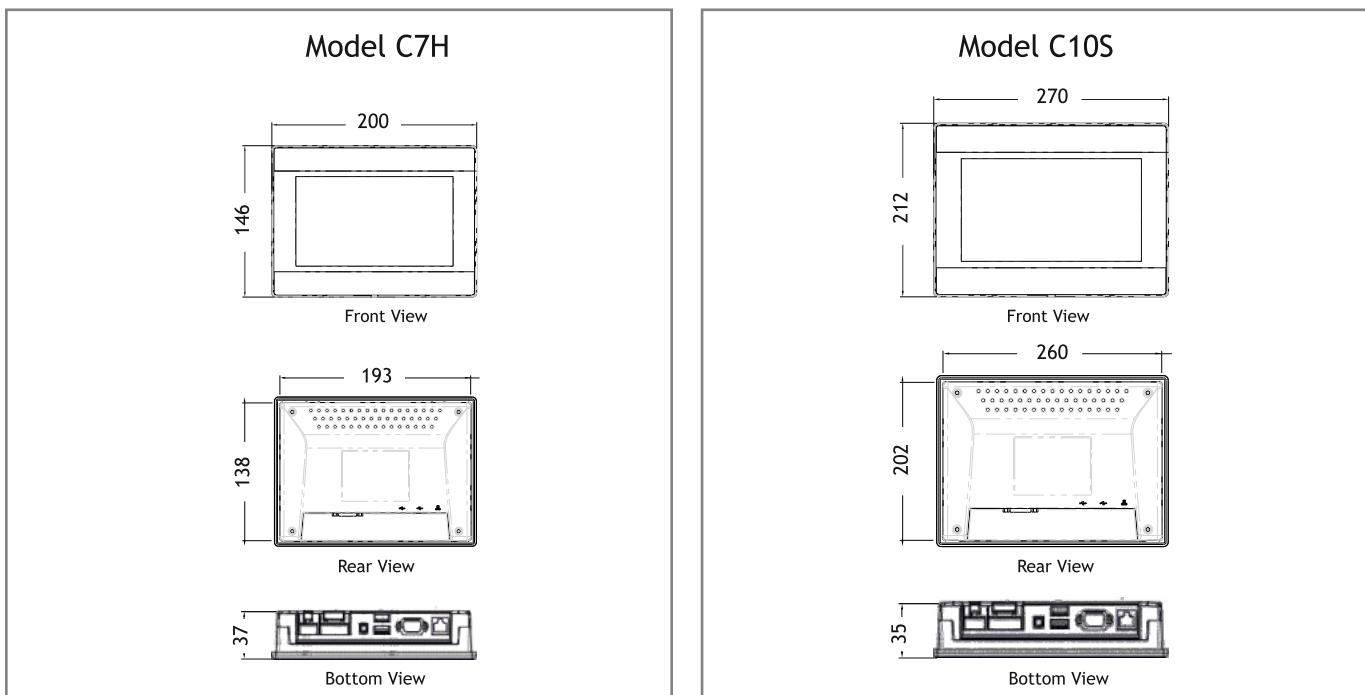
- 2 serial ports, 2 USB ports, SD card
- Compact size for easy installation
- Easy integration with A-series PLC
- R.T.A. support team



### 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

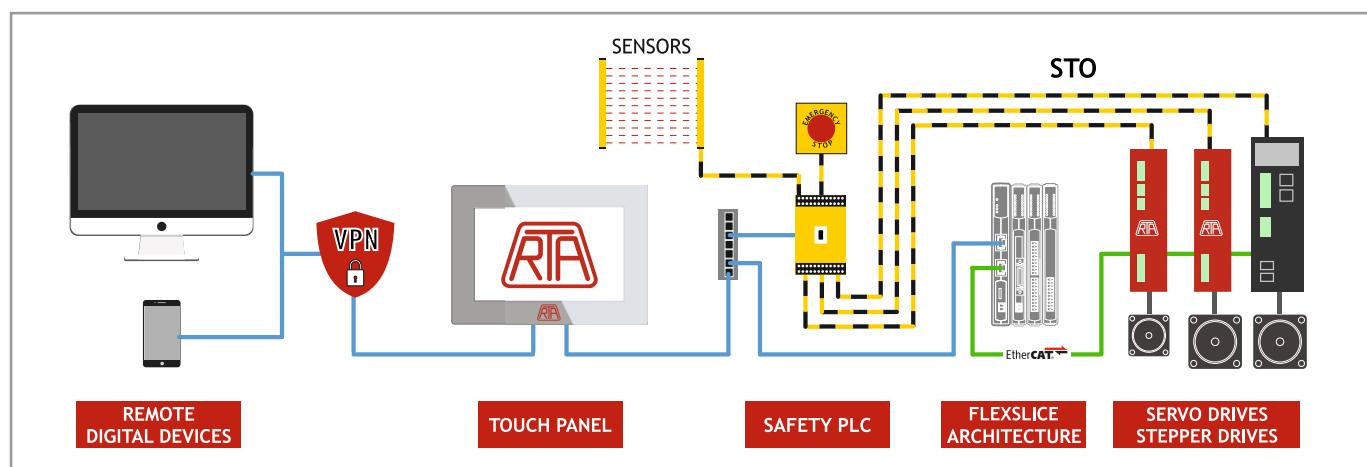
The samosPRO Compact module is suitable for monitoring safety sensors, emergency STOP buttons, safety door switches and door locks, safety light curtains and laser scanners.

## 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 <sub>CL</sub> (IEC 62061)	3
HFT	1
T <sub>M</sub>	20 a

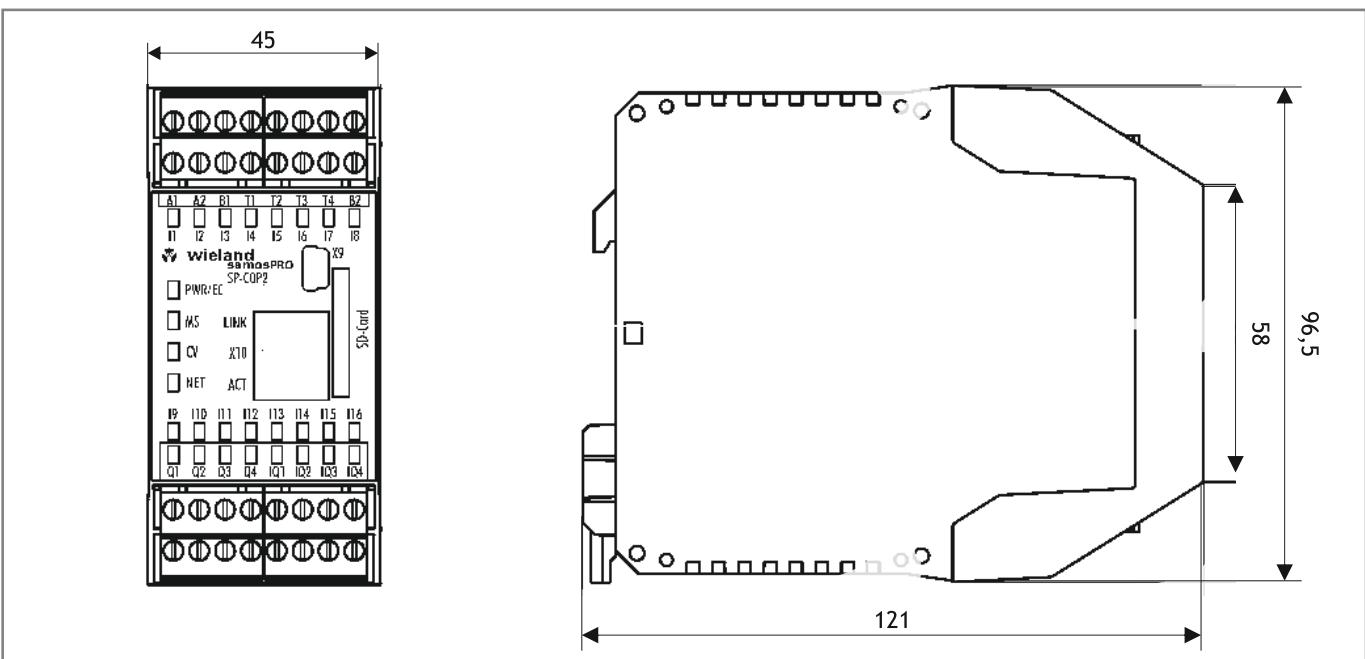
## TECHNICAL SPECIFICATIONS

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 funtion
- ✓ Bimanual function
- ✓ Safety function
- ✓ Access control function
- ✓ ON/OFF Delay timer

## MECHANICAL DIMENSIONS (mm)



# Ethernet switch IES-150B

## INTRODUCTION

IES-150B is an unmanaged Ethernet switch with 5x10/100Base-T(X) ports. With its very compact size, it is easy to install and the rigid IP30 housing make it suitable for diverse environments.

## MAIN FEATURES

- 5 ports 10/100base-T(X)
- Auto-negotiation and auto-MDI/MDI-X
- Store-and-Forward transmission
- Flow control
- Operating temperature from -40 °C to 75 °C
- Compact size for easy installation
- DIN-rail and wall mounting

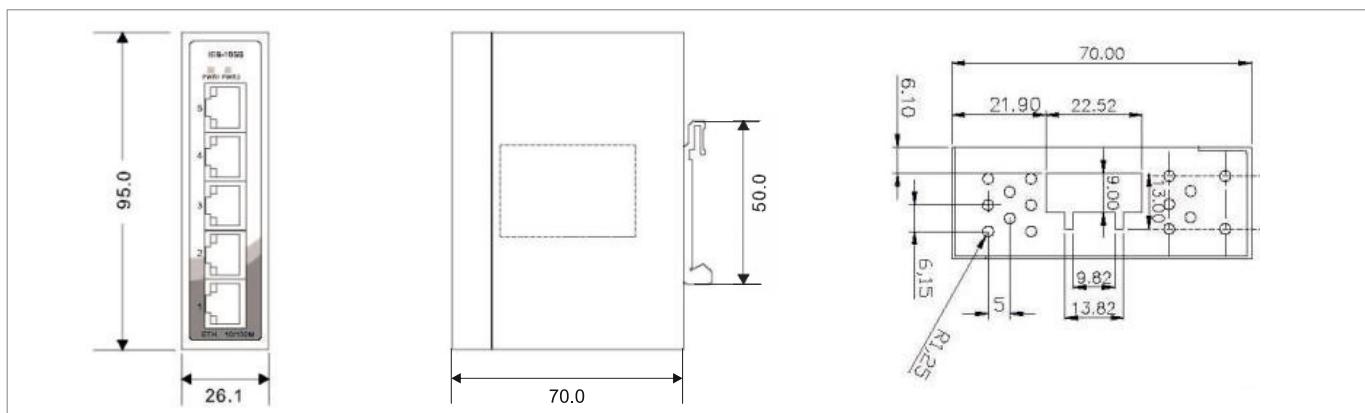


MODEL IES-150B

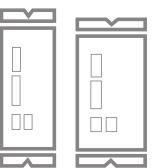
## TECHNICAL SPECIFICATIONS

PHISICAL PORTS	
10/100BASE-T(X) PORTS IN RJ45 AUTO MDI/MDIX	5
POWER	
INPUT POWER	Dual 12-48VDC and 24VAC on 4-pin terminal block
POWER CONSUMPTION	<3Watts, 12-48VDC: 0.10A-0.04A, 24VAC: 0.10A
OVERLOAD CURRENT PROTECTION	Present
REVERSE POLARITY PROTECTION	Present

## MECHANICAL DIMENSIONS (mm)







## STEPPING MOTOR DRIVES



# CSD MT 94 Series Drives



## INTRODUCTION

- New series of stepping motor drives with Modbus interface, now available with a 3<sup>rd</sup> generation firmware release (2021).
- Drives optimized for coupling with SANYO DENKI stepping motors, fitted with encoder, but also able to manage third party motors.
- Compact system, developed to offer a wide variety of integrated functions and optimized for the most demanding motion control applications.

## MAIN FEATURES

- Modes of operation: PP, PV, Homing.
- Wide range of motor phase current setting and motor current overboost (120%).
- 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.
- UL recognized.

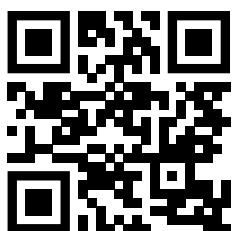


Please refer to [download.rta.it](http://download.rta.it)  
for technical specifications

Series	Model	V <sub>DC</sub> range (Volt)	I nom. (Amp)	Digital In/Out	Dimensions (mm)
CSD MT	94	24 to 48	4.0	5/5	130x106x32

## TECHNICAL FEATURES

- Range of operating voltage 24-48 VDC.
- 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.
- Maximum compactness.
- Optoisolated auxiliary and programmable inputs and outputs.
- UL recognized.
- Warranty: 24 months.



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



## POWER AND LOGIC CONNECTIONS

R.T.A. MOTORS  
RH/EM SERIES



31
32
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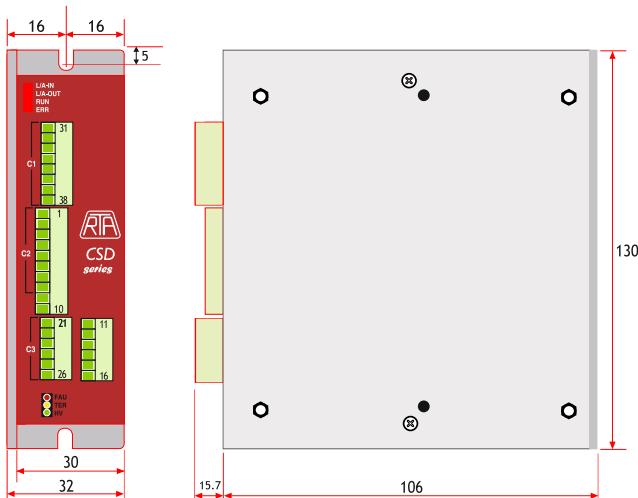
IN  
ENCODER



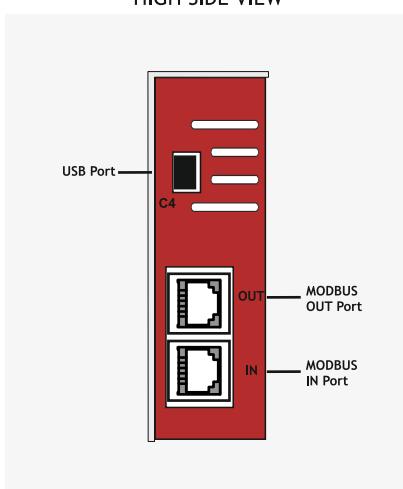
1	← LV <sub>DC</sub> +
2	← LV <sub>DC</sub> -
3	
4	B
5	B -
6	A -
7	A
8	
9	← HV <sub>DC</sub> -
10	← HV <sub>DC</sub> +

21	IN	11	OUT
22		12	
23		13	
24		14	
25		15	
26		16	

## MECHANICAL DIMENSIONS



CSD MT  
HIGH SIDE VIEW



Dimensions in millimeters - Not in scale.

# CSD ET Series Drives

## EtherCAT®



### INTRODUCTION

- New series of stepping motor drives with EtherCAT interface, now available with a 3<sup>rd</sup> generation firmware release (2021).
- Drives optimized for coupling with SANYO DENKI stepping motors, fitted with encoder, but also able to manage third party motors.
- Compact system, developed to offer a wide variety of integrated functions and optimized for the most demanding motion control applications.

### MAIN EtherCAT® FEATURES

- Modes of operation: PP, PV, Homing, CSP and CSV.
- Wide range of motor phase current setting and motor current overboost.
- 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.
- UL recognized.



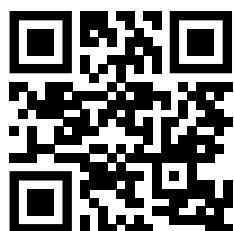
Please refer to [download.rta.it](http://download.rta.it)  
for technical specifications

Series	Model	V <sub>DC</sub> range (Volt)	I nom. (Amp)	Digital In/Out	Dimensions (mm)
CSD ET	04	24 to 48	4.0	5/5	130x106x32

## TECHNICAL FEATURES

- Range of operating voltage 24-48 VDC.
- 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.
- Optoisolated auxiliary and programmable inputs and outputs.
- UL recognized.
- Warranty: 24 months.

**EtherCAT®**



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

## POWER AND LOGIC CONNECTIONS

R.T.A. MOTORS  
RH/EM SERIES



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32
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34
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36
37
38

IN  
ENCODER



1	← LV <sub>DC</sub> +
2	← LV <sub>DC</sub> -
3	
4	B
5	B-
6	A-
7	A
8	
9	← HV <sub>DC</sub> -
10	← HV <sub>DC</sub> +

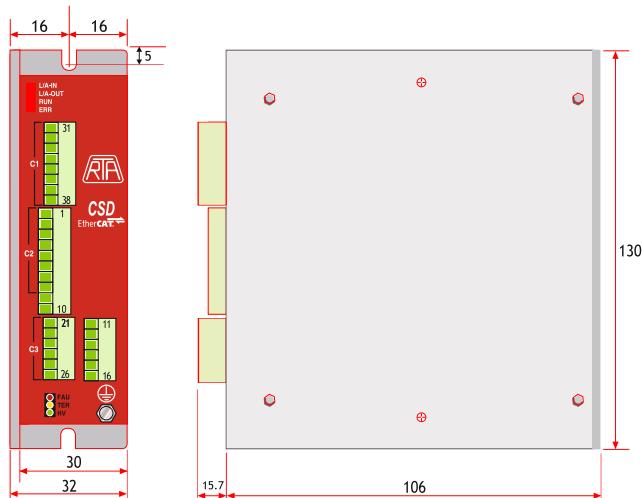
V<sub>DC</sub>

21		11	
22		12	
23		13	
24		14	
25		15	
26		16	

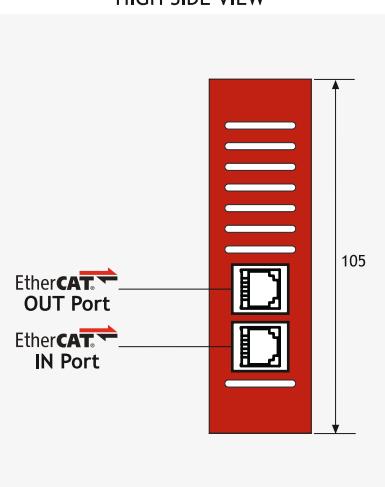
IN

OUT

## MECHANICAL DIMENSIONS



CSD ET  
HIGH SIDE VIEW



Dimensions in millimeters - Not in scale.

# CSD ET 94 Series Drives

## EtherCAT® →



### INTRODUCTION

- New series of stepping motor drives with EtherCAT interface, now available with a 3<sup>rd</sup> generation firmware release (2021).
- Drives optimized for coupling with SANYO DENKI stepping motors, fitted with encoder, but also able to manage third party motors.
- Compact system, developed to offer a wide variety of integrated functions and optimized for the most demanding motion control applications.

### MAIN EtherCAT® FEATURES

- Modes of operation: PP, PV, Homing, CSP and CSV.
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- Touch Probe function available.
- Limit switches management.
- Auto-sync function available featuring a closed loop positioning.
- 5 + 5 I/Os.
- UL recognized.



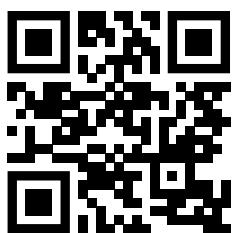
Please refer to [download.rta.it](http://download.rta.it)  
for technical specifications

Series	Model	V <sub>DC</sub> range (Volt)	I nom. (Amp)	Digital In/Out	Dimensions (mm)
CSD ET	94	24 to 48	4.0	5/5	130x106x32

## TECHNICAL FEATURES

- Range of operating voltage 24-48 VDC.
- 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.
- Optoisolated auxiliary and programmable inputs and outputs.
- UL recognized.
- Warranty: 24 months.

**EtherCAT®**

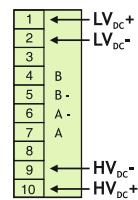
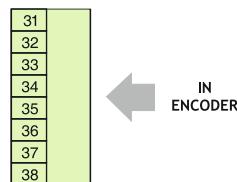


SCAN THE QR CODE TO  
WATCH A VIDEO ON THE  
AUTO-SYNC FUNCTION

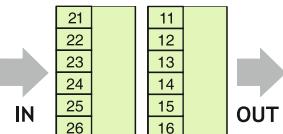


## POWER AND LOGIC CONNECTIONS

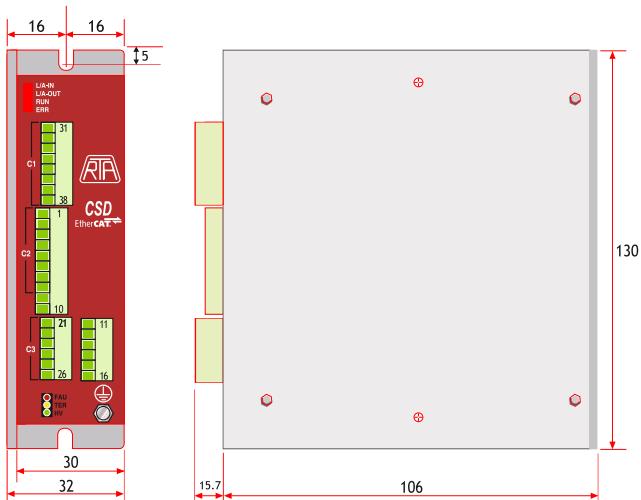
R.T.A. MOTORS  
RH/EM SERIES



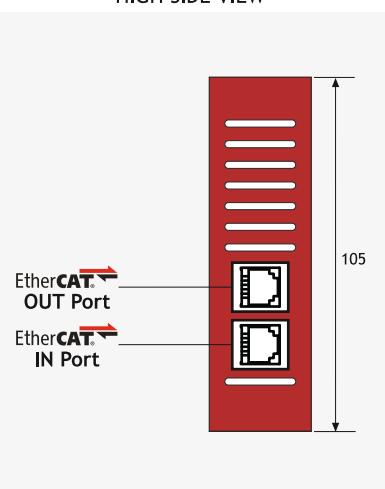
V<sub>DC</sub>



## MECHANICAL DIMENSIONS



CSD ET  
HIGH SIDE VIEW



Dimensions in millimeters - Not in scale.

# A-CSD Series Drives



**A-CSD 02/04**



**A-CSD 02.V/04.V**



**A-CSD 92/94**



## INTRODUCTION

- New series of bipolar microstep stepping motor drives, specifically developed for applications sensitive to acoustic noise and vibration.
- Significant evolution of the CSD series, preserving backward mechanical, electrical and applicative compatibility.
- Target: advanced applications requiring high precision, smoothness of movement and low acoustic noise.
- UL recognized.

## HIGHLIGHTS

- Full digital microstepping drive.
- Adaptive microstepping up to a 3.200 step/rev.
- Intelligent management of the current profile that achieves good results in terms of smoothness of movement, low noise and vibration control.
- A highly sophisticated control system, preserving anyhow the traditional ease of use of R.T.A. drives.

Series	Model	V <sub>DC</sub> range (Volt)	I <sub>NP</sub> min. (Peak value) (Amp)	I <sub>NP</sub> max. (Peak value) (Amp)	Dimensions (mm)
A-CSD	02 - 02.V*	24 to 48	0.7	2.4	92x85x22
A-CSD	04 - 04.V*	24 to 48	2.6	4.4	92x85x23
A-CSD	92	24 to 48	0.7	2.4	99x90x21
A-CSD	94	24 to 48	2.6	4.4	99x90x21

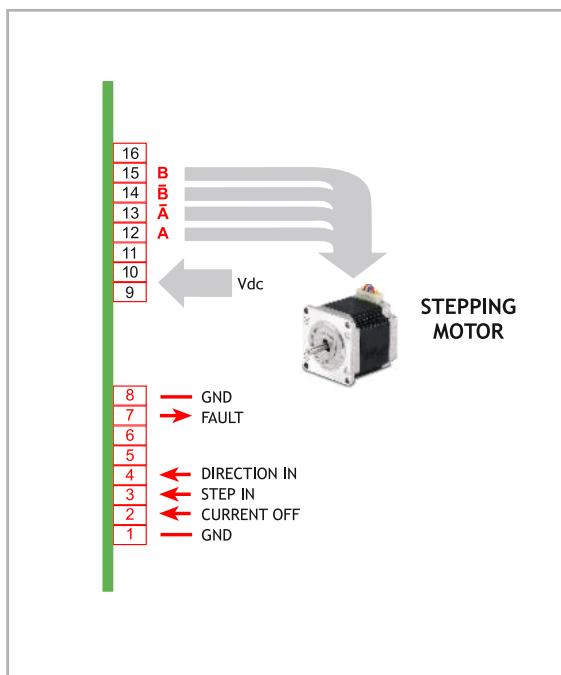
\* A-CSD 02.V and A-CSD 04.V versions are equipped with screw-type connectors.

## TECHNICAL FEATURES

- Range of operating voltage: 24-48 V<sub>dc</sub>.
- Range of current: 0.7-4.4 Amp. Setting up to eight possible values by means of dip-switches.
- Microstepping: 400, 800, 1.600 and 3.200 steps/revolution. Setting by means of dip-switches.
- Automatic current reduction at motor standstill.
- Management of the current profile setting by means of a dip-switch.
- Protections:
  - Protection against under-voltage and over-voltage.
  - Protection against a short-circuit at motor outputs.
  - Overtemperature protection with thermal sensor.
- Electronic damping facility for further acoustic noise and mechanic vibrations reduction.
- Available versions: boxed/open frame, crimp-type/screw-type connectors. Maximum compactness.
- UL recognized.
- Warranty: 24 months.



## POWER AND LOGIC CONNECTIONS

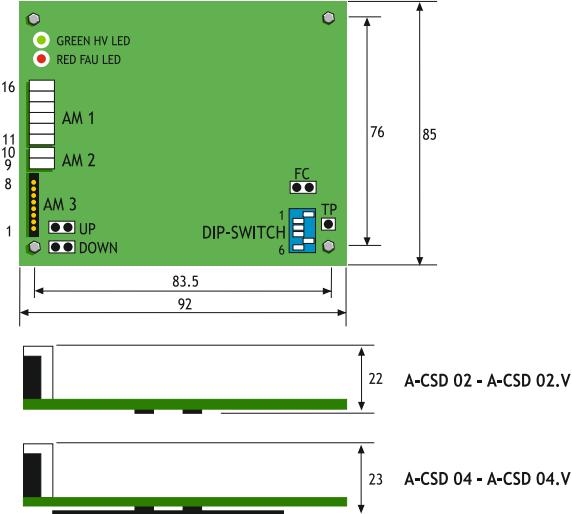


*A-CSD is included in KIT CNC 02, a complete 48 VDC motion solution, designed for 3-axes CNC Router machines.*

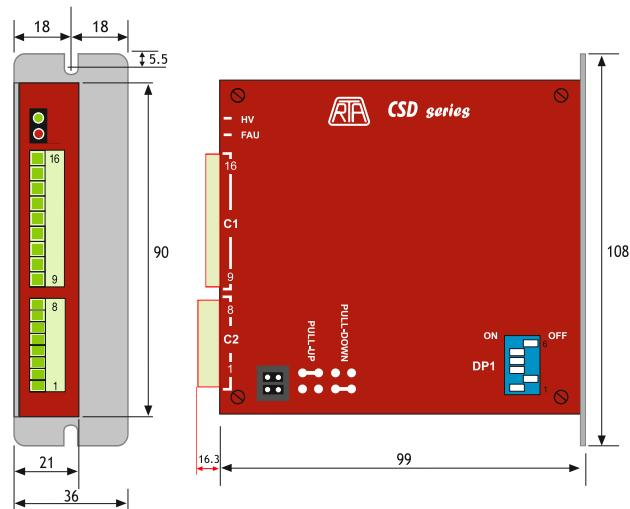


## MECHANICAL DIMENSIONS

**A-CSD 02 / A-CSD 04**

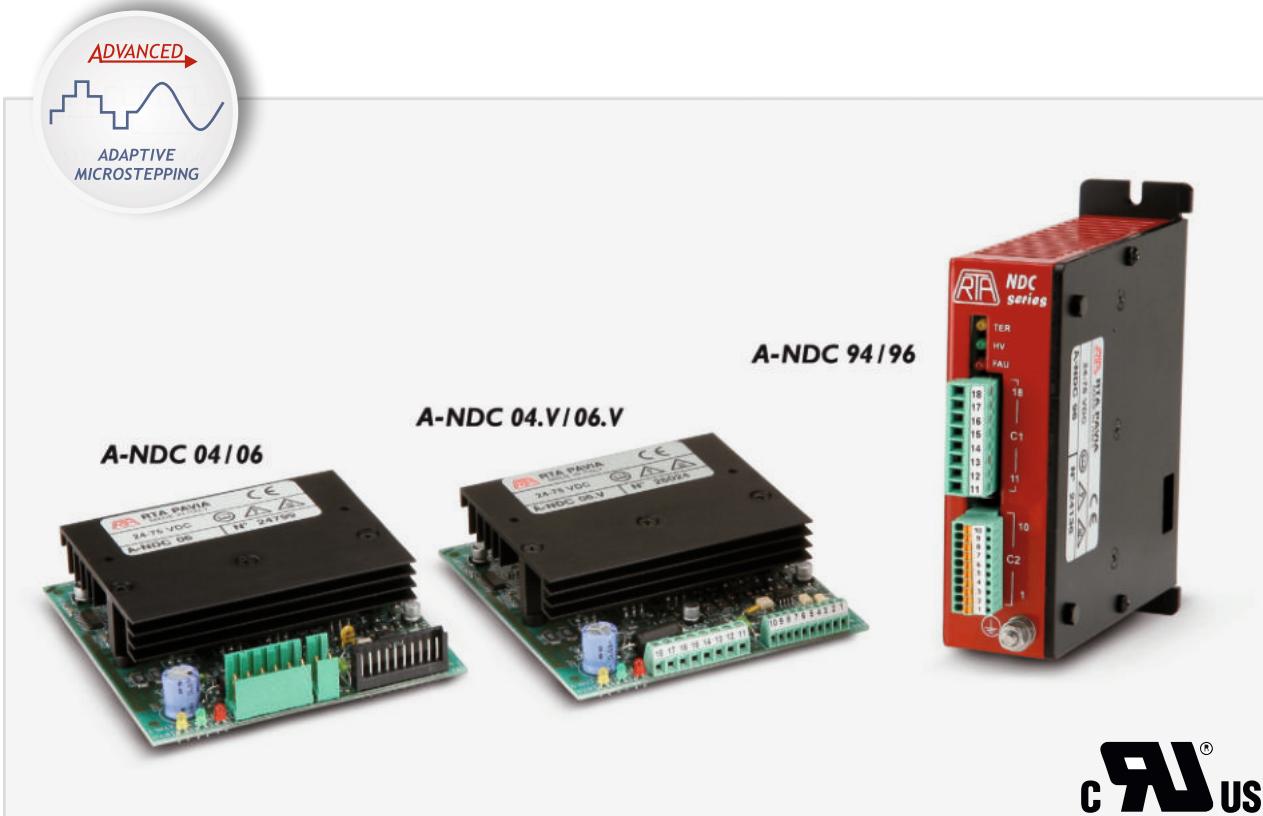


**A-CSD 92 / A-CSD 94**



Dimensions in millimeters - Not in scale.

# A-NDC Series Drives



## INTRODUCTION

- New series of bipolar microstep stepping motor drives, specifically developed for applications sensitive to acoustic noise and vibration.
- Significant evolution of the NDC series, preserving backward mechanical, electrical and applicative compatibility.
- Target: advanced applications requiring high precision, smoothness of movement and low acoustic noise.
- UL recognized.

## HIGHLIGHTS

- Full digital microstepping drive.
- Adaptive microstepping up to a 12.800 step/rev (1/64).
- Intelligent management of the current profile that achieves good results in terms of smoothness of movement, low noise and vibration control.
- A highly sophisticated control system, preserving anyhow the traditional ease of use of R.T.A. drives.

Series	Model	V <sub>DC</sub> range (Volt)	I <sub>NP</sub> min. (Peak value) (Amp)	I <sub>NP</sub> max. (Peak value) (Amp)	Dimensions (mm)
A-NDC	04 - 04.V*	24 to 85	0.6	2.0	101x94x25
A-NDC	06 - 06.V*	24 to 85	1.9	6.0	101x94x25
A-NDC	94	24 to 85	0.6	2.0	110x108x34
A-NDC	96	24 to 85	1.9	6.0	110x108x34

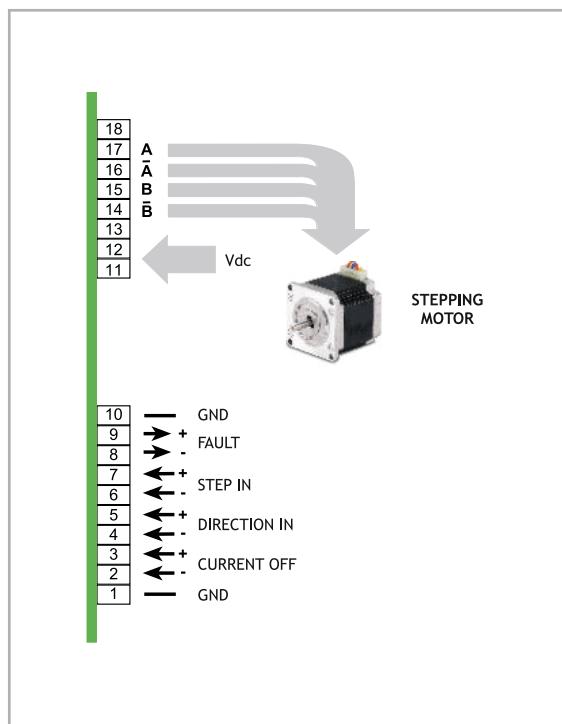
\* A-NDC 04.V and A-NDC 06.V versions are equipped with screw-type connectors.

## TECHNICAL FEATURES

- Range of operating voltage: 24-85 V<sub>dc</sub>.
- Range of current: 0.6-6 Amp. Setting up to eight possible values by means of dip-switches.
- Microstepping: 400, 800, 1.600, 3.200, 6.400 and 12.800 steps/revolution. Setting by means of dip-switches.
- Automatic current reduction at motor standstill.
- Management of the current profile setting by means of a dip-switch.
- Protections:
  - Protection against under-voltage and over-voltage.
  - Protection against a short-circuit at motor outputs.
  - Overtemperature protection with thermal sensor.
- Electronic damping facility for further acoustic noise and mechanic vibrations reduction.
- Available versions: boxed/open frame, crimp-type/screw-type connectors. Maximum compactness.
- Optoisolated inputs to ensure best EM noise immunity.
- UL recognized.
- Warranty: 24 months.

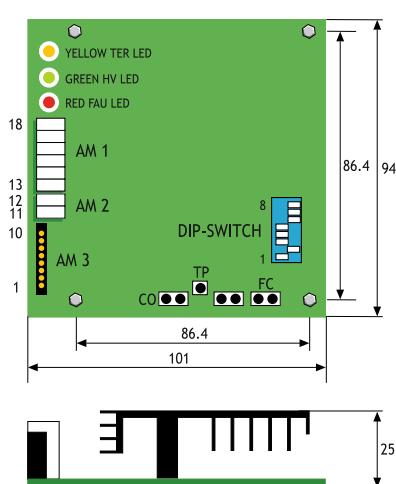


## POWER AND LOGIC CONNECTIONS

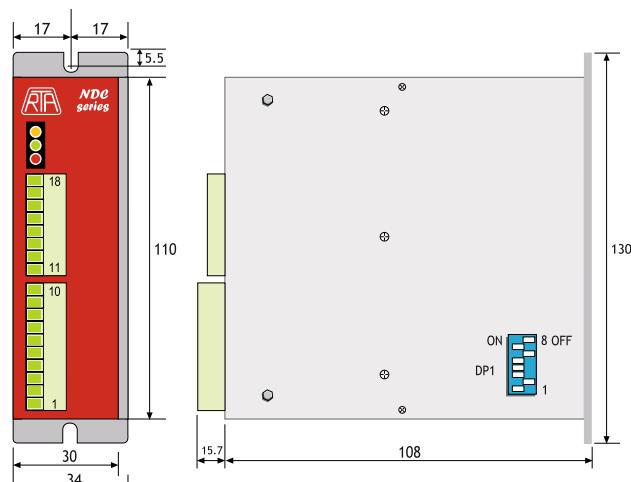


## MECHANICAL DIMENSIONS

A-NDC 04 / A-NDC 06



A-NDC 94 / A-NDC 96



Dimensions in millimeters - Not in scale.

# ADW Series Drives



ADW 06



ADW 06.V



ADW 96



## INTRODUCTION

- ADW is the new R.T.A. electronic drive designed for all applications where accurate SPEED CONTROL is needed.
- The motor velocity can be regulated in 3 ways:
  - Analog voltage input
  - External potentiometer
  - Internal speed settings
- The extended ADW power range (24-75 V<sub>DC</sub>, 0.65 - 6.0 A) and its versatility (four Modes of Operation) allow to access to a wide variety of application fields.
- UL recognized.

## HIGHLIGHTS

- Any speed-regulated applications with variable or pre-set velocity setting.
- Conveyors:
  - Single belt transport
  - Multi belt transport with high precision position/speed synchronization.
- Jog or adjustment movements.

### MODES OF OPERATION

**1** RUN MODE

**3** CW/CCW (JOG)

**2** START/STOP MODE

**4** LIMIT SWITCH MODE

Series	Model	V <sub>DC</sub> range (V)	I <sub>NP</sub> min. (Peak value) (A)	I <sub>NP</sub> max. (Peak value) (A)	Dimensions (mm)
ADW	04 - 04.V*	24 to 75	0.65	2.0	122x94x25
ADW	06 - 06.V*	24 to 75	1.9	6.0	122x94x25
ADW	94	24 to 75	0.65	2.0	129x110x34
ADW	96	24 to 75	1.9	6.0	129x110x34

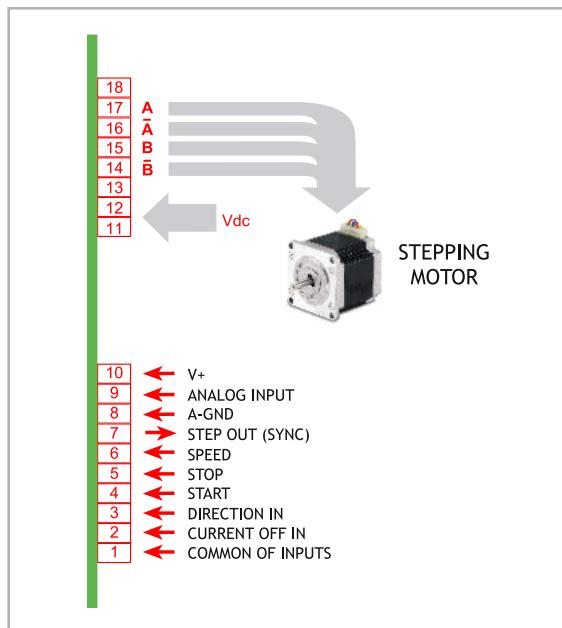
\* ADW 04.V and ADW 06.V versions are equipped with screw-type connectors.

## TECHNICAL FEATURES

- Range of operating voltage: 24-75 V<sub>DC</sub>.
- Range of current: 0.65-6 A. Easy setting of values by means of dip-switches.
- Wide speed range: 0.8 rpm to 2,000 rpm. Continuous operation zone up to approx 400 rpm, depending on motor choice.
- 64 internally selectable preset speed.
- 0-5Vdc or 0-10Vdc selectable analog command range.
- Low & High-speed motion profile.
- Adjustable internal acceleration/deceleration ramp.
- Voltage source for potentiometer available at connector.
- “Auto-stop” function.
- All opto-insulated digital inputs.
- Sync-out for multi-Axis synchronization.
- Over-voltage, short-circuit and thermal protection.
- UL recognized.
- Warranty: 24 months.



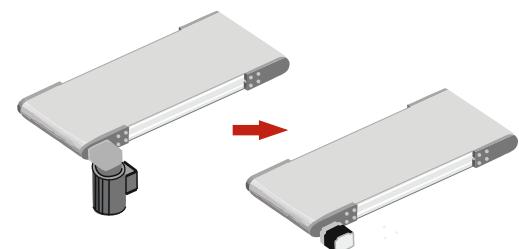
## POWER AND LOGIC CONNECTIONS



## BENEFITS VS. CONVENTIONAL INVERTERS + AC MOTORS + WORM GEARBOX SETUP.

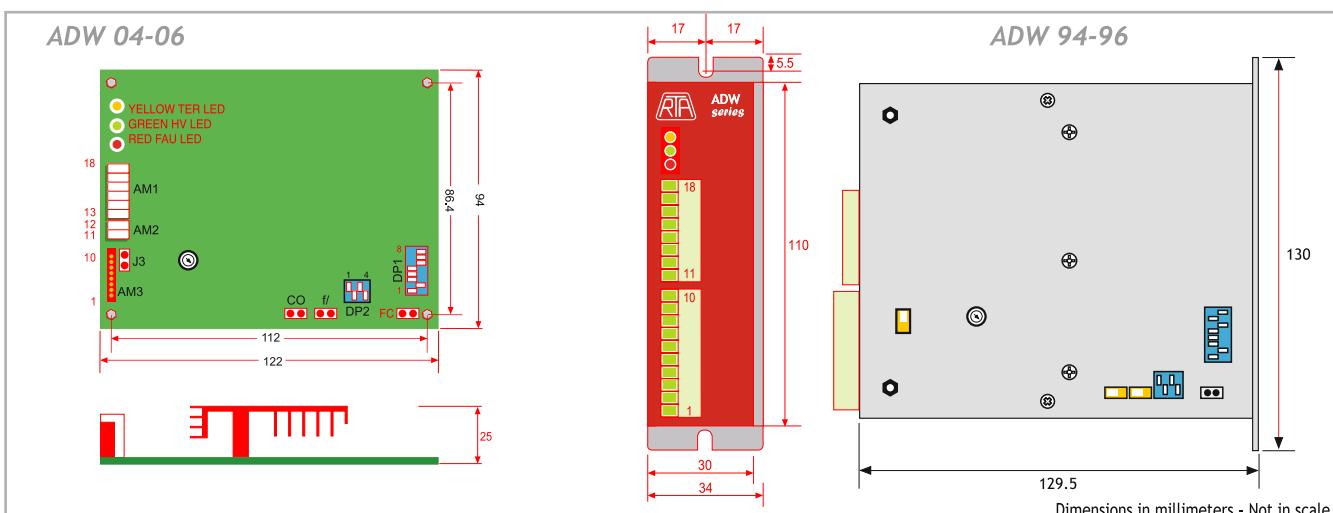
- Broader and more accurate speed range [0.8 rpm to 2,000 rpm]
- Zero-deviation motor speed control at any speed.  
[motor speed is not affected by variable factors like load, inertia or friction].
- The motors automatically act as brake at zero speed.
- Easy multi-axis synchronization in Position and Speed.
- No need of worm gearbox due to the high-torque at low rotation speed range [0-400 rpm].
- Smaller dimension: overall size < 1/3 compared with traditional AC Asynchronous sets.
- Lower weight.

### TYPICAL APPLICATION: DIMENSIONAL COMPARISON



Motor volume reduction up to 70%!

## MECHANICAL DIMENSIONS



# R-MOD ET Combo Unit



EtherCAT®

## INTRODUCTION

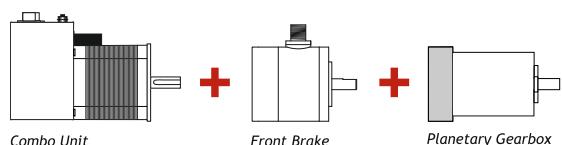
R-MOD ET is a series of stepping motors in two sizes with integrated ministep bipolar chopper EtherCAT drives, based on incremental or battery-less multi-turn absolute encoder.

## 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 / Outputs
- Different HOMING operation modes
- PROXIMITY hardware input
- AUTO-SYNC function
- Battery-less Multi-turn ABSOLUTE ENCODER versions
- UL/CSA Certified



*Front Brake and/or Gearbox versions available*



Please refer to [download.rta.it](http://download.rta.it) for technical specifications

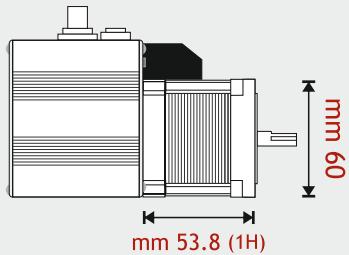


SCAN THE QR CODE TO  
WATCH A VIDEO ON THE  
AUTO-SYNC FUNCTION

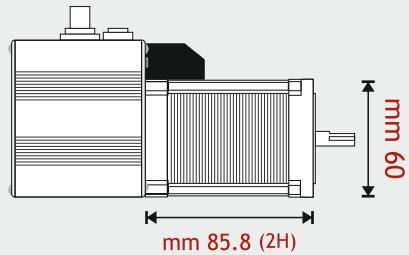


Models	Motor Length (mm)	Holding Torque (Ncm)	Encoder Type	Digital In/Out	Certifications
R-MOD ET A3H2MK <i>Full Closed Loop NEW!</i>	85.8	300	Battery-less Multi-turn Absolute	1/0	CE
R-MOD ET E3H2MA	85.8	300	Incremental	1/0	CE

## SIZES AND PERFORMANCES



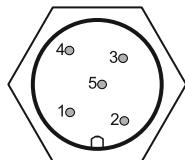
Holding Torque: 170 Ncm



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**



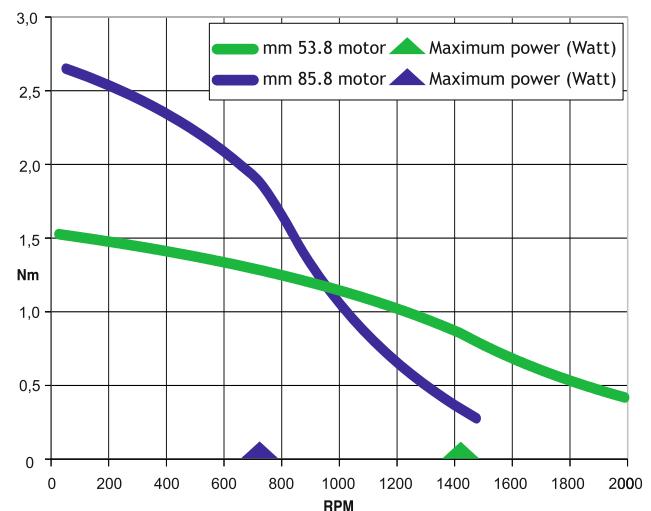
EtherCAT  
OUT  
(Female)

**CN3**

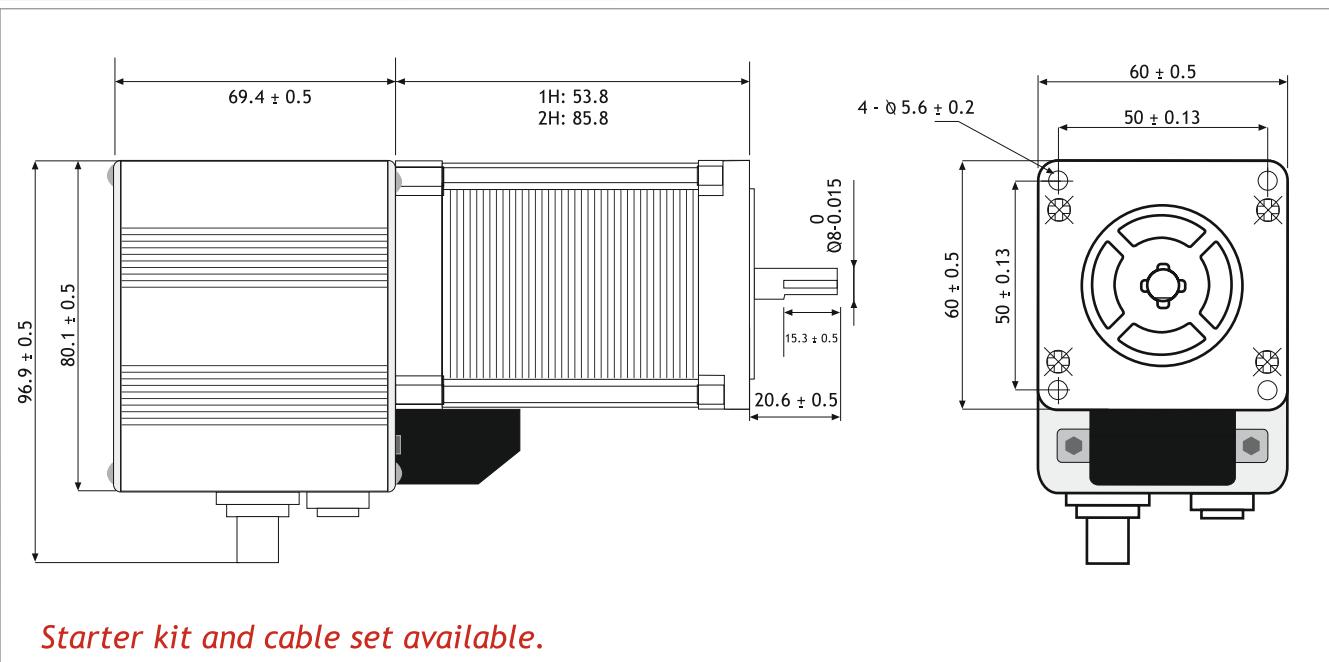


EtherCAT  
IN  
(Female)

## TORQUE/SPEED CURVE



## MECHANICAL DIMENSIONS (mm)



*Starter kit and cable set available.*

# HI-MOD ETS Combo Unit



EtherCAT®

## 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 incremental or battery-less multi-turn absolute encoder.

## HIGHLIGHTS

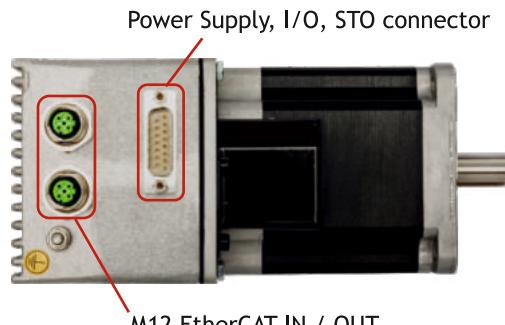
- New generation Full Closed Loop Absolute Encoder versions available
- Holding Torque up to 920 Ncm
- Communication by means of EtherCAT interface
- Different Operation Modes
- Available Inputs / Outputs
- Different HOMING operation modes
- PROXIMITY hardware input
- AUTO-SYNC function
- Battery-less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



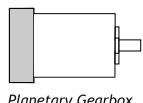
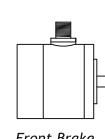
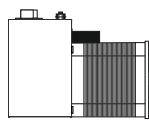
SIDE VIEW



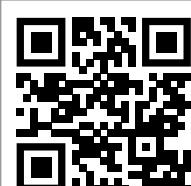
TOP VIEW



**Front Brake and/or Gearbox versions available**



Please refer to [download.rta.it](http://download.rta.it) for technical specifications

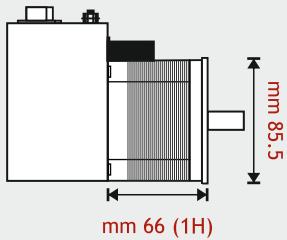


SCAN THE QR CODE TO  
WATCH A VIDEO ON THE  
AUTO-SYNC FUNCTION

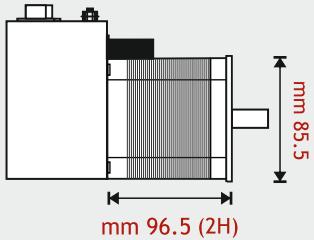


Models	Motor Length (mm)	Holding Torque (Ncm)	Encoder Type	Digital In/Out	STO In	Certifications
HI-MOD ETS A4F2HK <i>Full Closed Loop NEW!</i>	96.5	700	Battery-less Multi-turn Absolute	2/2	2	CE,UL,CSA + STO SIL3
HI-MOD ET A5F2HK <i>Full Closed Loop NEW!</i>	96.5	700	Battery-less Multi-turn Absolute	2/2	/	CE,UL,CSA
HI-MOD ETS E4F2HC	96.5	700	Incremental	2/2	2	CE,UL,CSA + STO SIL3
HI-MOD ET E3F2HA	96.5	700	Incremental	1/0	/	CE

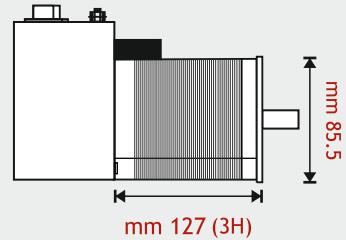
## SIZES AND PERFORMANCES



**Holding Torque: 360 Ncm**

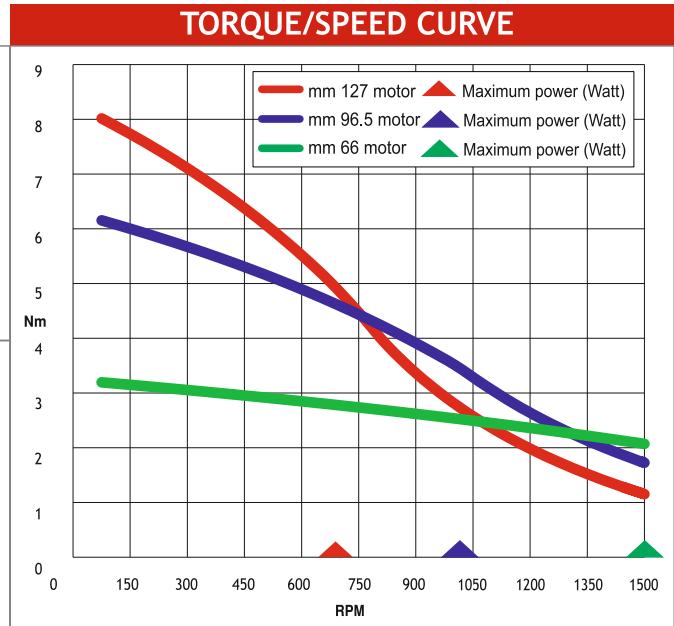
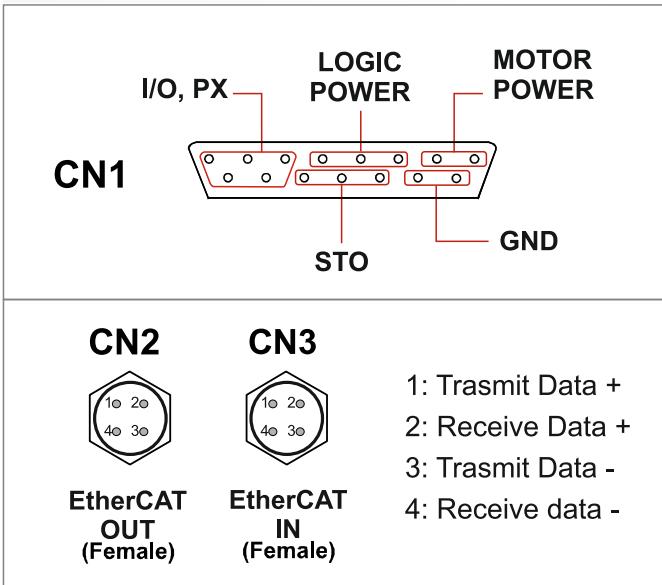


**Holding Torque: 700 Ncm**

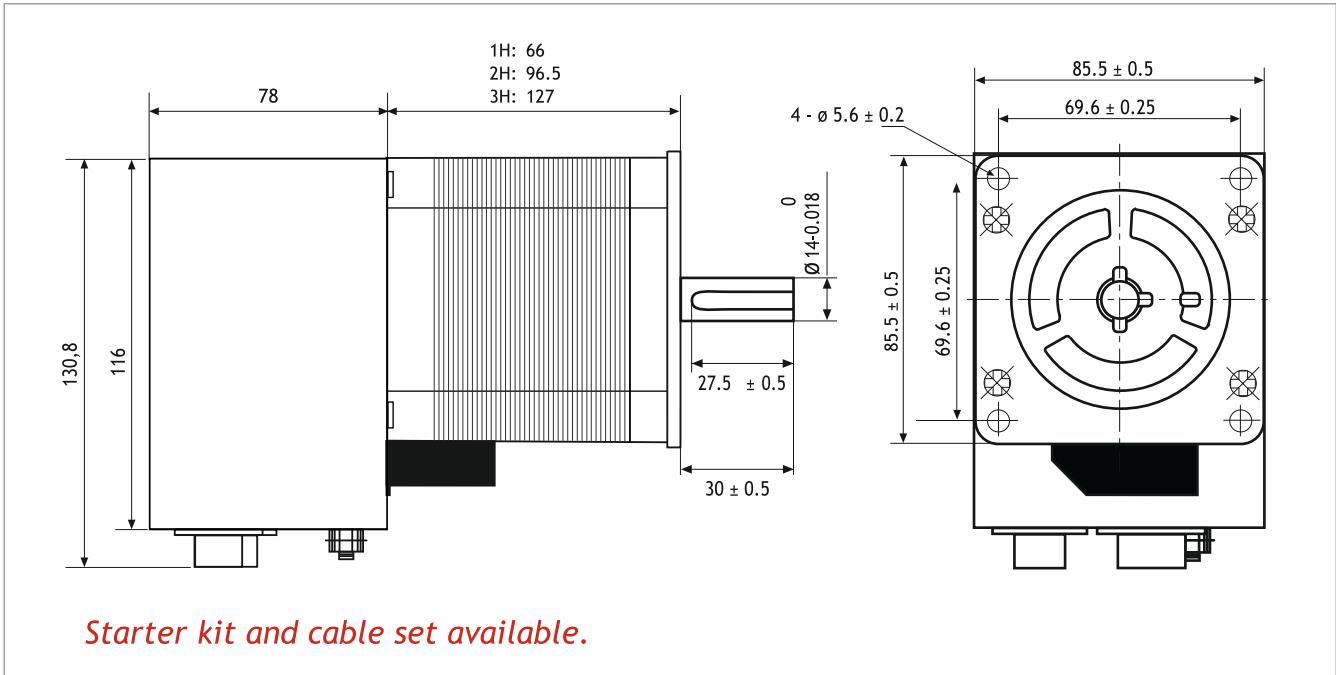


**Holding Torque: 920 Ncm**

# CONNECTION SCHEME



## MECHANICAL DIMENSIONS (mm)





STEPPING MOTOR DRIVES ACCESSORIES

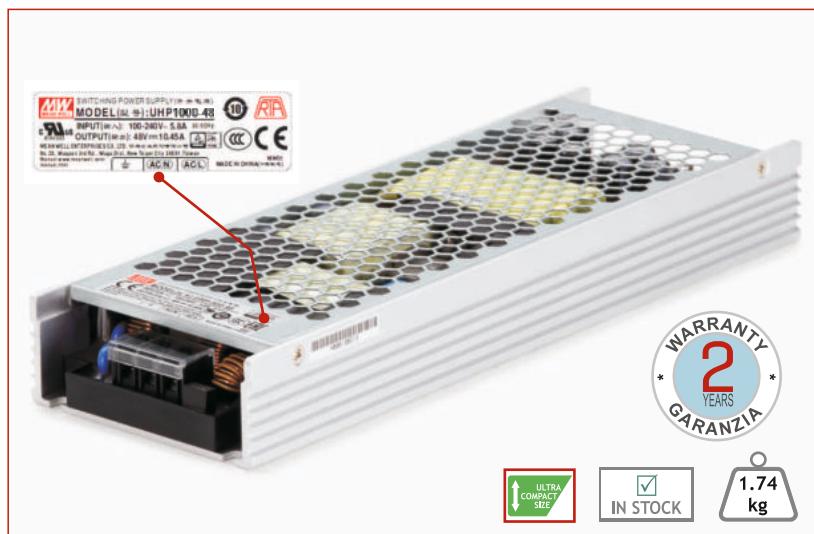
## **SWITCHING POWER SUPPLY**



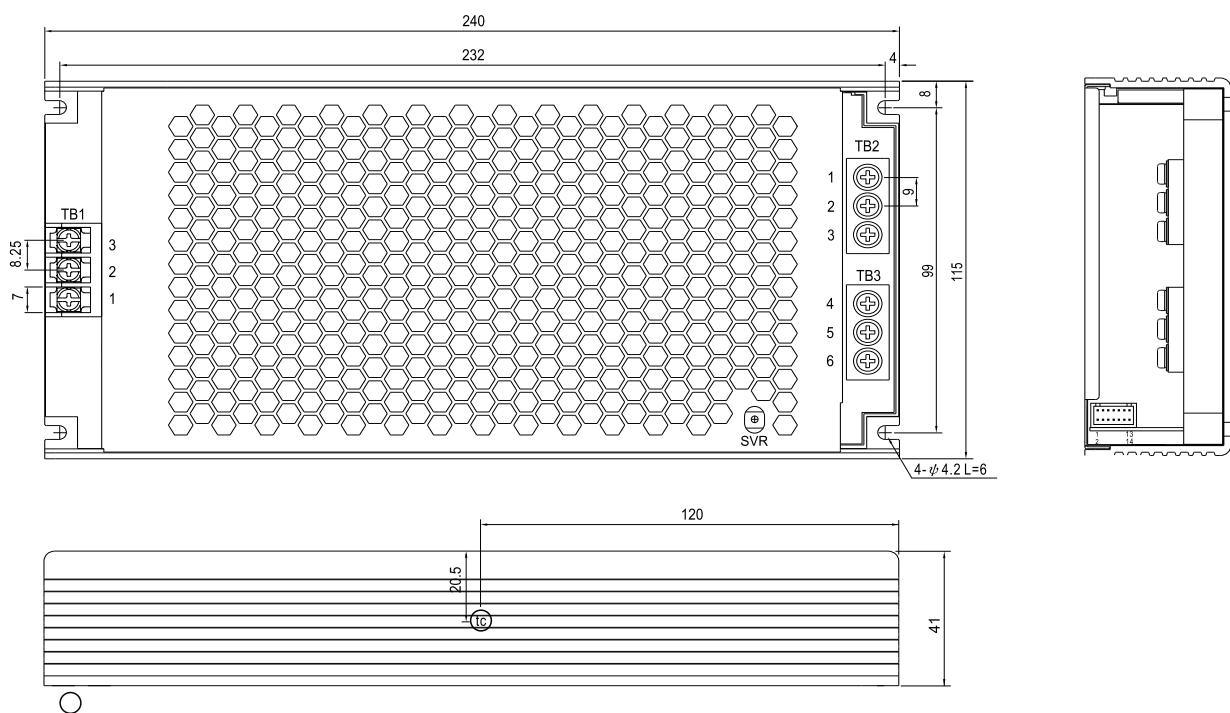
# R-UHP 1000-48 SWITCHING POWER SUPPLY

## Main Features

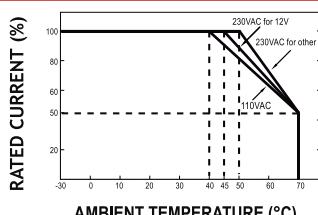
- 21 A output - 48 VDC
- AC input voltage range: 90~264 VAC
- -30~+70 °C ambient temperature
- Protections: Short Circuit, Overload, Over Voltage, Over Temperature
- $V_{DC\_OK}$  signal active
- Led indicator for power on
- Warranty: 24 months



## Dimensions (Units:mm)



## MORE INFO

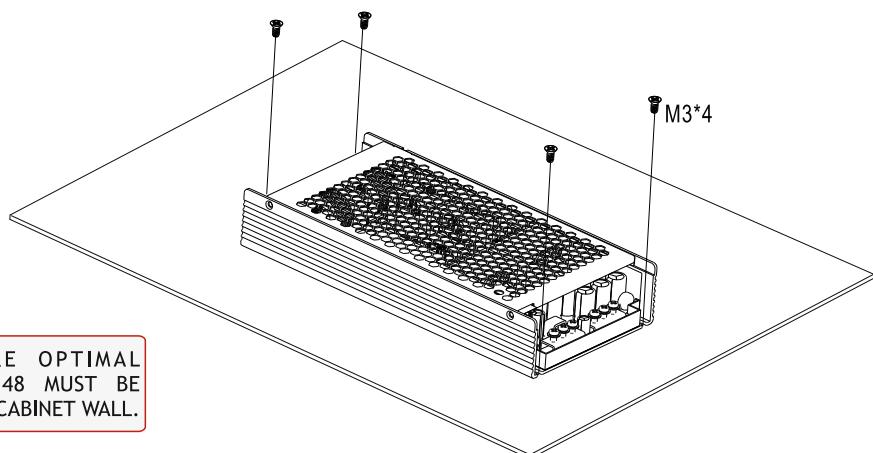


DERATING CURVE

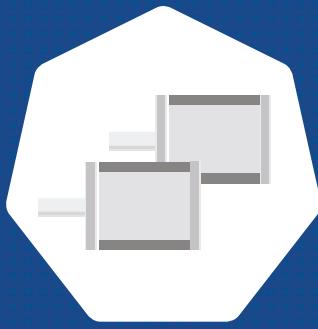
## Specifications

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
	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
FUNCTION	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
	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	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 it still meets EMC directives.	

## Mounting





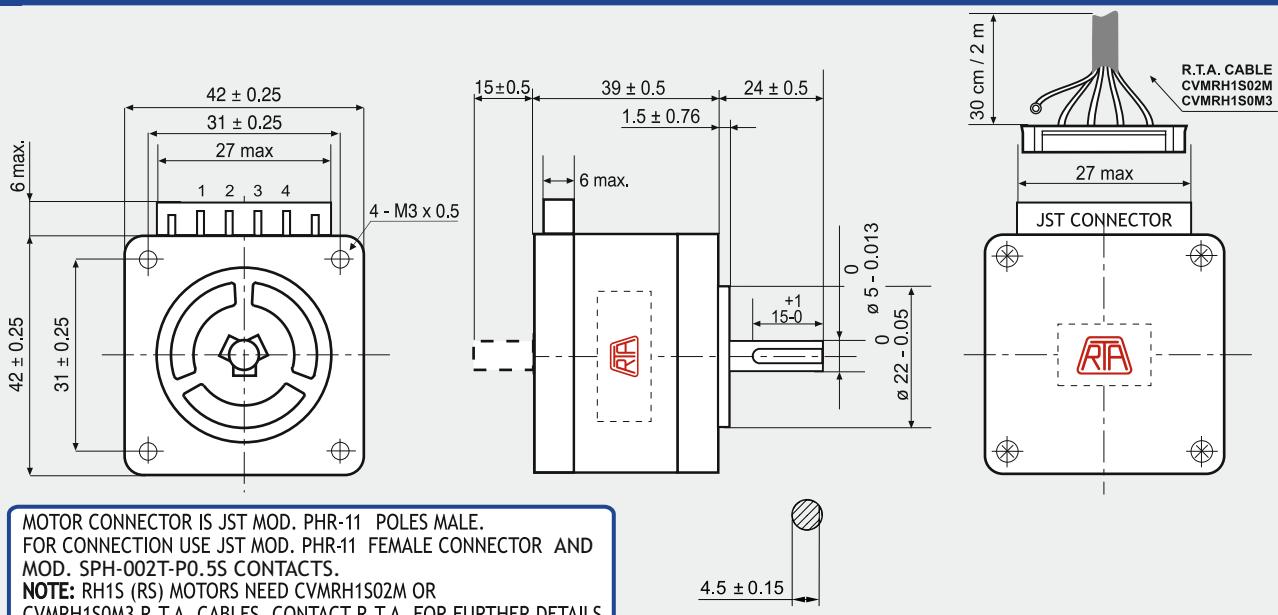


## STEPPING MOTORS



# RH 1S1H

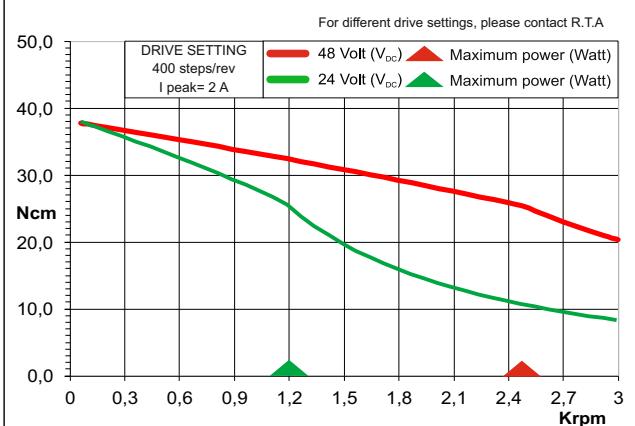
## Dimensions (Unit:mm)



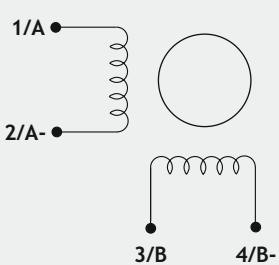
## FEATURES

MODEL	RH 1S1H (RH 1S1H-RS)
BASIC STEP ANGLE	$1.8 \pm 0.09^\circ$
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 ( $\text{Kgm}^2 \times 10^{-7}$ )	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

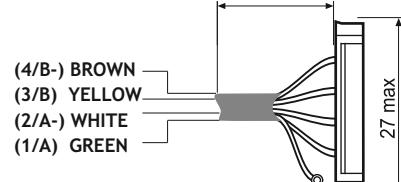
## TORQUE/SPEED CURVE



Codes between brackets refer to double shaft models.



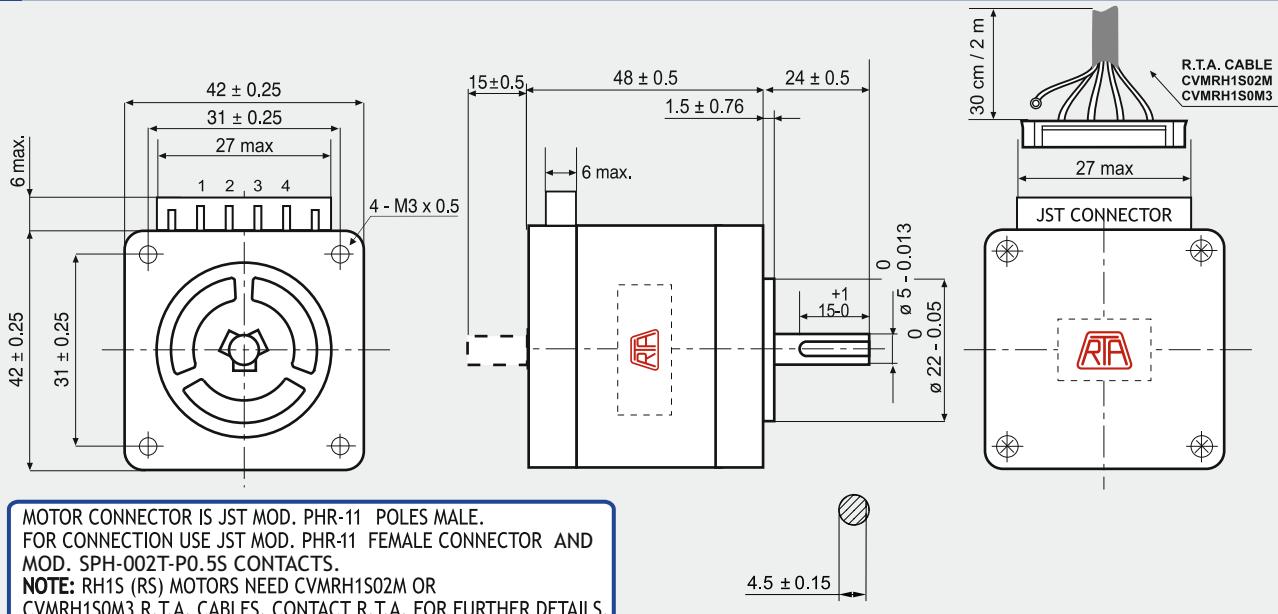
R.T.A. MOTOR CABLE  
CVMRH1S02M  
CVMRH1S0M3



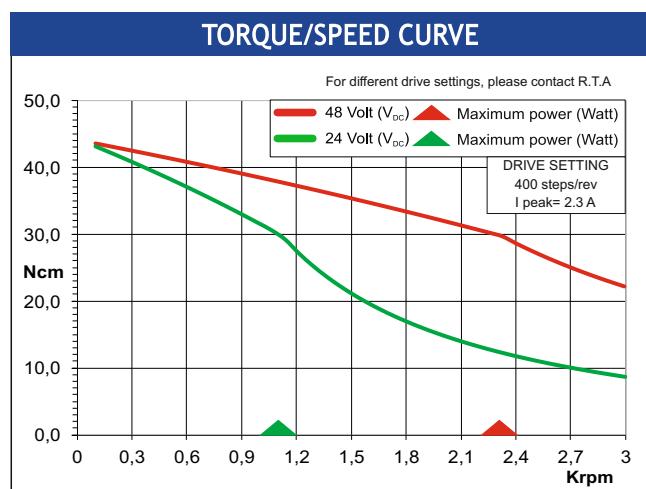
Suggested R.T.A. drive series: BSD, CSD, FLEX-DRIVE

# RH 1S2H

## Dimensions (Unit:mm)



FEATURES	
MODEL	RH 1S2H (RH 1S2H-RS)
BASIC STEP ANGLE	$1.8 \pm 0.09^\circ$
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 ( $\text{Kgm}^2 \times 10^{-7}$ )	63
THEORETICAL ACCELERATION (rad $\times \text{sec.}^{-2}$ )	89000
BACK E.M.F. (V/Krpm)	24.3
MASS (Kg)	0.38
PROTECTION DEGREE	IP40
LEADS CODE	V



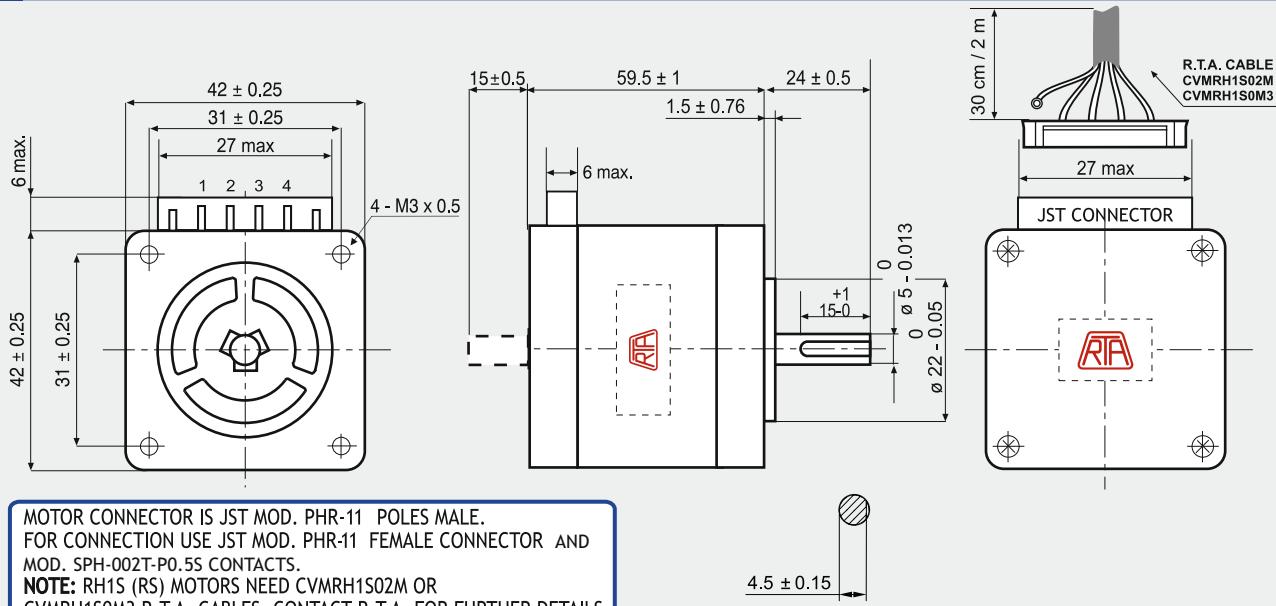
Codes between brackets refer to double shaft models.



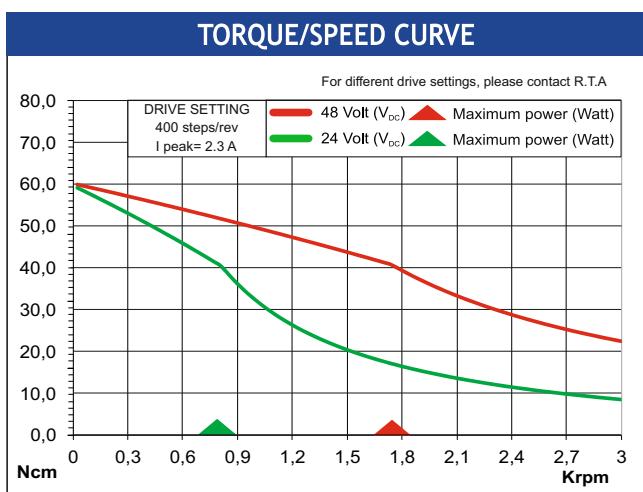
Suggested R.T.A. drive series: BSD, CSD, FLEX-DRIVE

# RH 1S3H

## Dimensions (Unit:mm)



FEATURES	
MODEL	RH 1S3H (RH 1S3H-RS)
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 ( $\text{Kgm}^2 \times 10^{-7}$ )	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



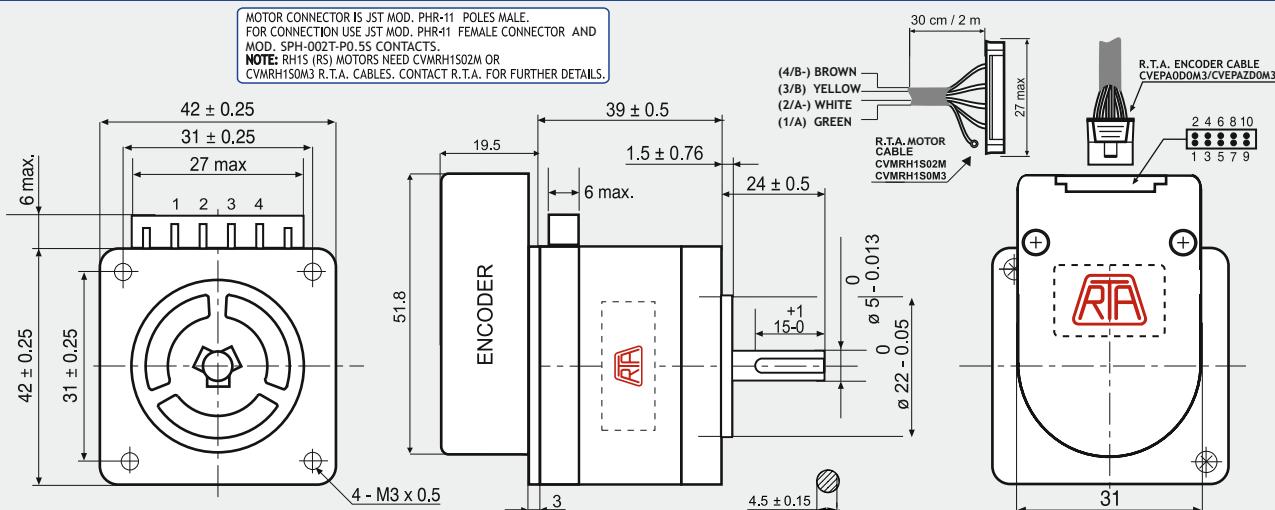
Codes between brackets refer to double shaft models.



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

# RH 1S1H-0XX0

## Dimensions (Unit:mm)

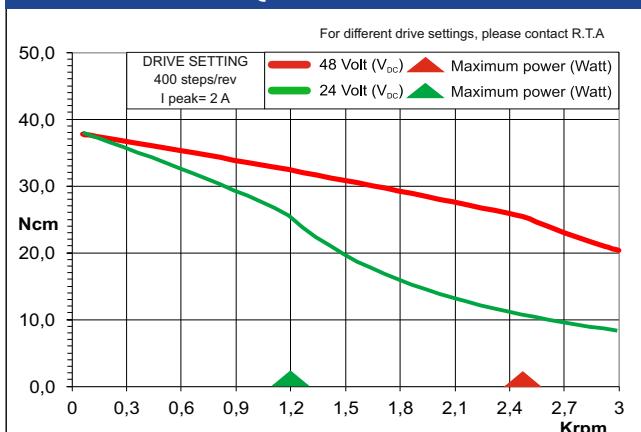


ENCODER OPTIONS:	RH 1S1H-04D0	RH 1S1H-04E0	RH 1S1H-0HE0
RESOLUTION	400 cpr	400 cpr	4000 cpr
INDEX	No	Yes	Yes
CURRENT CONSUMPTION (mA)	50	50	85
HIGH LEVEL OUTPUT (Volt)	5 (TIP) - 4.75 (MIN) ( $I_{MAX}=25mA$ )	3.4 (TIP) - 2.4 (MIN) ( $I_{MAX}=20mA$ )	3.4 (TIP) - 2.4 (MIN) ( $I_{MAX}=20mA$ )
LOW LEVEL OUTPUT (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 1S1H
BASIC STEP ANGLE	$1.8 \pm 0.09^\circ$
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 ( $Kgm^2 \times 10^{-7}$ )	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

## TORQUE/SPEED CURVE



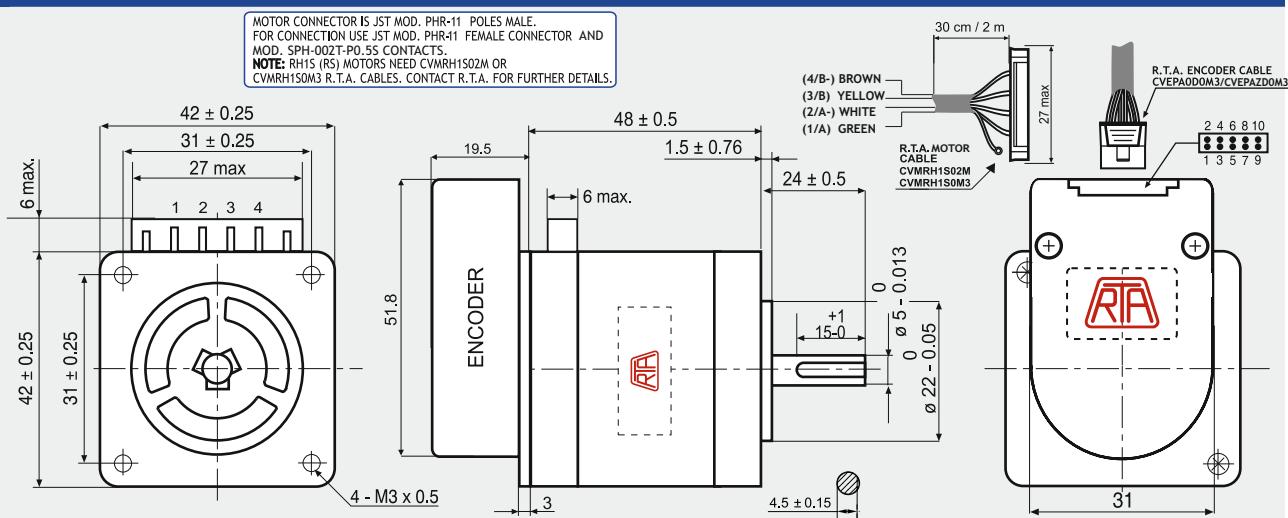
RTA MOTOR CABLE COLORS		ENCODER PIN-OUT		
DESCRIPTION	04D0 PINS	04E0/OHE0 PINS	R.T.A. CABLE LEADS COLOR	
CHANNEL A+	6	6	● GREEN	
CHANNEL A-	5	5	● PURPLE	
CHANNEL B+	8	8	● BLUE	
CHANNEL B-	7	7	● BROWN	
+ DC (5V)	2	2	● RED	
GROUND	3	3	● BLACK	
INDEX+	/	10	● ORANGE	
INDEX-	/	9	○ WHITE	

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

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

# RH 1S2H-0XX0

## Dimensions (Unit:mm)



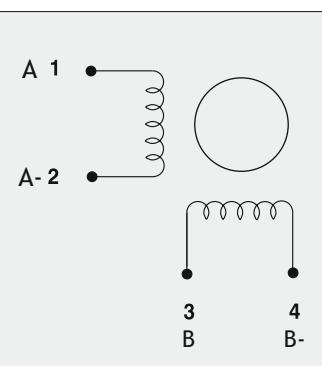
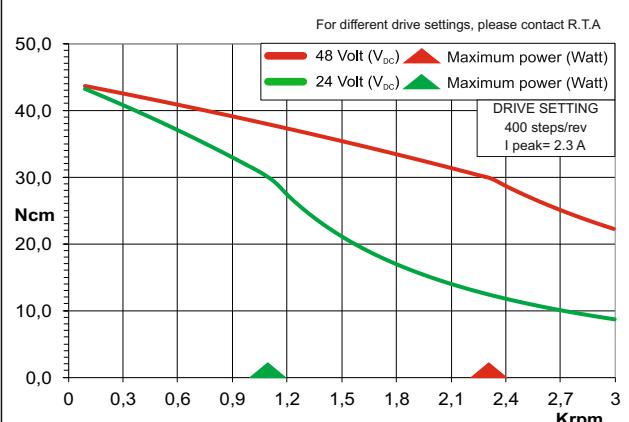
## ENCODER OPTIONS:

	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 $V_{DC}$ ±10%	5 $V_{DC}$ ±10%	5 $V_{DC}$ ±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 x sec. <sup>-2</sup> )	89000
BACK E.M.F. (V/Krpm)	24.3
MASS (Kg)	0.38
PROTECTION DEGREE	IP40
LEADS CODE	V

## TORQUE/SPEED CURVE



## RTA MOTOR CABLE COLORS

DESCRIPTION	
CHANNEL A	● GREEN
CHANNEL A-	○ WHITE
CHANNEL B	■ YELLOW
CHANNEL B-	■ BROWN

## ENCODER PIN-OUT

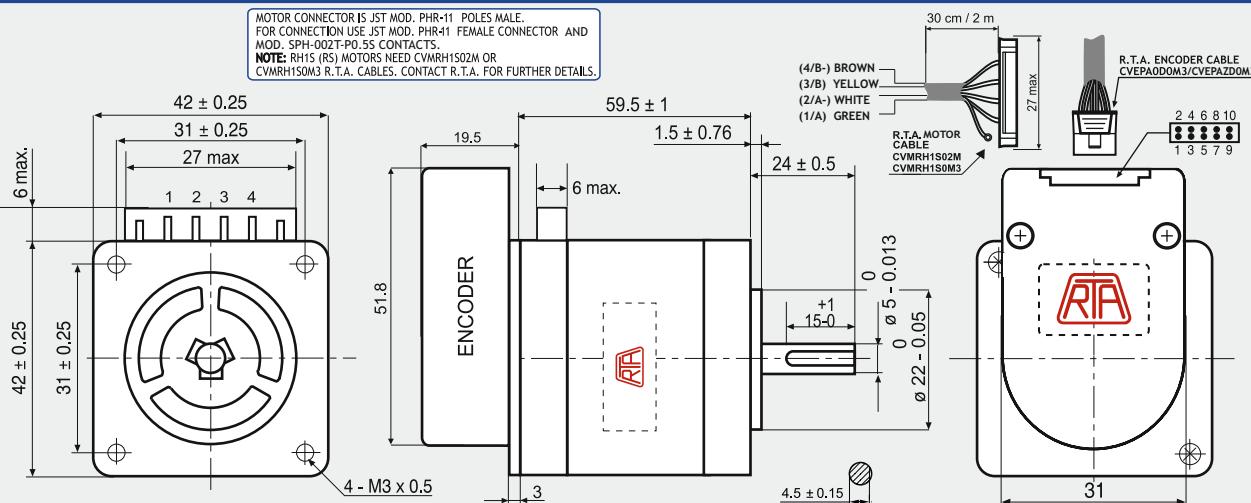
DESCRIPTION	04D0 PINS	04E0/OHE0 PINS	R.T.A. CABLE LEADS COLOR
CHANNEL A+	6	6	● GREEN
CHANNEL A-	5	5	○ PURPLE
CHANNEL B+	8	8	■ BLUE
CHANNEL B-	7	7	■ BROWN
+ DC (5V)	2	2	● RED
GROUND	3	3	● BLACK
INDEX+	/	10	● ORANGE
INDEX-	/	9	○ WHITE

R.T.A. CABLE (30 cm) CVEPAOD0M3 CVEPAZD0M3

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

# RH 1S3H-0XX0

## 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 <sub>DC</sub> ±10%	5 V <sub>DC</sub> ±10%	5 V <sub>DC</sub> ±10%

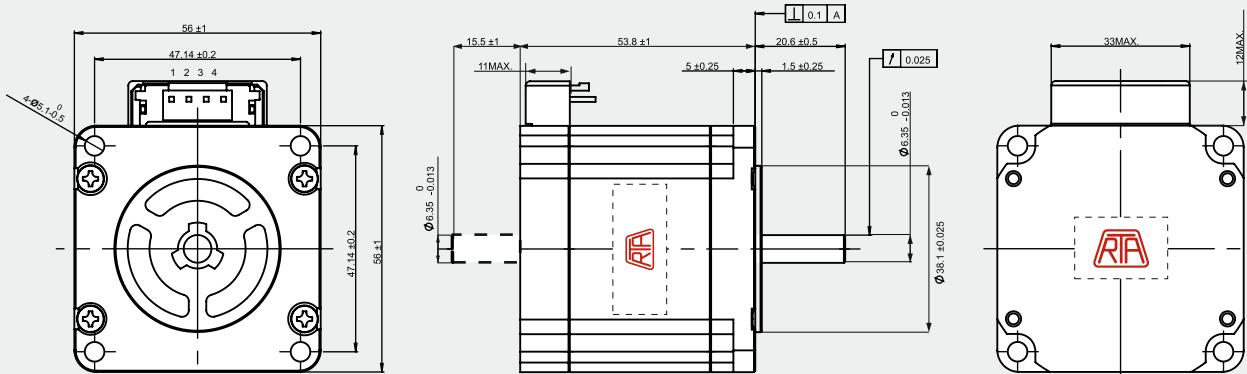


A 1	A- 2	RTA MOTOR CABLE COLORS	ENCODER PIN-OUT																																														
		<table border="1"> <tr> <th>DESCRIPTION</th> <th></th> </tr> <tr> <td>CHANNEL A</td> <td>● GREEN</td> </tr> <tr> <td>CHANNEL A-</td> <td>○ WHITE</td> </tr> <tr> <td>CHANNEL B</td> <td>● YELLOW</td> </tr> <tr> <td>CHANNEL B-</td> <td>● BROWN</td> </tr> </table>	DESCRIPTION		CHANNEL A	● GREEN	CHANNEL A-	○ WHITE	CHANNEL B	● YELLOW	CHANNEL B-	● BROWN	<table border="1"> <tr> <th>DESCRIPTION</th> <th>04D0 PINS</th> <th>04E0/OHE0 PINS</th> <th>R.T.A. CABLE LEADS COLOR</th> </tr> <tr> <td>CHANNEL A+</td> <td>6</td> <td>6</td> <td>● GREEN</td> </tr> <tr> <td>CHANNEL A-</td> <td>5</td> <td>5</td> <td>● PURPLE</td> </tr> <tr> <td>CHANNEL B+</td> <td>8</td> <td>8</td> <td>● BLUE</td> </tr> <tr> <td>CHANNEL B-</td> <td>7</td> <td>7</td> <td>● BROWN</td> </tr> <tr> <td>+ DC (5V)</td> <td>2</td> <td>2</td> <td>● RED</td> </tr> <tr> <td>GROUND</td> <td>3</td> <td>3</td> <td>● BLACK</td> </tr> <tr> <td>INDEX+</td> <td>/</td> <td>10</td> <td>● ORANGE</td> </tr> <tr> <td>INDEX-</td> <td>/</td> <td>9</td> <td>○ WHITE</td> </tr> </table>	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
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			R.T.A. CABLE (30 cm) CVEPAODOM3 CVEPAZDOM3																																														

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

# 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.

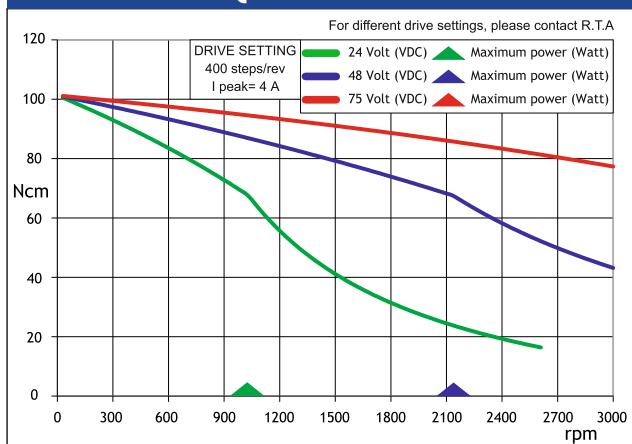
**+ 30%**  
**HOLDING TORQUE**

THAN THE PREVIOUS «H» SERIES

## FEATURES

MODEL	RH 2S1M (RH 2S1M-RS)
BASIC STEP ANGLE	$1.8 \pm 0.09^\circ$
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 ( $\text{Kgm}^2 \times 10^{-7}$ )	280
THEORETICAL ACCELERATION (rad x sec. <sup>-2</sup> )	50000
BACK E.M.F. (V/Krpm)	35
MASS (Kg)	0.69
PROTECTION DEGREE	IP40
LEADS CODE	V

## TORQUE/SPEED CURVE



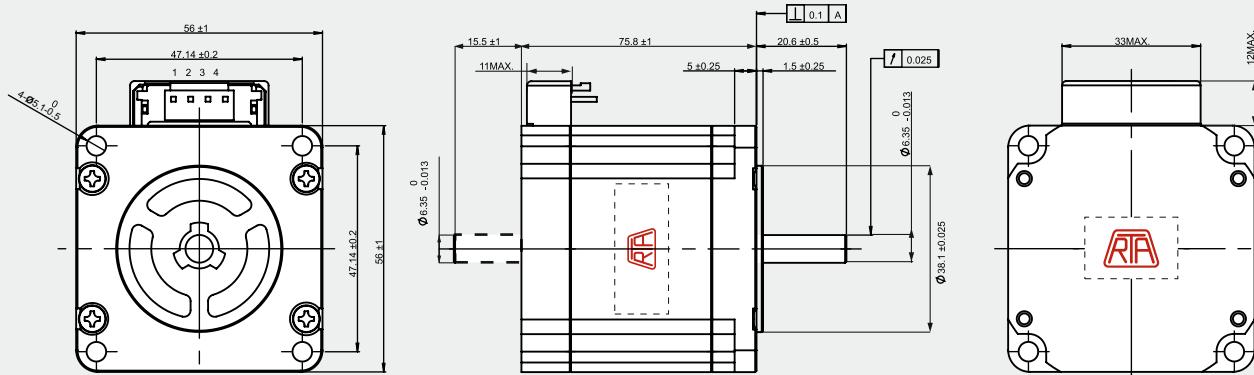
Codes between brackets refer to double shaft models.



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

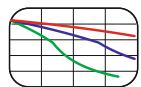
# RH 2S2M

## Dimensions (Unit:mm)



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.

**+ 40%**  
**HOLDING TORQUE**

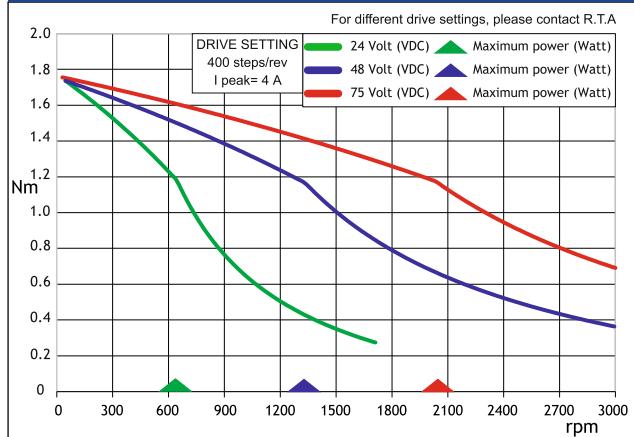


THAN THE PREVIOUS «H» SERIES

## FEATURES

MODEL	RH 2S2M (RH 2S2M-RS)
BASIC STEP ANGLE	$1.8 \pm 0.09^\circ$
BIPOLAR CURRENT (Amp)	4.0
UNIPOLAR CURRENT (Amp)	
RESISTANCE (Ohm)	0.52
INDUCTANCE (mH)	2.4
BIPOLAR HOLDING TORQUE (Nm)	235
UNIPOLAR HOLDING TORQUE (Nm)	
ROTOR INERTIA ( $\text{Kgm}^2 \times 10^{-7}$ )	500
THEORETICAL ACCELERATION (rad $\times \text{sec}^{-2}$ )	47000
BACK E.M.F. (V/Krpm)	58.7
MASS (Kg)	1.1
PROTECTION DEGREE	IP40
LEADS CODE	V

## TORQUE/SPEED CURVE



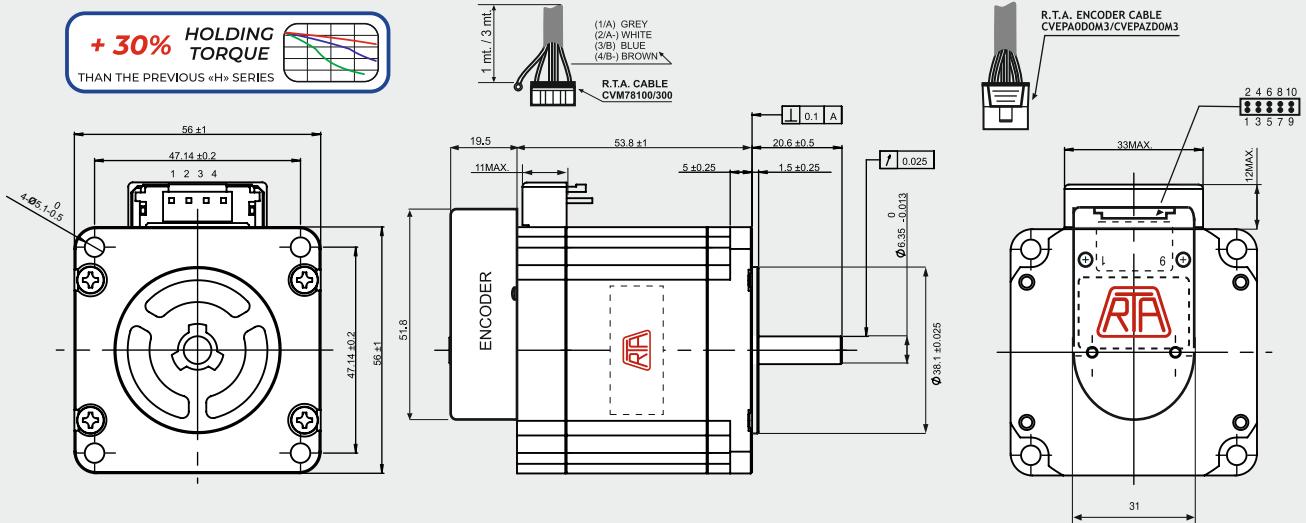
Codes between brackets refer to double shaft models.



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

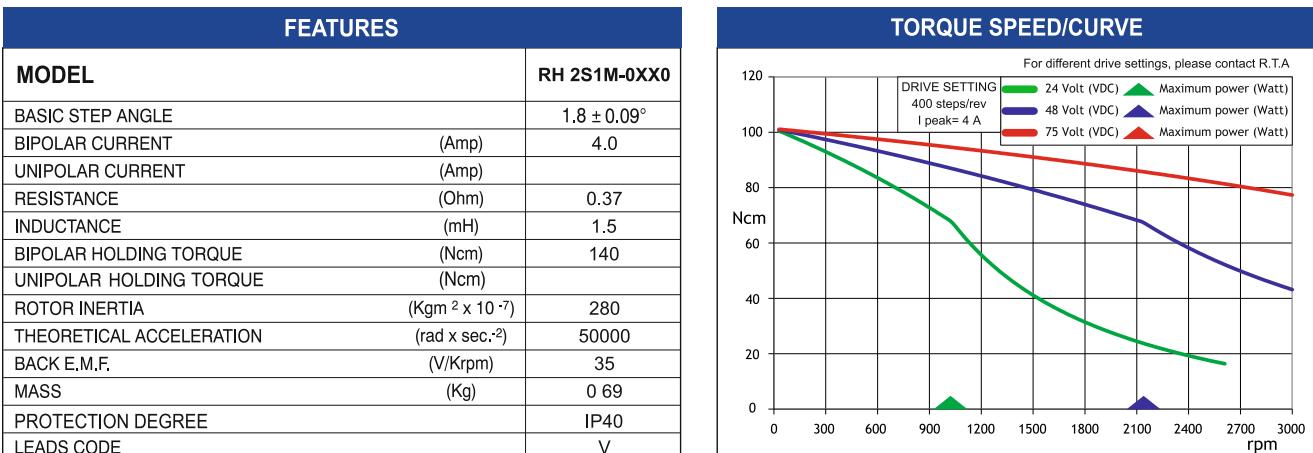
# RH 2S1M-0XX0

## Dimensions (Unit:mm)



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 <sub>DC</sub> ± 10%	5 V <sub>DC</sub> ± 10%	5 V <sub>DC</sub> ± 10%

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

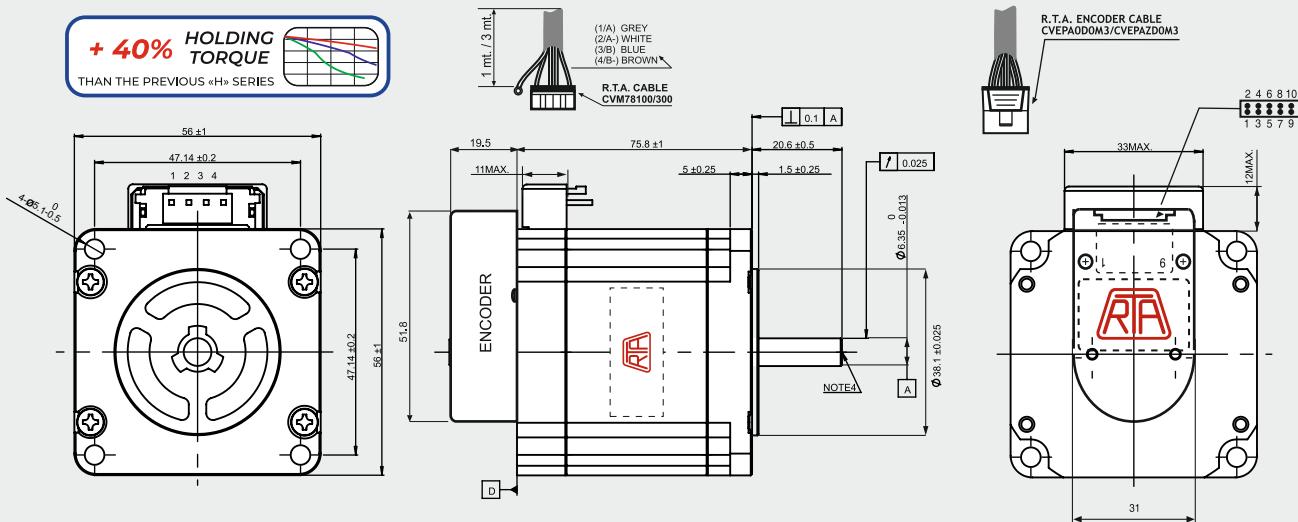


	DESCRIPTION	04D0 PINS	04E0 PINS	OHE0 PINS	R.T.A. CABLE LEADS COLOR
	CHANNEL A+	6	6	6	● GREEN
	CHANNEL A-	5	5	5	● PURPLE
	CHANNEL B+	8	8	8	● BLUE
	CHANNEL B-	7	7	7	● BROWN
	+ DC (5V)	2	2	2	● RED
	GROUND	3	3	3	● BLACK
	INDEX+	/	10	10	● ORANGE
	INDEX-	/	9	9	○ WHITE

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

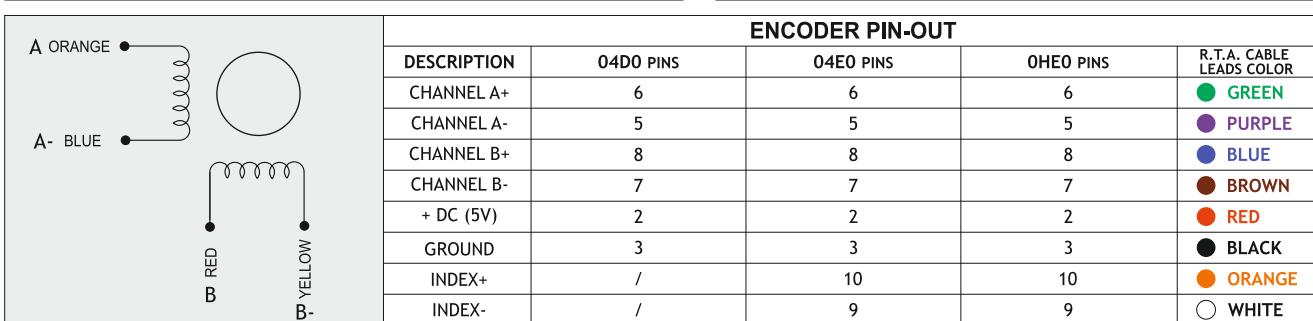
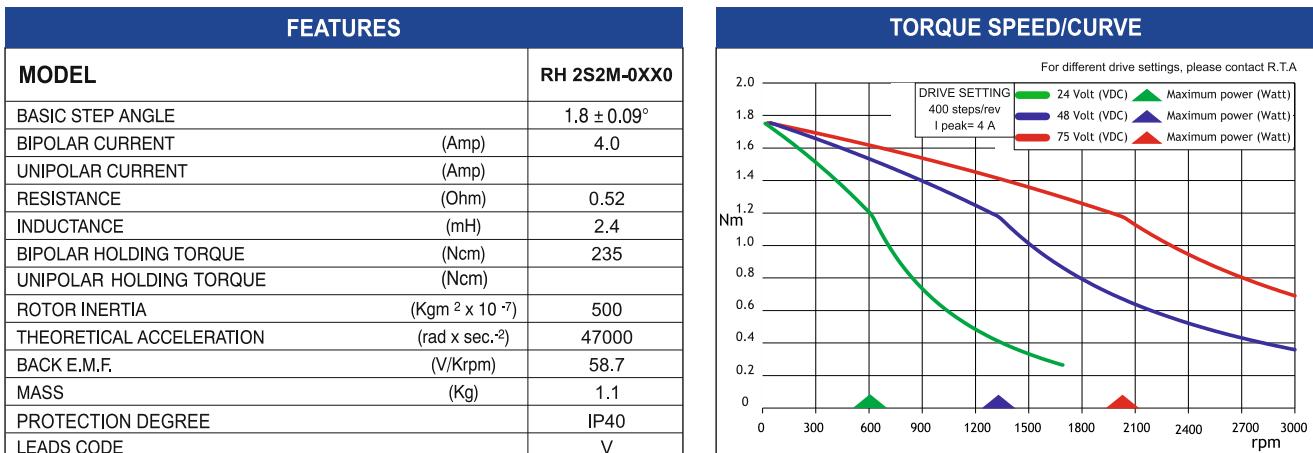
# RH 2S2M-0XX0

## Dimensions (Unit:mm)



ENCODER OPTIONS:	RH 2S2M-04D0	RH 2S2M-04E0	RH 2S2M-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)	$5 V_{DC} \pm 10\%$	$5 V_{DC} \pm 10\%$	$5 V_{DC} \pm 10\%$

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



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



STEPPING MOTORS ACCESSORIES

## FRONT BRAKES



# FB-M12-17-02-00000

## FRONT BRAKES

M12  
CONNECTOR

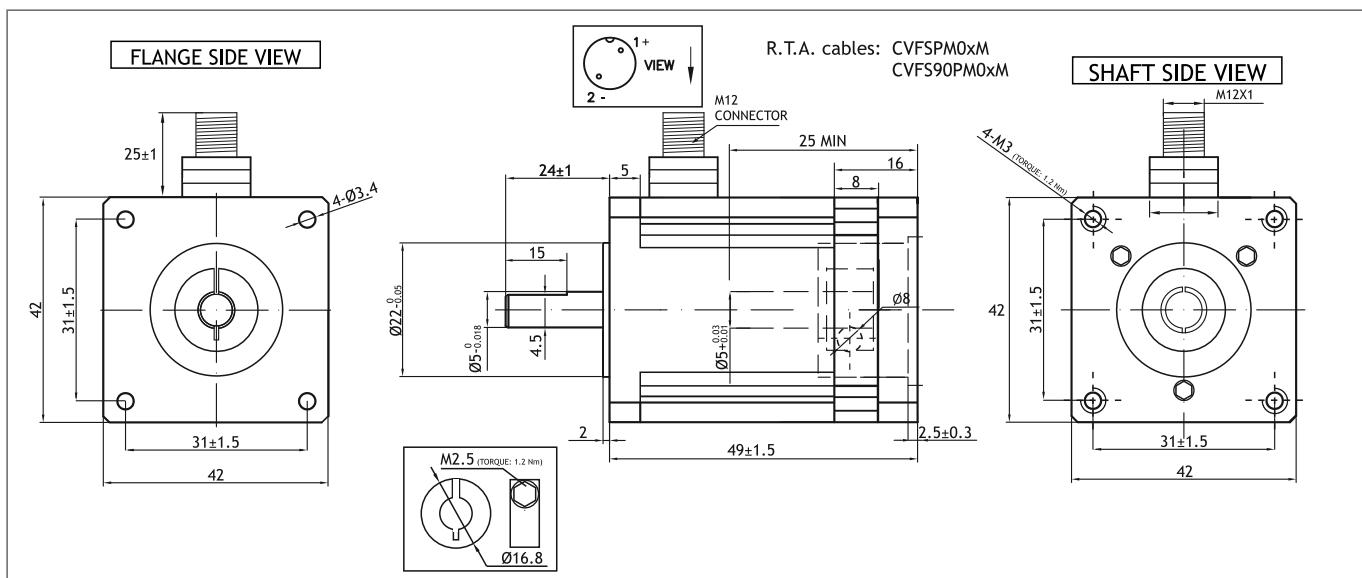
24 VDC

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



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

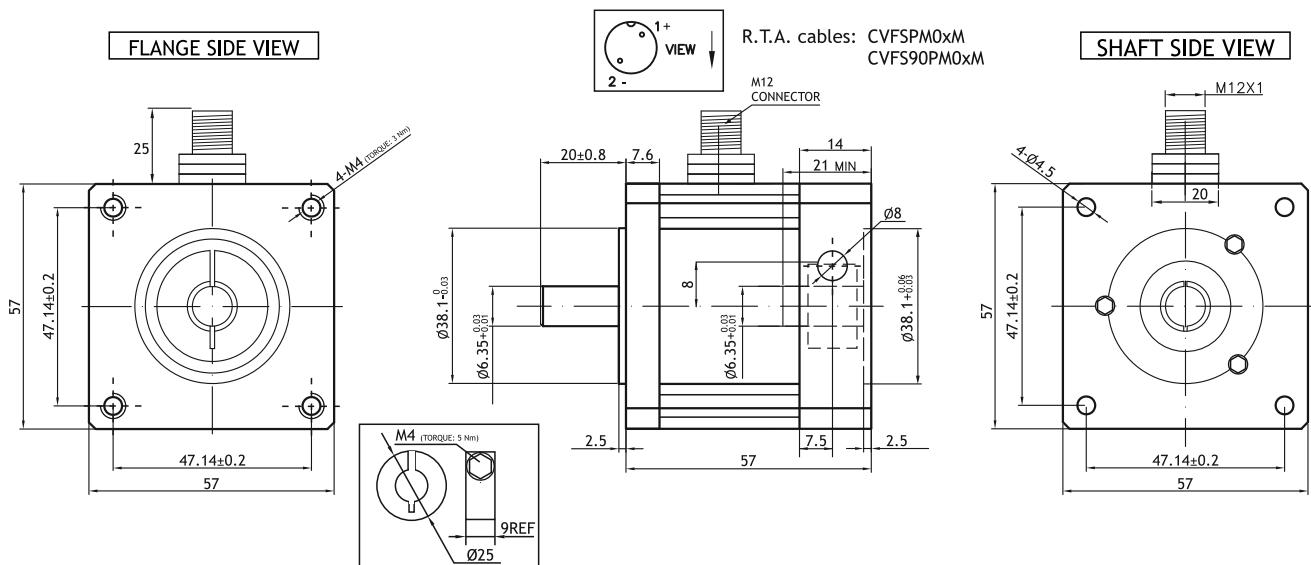
## FRONT BRAKES

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

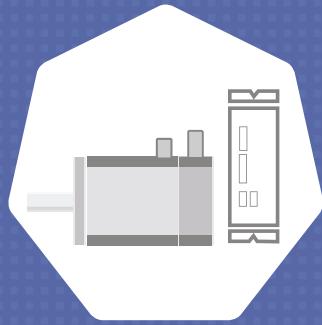
## Suggested motors and cables

	NEMA 23 motors	R.T.A. cables
<b>MOUNTING OPERATION MODE:</b>	<ul style="list-style-type: none"> <li>■ Tightening torque M= 5 Nm</li> <li>■ Locking bolt M4</li> </ul>	<ul style="list-style-type: none"> <li>■ R.T.A. Quality Control</li> </ul>



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.



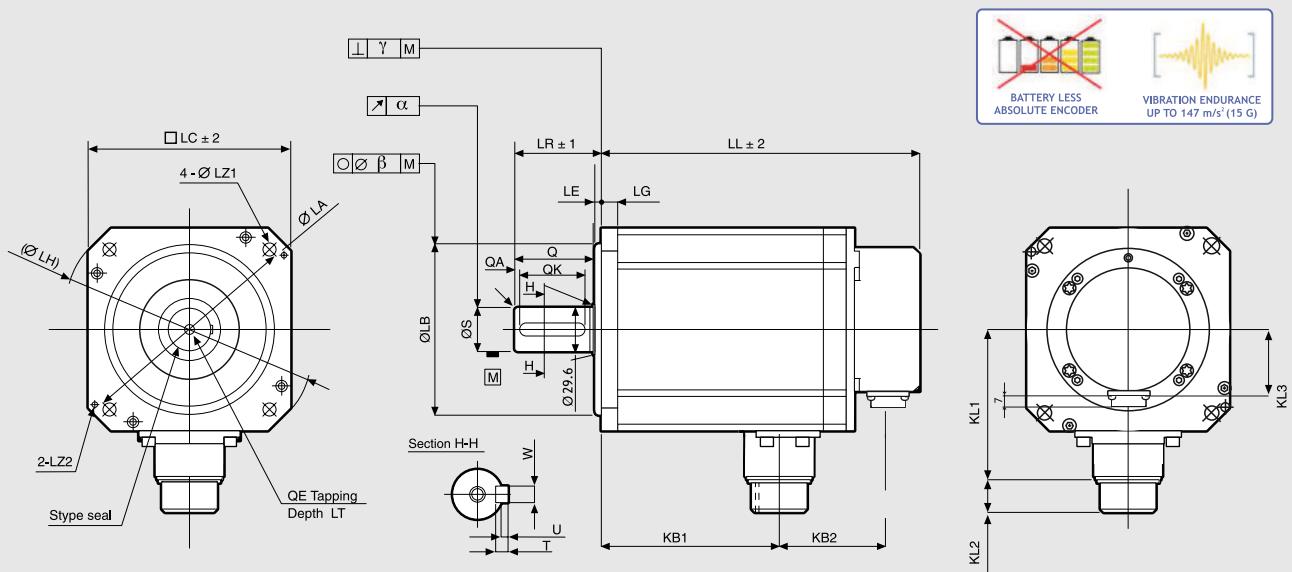


## SERVO SYSTEMS



# R2AA13200LXROOM (R2AA13200LCROOM)

## Dimensions (Unit:mm)

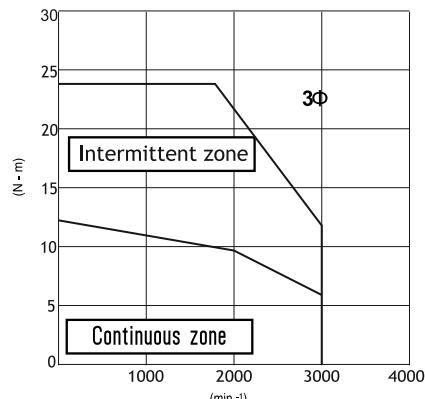


without brake	with brake	LL	KB2	LL	KB2	KL1	KL2	KL3	LG	LA	LB	LE	LH	LC	LZ1	LZ2	LR	S	Q	QA	QK	W	T	U	KB1	QE	LT	
171	57	216	103	98	21	38	12	145	0	110-0.035	4	165	130	9	M6	55	0	28-0.013	50	3	42	0	8-0.036	7	3	99	M8	25

## FEATURES

MODEL		R1AA13200LXR00M													
NOMINAL POWER		(W)													
NOMINAL SPEED		(rpm)													
MAXIMUM SPEED		(rpm)													
NOMINAL TORQUE		(Nm)													
STALL TORQUE		(Nm)													
MAXIMUM TORQUE		(Nm)													
INERTIA		(Kg*m²)													
ENCODER		(imp./rev)													
PROTECTION DEGREE		IP65													
WEIGHT	[version with brake]	(Kg)													

## TORQUE CURVE R1AA13200F[2kW] + RS3A10



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



WITHOUT BRAKE  
R2AA13200LXROOM

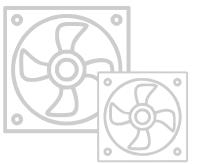
Indicated performances refer to motor controlled by related new RS3 standard and EtherCat amplifiers.

3Φ = torque curve with three-phase power supply



WITHOUT BRAKE  
R2AA13200LCROOM

Suggested amplifiers: RS3A05A0AA2, RS3A05A2HA4W00



## COOLING FANS



**120x120x38 mm**

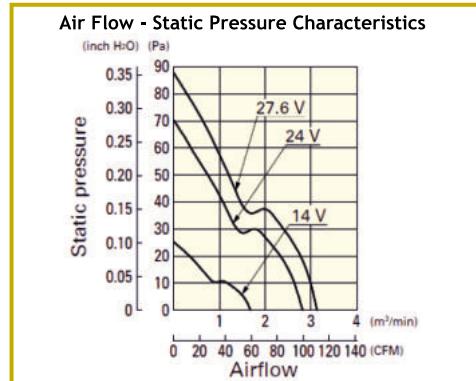
**24 V**



#### 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

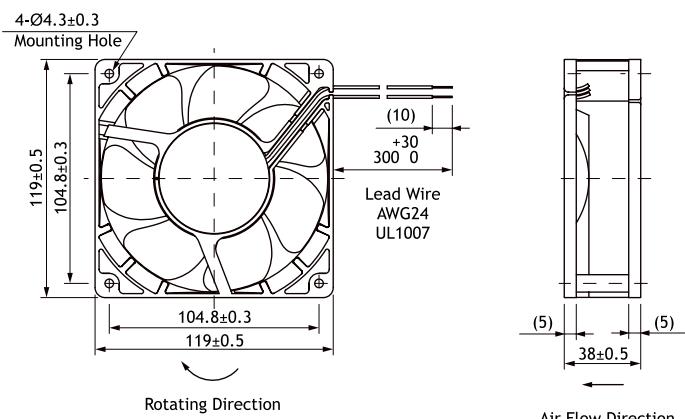
#### Air Flow - Static Pressure Characteristics



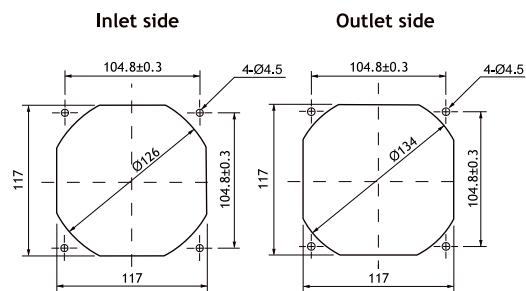
#### Specifications

Model No.	Rated Voltage [V]	Operating Voltage Range [V]	Rated Current [A]	Rated Input [W]	Rated Speed [min <sup>-1</sup> ]	Max. Air Flow [m <sup>3</sup> /min]	Max. Static Pressure [Pa]	Max. 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](http://www.rta-store.com)

**R.T.A. S.p.A.**  
R.T.A. SpA  
Viale Mancini 15 - 20051 Muggia (VA) ITALY  
+39 089 301 200 | +39 089 035 00 | [www.rta.it](http://www.rta.it)

**R.T.A. Milano Centro**  
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+39 051 780 111 | [www.rta-milano.it](http://www.rta-milano.it)  
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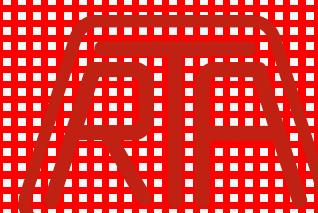
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