

REFERENCE SPECIFICATIONS

M/S

MODEL AC Servo Motor (□20 DC48 V)
MNMA2ABF1A (20 bit absolute encoder)

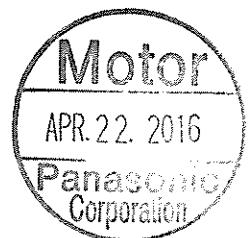
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Changed on . . .

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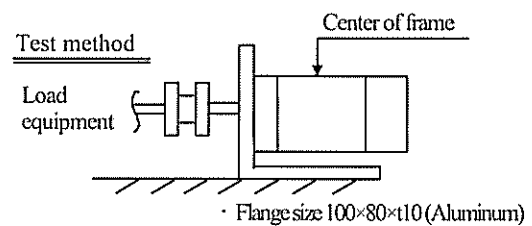
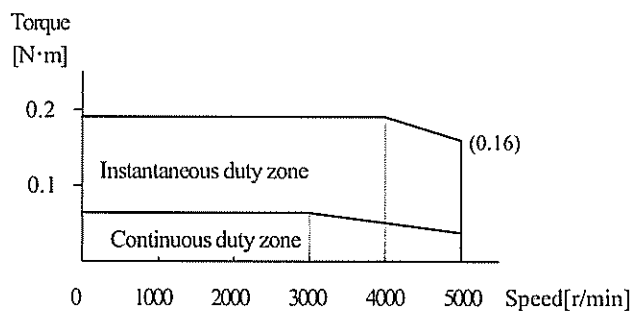
Checked	Checked	Designed
<i>Y. Kira</i>	<i>S. Nishio</i>	<i>M. Miyazaki</i>



AC Servo Motor Specification

Motor model		MNMA2ABF1A (Without brake)	
Rated output	W	20	
Rating	%	100	
Number of poles		4	
Rated speed	r/min	3000	
Max. speed	r/min	5000	
Rated torque	N·m	0.064	
Max. torque	N·m	0.191	
Rated current	A(rms)	(1.8)	
Rotor inertia	$\times 10^{-4} \text{ kg}\cdot\text{m}^2$	0.0026	
Electrical time constant	ms	(0.26)	
Mechanical time constant	ms	0.92	
Power rate	kW/s	15.6	
Momentary max. current	A(o-p)	(7.6)	
Demagnetization current	A(o-p)	11.4	
Voltage constant per phase	$\times 10^{-3} \text{ V(rms)/min}^{-1}$	$1.4 \pm 10 \%$	
Excitation voltage constant	$\times 10^{-3} \text{ V(o-p)/min}^{-1}$	$2.9 \pm 10 \%$	
Torque constant	N·m/A(rms)	$0.040 \pm 10 \%$	
	N·m/A(o-p)	$0.028 \pm 10 \%$	
Phase resistance	Ω	$1.9 \pm 7 \%$	
Phase inductance	mH	(0.49)	* Center value
Thermal class		130(B)	
Vibration class		V-15	
Paint color		Without paint	Plastic part : Gray
Mass	kg	0.16	
Structure		Totally-enclosed self-cooled type	Without oil seal
Supply voltage	V DC	48	

- This specification is guaranteed after combining and adjusting with the amplifier.
(Representative value at 20 °C)
- Rated torque is the result that have been considered dispersions of motor specification under our measurement method.
- This motor is not a waterproof construction. (IP40)
- Set the temperature of center of frame to 85 °C or less. (When ambient temperature is 40 °C)
- Speed - Torque characteristic (Representative value)
Amplifier power supply voltage : at DC 48 V



SX-DSV0310101

Do NOT scale the drawings.
Instead rely on the dimensions
and their definitions

Opponent connector (No belongings)

Motor connector (AMP)

Cap : 172159-1
Socket : 170362-1
or 170366-1

Detector connector (AMP)

Cap : 172161-1
Socket : 170361-1
or 170365-1

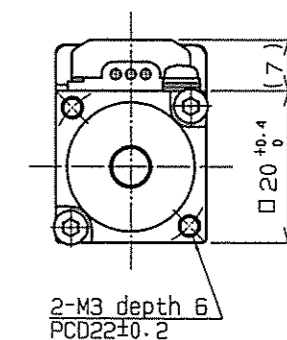
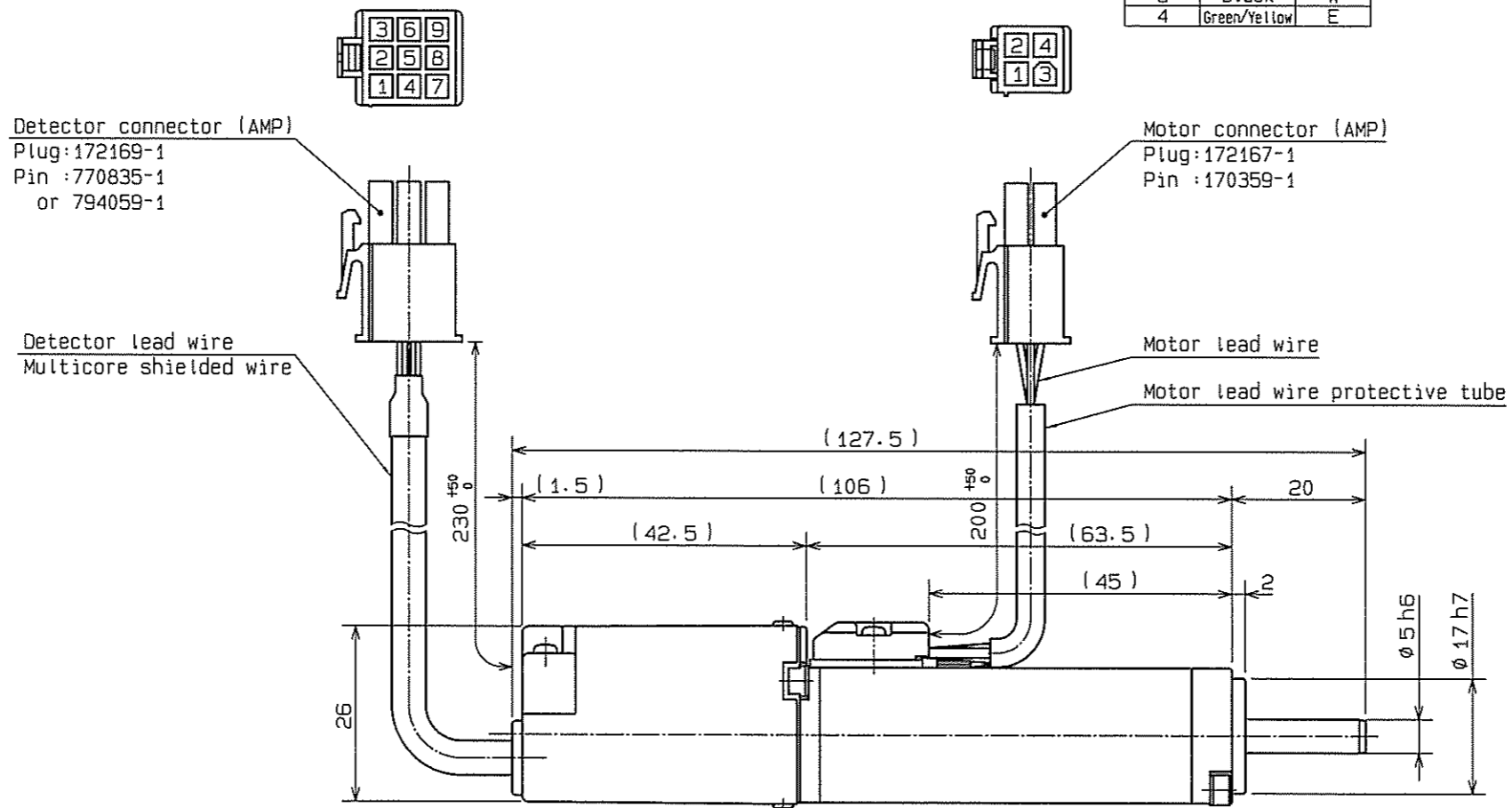
Rotary encoder unit

PIN No.	Color	Signal
1	Red	BAT +
2	Pink	BAT -
3	Shield	FG
4	Sky blue	PS (SD)
5	Violet	PS (SD)
6	---	NC
7	white	E5 V
8	Black	E0 V
9	---	NC

*Absolute encoder
20 bit

Motor unit

PIN No.	Color	Signal
1	Red	U
2	White	V
3	Black	W
4	Green/Yellow	E



- NOTES
- The assembling precision conforms to the Japan Machine Tool Association Standard (MAS402-1981). (TIR value)
 - Shaft end runout: 0.03 (shaft exit middle)
 - Squareness of flange face to shaft: 0.08 (ø22)
 - Eccentricity of flange fitting outside diameter to shaft: 0.06 (middle of spigot)
 - A motor is mounted in a field with flatness of 0.05 mm or less.
 - The screwed depth of motor mounting bolt is less than 6 mm.
 - Make sure that the cables are not subjected to stresses due to external bending forces or self-weight at the cable outlets or connections.

TRACE
MIYAZAKI 2016/04/21
CLASS E
SVM

Scale	Panasonic Corporation				Agreement	Model	MNMA2ABF1A
1 : 1	3rd Angle System				Unit:mm		
Designed	Drawn	Checked	Checked	Checked	Name	OUTLINE DRAWING	
MIYAZAKI	MIYAZAKI	Nishio		Kira	No.	SX-DSV0310101	
2016/04/21	2016/04/21	2016/4/21		2016/4/21			