

Chapter 6

Product Specification

6.1.1 Servo Motor

| | |
|-------------------------------|-----|
| 6.1.1 Features..... | 6-2 |
| 6.1.2 External Dimension..... | 6-4 |

6.2 Servo Drive

| | |
|-------------------------------|-----|
| 6.2.1 Features..... | 6-6 |
| 6.2.2 External Dimension..... | 6-7 |

6.3 Option and Peripherals..... 6-8

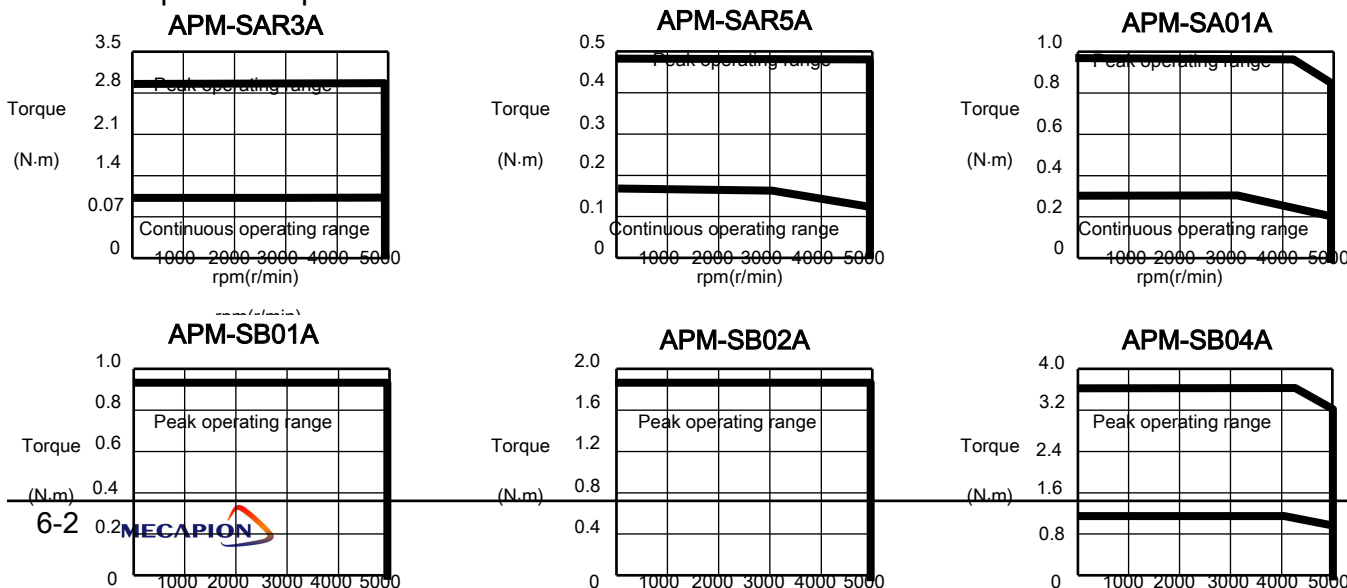
Chapter6 Product Specification

6.1 Servo Motor

6.1.1 Features

| Servo Motor Model(APM-) | | SAR3A | SAR5A | SA01A | SB01A | SB02A | SB04A |
|------------------------------|--|--|--------|--------|-----------------------------|-------|-------|
| Applicable drive(APD-) | | VKR5 | | VK01 | | VK02 | VK04 |
| Rated Output | [kW] | 0.03 | 0.05 | 0.1 | 0.1 | 0.2 | 0.4 |
| Rated Torque | [N·m] | 0.095 | 0.159 | 0.318 | 0.318 | 0.637 | 1.274 |
| | [kgf·cm] | 0.97 | 1.62 | 3.25 | 3.25 | 6.50 | 13.0 |
| Maximum Instantaneous Torque | [N·m] | 0.286 | 0.477 | 0.955 | 0.955 | 1.912 | 3.822 |
| | [kgf·cm] | 2.92 | 4.87 | 9.74 | 9.74 | 19.5 | 39.0 |
| Rated rpm | [r/min] | 3,000 | | | | | |
| Maximum rpm | [r/min] | 5,000 | | | | | |
| Inertia | [kg·m ² ×10 ⁻⁴] | 0.011 | 0.021 | 0.045 | 0.114 | 0.182 | 0.321 |
| | [gf·cm·s ²] | 0.0112 | 0.0214 | 0.0459 | 0.116 | 0.186 | 0.327 |
| Allowable load inertia ratio | | 30 times of motor inertia | | | 20 times of motor inertia | | |
| Rated power rate | [kW/s] | 5.57 | 10.52 | 23.80 | 8.92 | 22.26 | 50.65 |
| Speed/Position Detector | Standard | Incremental 2048[P/R] 15Pin | | | Incremental 2500[P/R] 15Pin | | |
| | Option | Incremental 2048[P/R] 9Pin | | | Incremental 2500[P/R] 9Pin | | |
| Specification & Features | Structure | Totally enclosed Non ventilated IP55(Excluding the shaft-through section and connectors) | | | | | |
| | Rated time | Continuous | | | | | |
| | Ambient temp | 0~+40[°C] | | | | | |
| | Ambient humidity | 20~80[%](Avoid condensation) | | | | | |
| | Atmosphere | Avoid direct sunlight, no corrosive gas, inflammable gas, oil mist, or dust | | | | | |
| | E/V | Elevation/Vibration 49[m/s ²](5G) | | | | | |
| Weight | [kg] | 0.3 | 0.4 | 0.52 | 0.84 | 1.11 | 1.63 |

◆ Speed-Torque characteristics ◆

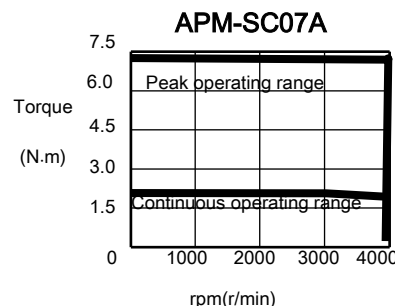
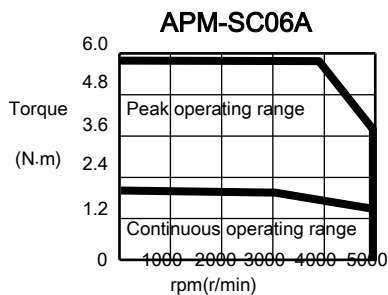
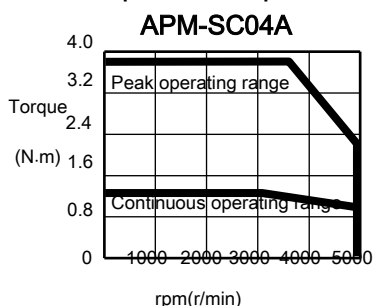


Continuous operating range rpm(r/min) Continuous operating range rpm(r/min) Continuous operating range rpm(r/min)

■ Features

| | | | | |
|------------------------------|--|--|-------|-------|
| Servo Motor Model (APM-) | | SC04A | SC06A | SC07A |
| Applicable (APD-) | | VK04 | VK08 | |
| Rated Output | [kW] | 0.4 | 0.6 | 0.75 |
| Rated Torque | [N·m] | 1.27 | 1.91 | 2.48 |
| | [kgf·cm] | 13.0 | 19.5 | 24.3 |
| Maximum Instantaneous Torque | [N·m] | 3.82 | 5.34 | 7.44 |
| | [kgf·cm] | 39.0 | 54.5 | 72.9 |
| Rated rpm | [r/min] | 3,000 | | |
| Maximum rpm | [r/min] | 5,000 | | 4,000 |
| Inertia | [kg·m ² ×10 ⁻⁴] | 0.674 | 1.092 | 1.509 |
| | [gf·cm·s ²] | 0.687 | 1.114 | 1.539 |
| Allowable load inertia ratio | | 15 times of motor inertia | | |
| Rated power rate | [kW/s] | 23.45 | 32.74 | 38.35 |
| Speed/Position Detector | Standard | Incremental 2,500[P/R] 15Pin | | |
| | Option | Incremental 2,500[P/R] 9Pin | | |
| Specification & Features | Structure | Totally enclosed Non ventilated IP65(Excluding the shaft-through section and connectors) | | |
| | Rated time | Continuous | | |
| | Ambient temp | Operating Temp. ; 0~+40[°C], Storage Temp. ; -20~80[°C] | | |
| | Ambient humidity | 20~80[%](Avoid condensation) | | |
| | Atmosphere | Avoid direct sunlight, no corrosive gas, inflammable gas, oil mist, or dust | | |
| | E/V | Elevation/Vibration 49[m/s ²](5G) | | |
| Weight | [kg] | 1.85 | 2.49 | 3.15 |

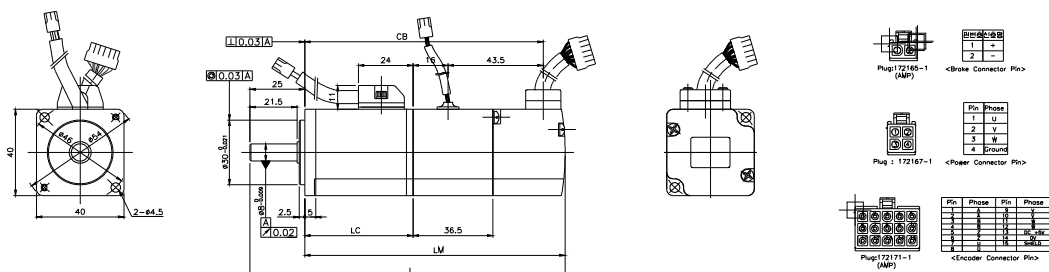
◆ Speed-Torque Characteristics ◆



Chapter6 Product Specification

6.1.2 External Dimensions

◆ APM-SAR3A, APM-SAR5A, APM-SA01A

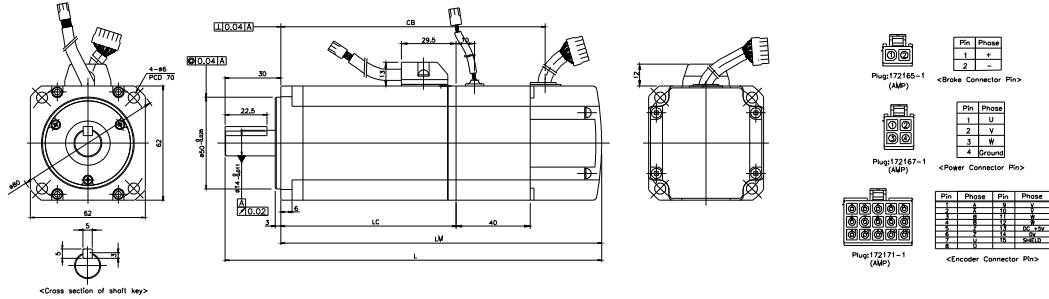


| Model | External Dimension | | | | Weight (Kg) |
|-------|--------------------|-----------|------|-----------|-------------|
| | L | LM | LC | CB | |
| SAR3A | 100.5(137) | 77.5(112) | 42.5 | 65.5(102) | 0.3(0.65) |
| SAR5A | 107.5(144) | 82.5(119) | 49.5 | 72.5(109) | 0.4(0.75) |
| SA01A | 124.5(161) | 99.5(136) | 66.5 | 89.5(126) | 0.52(0.87) |

Note) 1. Use DC 24V for brake input power supply.

2. The dimension in () is for brake-attached type.

◆ APM-SB01A, APM-SB02A, APM-SB04A

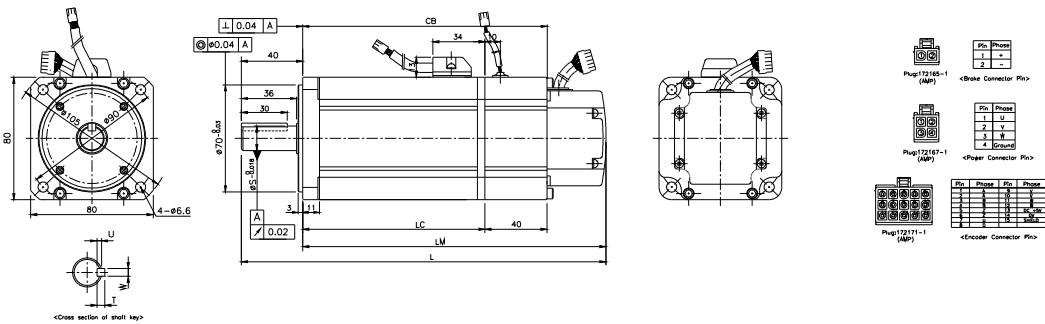


| Model | External Dimension | | | | Weight(Kg) |
|-------|--------------------|--------------|------|--------------|------------|
| | L | LM | LC | CB | |
| SB01A | 120.5(160.5) | 90.5(130.5) | 52.5 | 60.5(100.5) | 0.84(1.21) |
| SB02A | 134.5(174.5) | 104.5(144.5) | 66.5 | 74.5(114.5) | 1.11(1.49) |
| SB04A | 162.5(202.5) | 132.5(172.5) | 94.5 | 102.5(142.5) | 1.64(2.05) |

Note) 1. Use DC 24V for brake input power supply.

2. The dimension in () is for brake-attached type.

◆ APM-SC04A, APM-SC06A, APM-SC07A



| Model | External Dimension | | | | | Weight(Kg) |
|-------|--------------------|----------|-----|------------|----|------------|
| | L | LM | LC | CB | S | |
| SC04A | 158(198) | 118(158) | 79 | 86.5(127) | 14 | 1.85(2.45) |
| SC06A | 178(218) | 138(178) | 99 | 106.5(147) | 16 | 2.49(3.09) |
| SC07A | 198(238) | 158(198) | 119 | 126.5(167) | 16 | 3.15(3.75) |

Note) 1. Use DC 24V for brake input power supply.

2. The dimension in () is for brake-attached type.

Chapter6 Product Specification

6.2 Servo Drive

6.2.1 Features

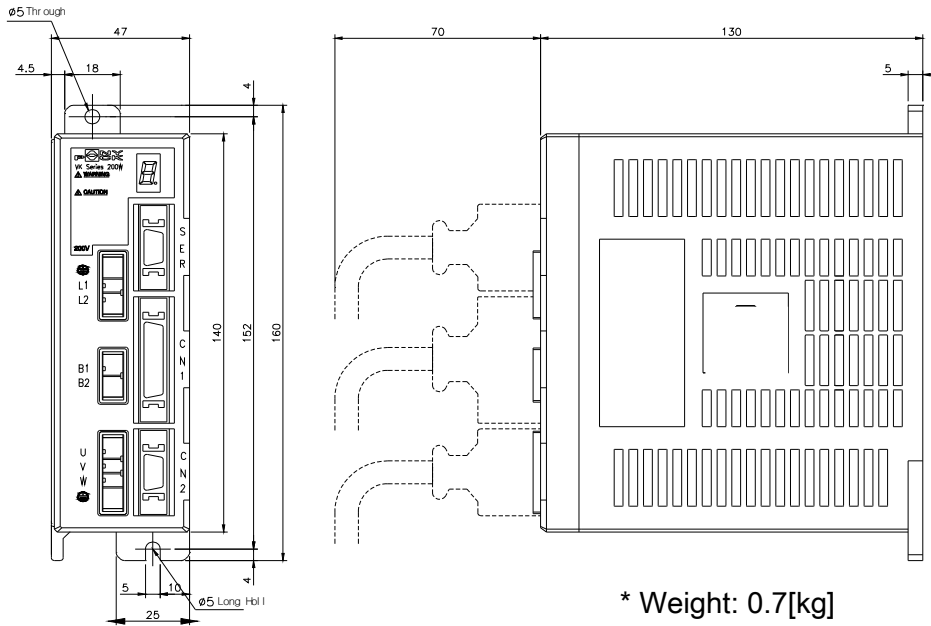
| Item | | Model | VKR5N | VK01N | VK02N | VK04N | VK08N |
|-----------------------|-------------------------|---|-------|-------|-------------------|-------|-------|
| Power Supply | Power supply | Signal Phase AC 200 ~ 230[V] +10[%]-15[%] | | | | | |
| | Frequency | 50 ~ 60 [Hz] ± 5 [%] | | | | | |
| Applicable Motor | Voltage Current | 3 Phase Sine Wave PWM driven AC Servo Motor | | | | | |
| | Rated Current[A] | 1.2 | 1.65 | 1.65 | 2.9 | 3.9 | |
| | Max. Current[A] | 3.6 | 4.95 | 4.95 | 8.7 | 11.7 | |
| Detector system | | Standard : Incremental 5[V] Line Drive 15Pin 2,500 [P/R] * SA Series Motor : 2,048[P/R] | | | | | |
| Position Control Mode | Input frequency | Line Drive 500[kpps], Open Collector 200[kpps] | | | | | |
| | Input pulse Type | A+B Phase, Forward/reverse Pulse, Direction + Pulse[Line Driver, Open Collector] | | | | | |
| | Input Pulse | 5[V] Line Driver, 24[V] Open Collector | | | | | |
| Speed Control Mode | Range of Speed range | 1:10,000 | | | | | |
| | Accel/Decel Time | Linear or "S" Shape Accel/Decel, 0~10,000[ms], 1[ms] Units can be set separately | | | | | |
| | Inside command Speed | 3 Different Speeds Setting | | | | | |
| Setting | Communication | Standard : RS232C, Option : RS485 (Max. 16 Axis) | | | | | |
| | Option | External Handy Loader | | | | | |
| Embedded Function | Generative Braking | Standard Embedded[Operated at Servo Alarm or Servo OFF] | | | | | |
| | Regenerative Braking | Option | | | Standard Embedded | | |
| | Electronic gear ratio | 99,999/99,999 times of Command Pulse is possible | | | | | |
| | Feedback pulse Dividing | 1/16 Select dividing is possible, Line driver A/B/Z Phase, Open Collector Z Phase Output | | | | | |
| | Contacts Logic | Selecting A/B Contacts(Input/Output Contacts) function | | | | | |
| Monitor | Digital Display | 1 Line-7 Segments LED | | | | | |
| | Analog Output | DC -5[V] ~ +5[V], 2 Channels[Speed, torque select] | | | | | |
| Protect Function | Items Displayed | Over current, Over load, Over voltage, Voltage shortage, Over speed, Wrong wiring, Encoder error, Position following error, Parameter reading/writing/initialization error. | | | | | |
| | Memory Capacity | Memorize total 20 times of alarms including the current alarm occurred | | | | | |

Chapter6 Product Specification

| | | |
|---------------------|-------------|--|
| Ambient Environment | Temperature | 0 ~ 50[°C] |
| | Humidity | Less than 90[%](Avoid Condensation) |
| | Environment | Indoor, No corrosive gas, Inflammable gas and fluid, Oil mist, or dust |

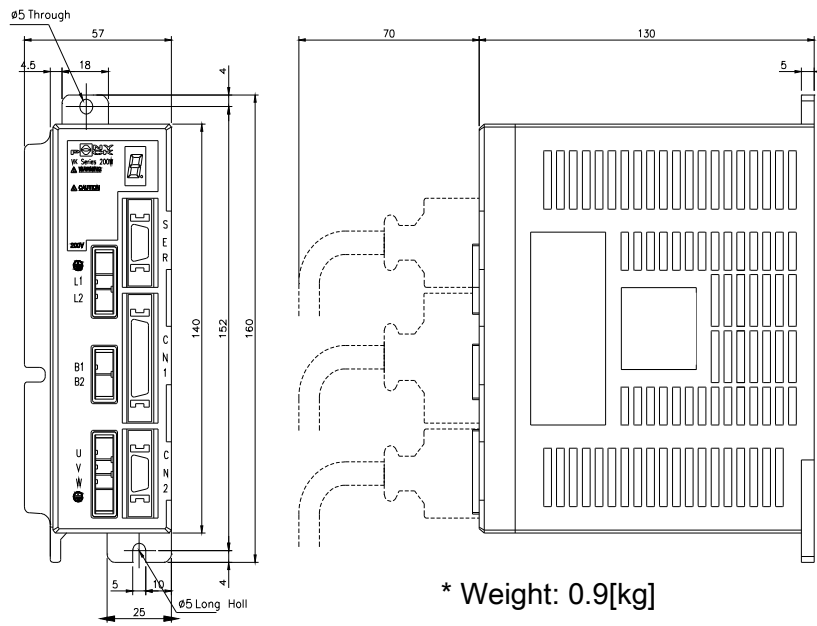
6.2.2 External Dimension

◆ APD-VKR5N, APD-VK01N, APD-VK02N



◆ APD-VK04N, APD-VK08N

Chapter6 Product Specification

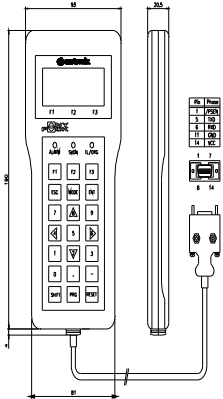


6.3 Option and Peripherals

- Option specification(Handy Loader)

| Classification | Product name | Model | Applicable Drive | Specification |
|----------------|--------------|-------|------------------|---------------|
|----------------|--------------|-------|------------------|---------------|

Chapter6 Product Specification

| | | | | |
|--------------|--------------|-----------|-----------------------------|--|
| Handy Loader | Handy Loader | APC-HD1 A | VK,VS,VP (All available) |  <p>1. Standard Cable Length : 2[m] (Other length available upon request)</p> |
|--------------|--------------|-----------|-----------------------------|--|

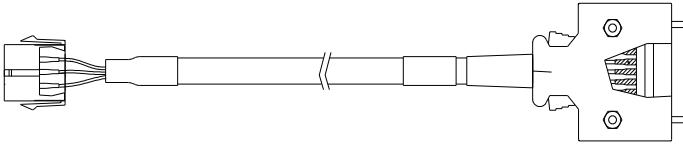
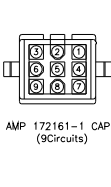
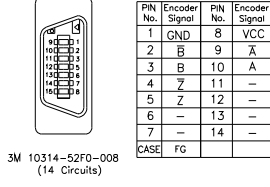
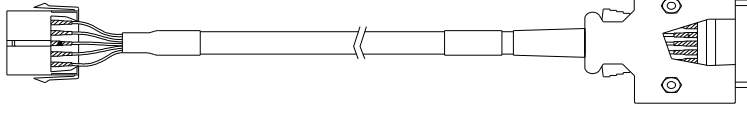
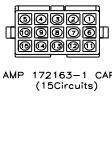
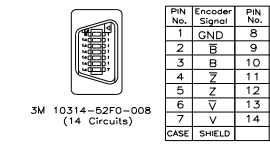
Note1) of Model no. indicates the kind and length of cable. And the declaration is as below.

| | | | | |
|-----------------|----|----|----|----|
| Cable Length(m) | 2 | 3 | 4 | 5 |
| Declaration | 20 | 30 | 40 | 50 |

■ Option(Cable)

| Classification | Product name | Model(Note1) | Applicable motor | Specification |
|----------------|-----------------------|--------------|-----------------------------------|--|
| For Signal | Encoder Cable(9 Pins) | E APC VK9 | All models of APM-SA APM-SB | Motor Side Connector Drive Side connector (CN2) |

Chapter6 Product Specification

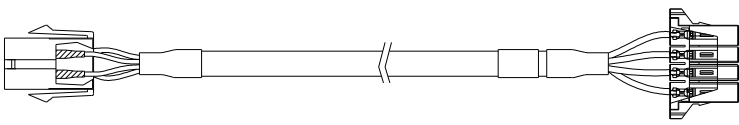

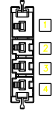
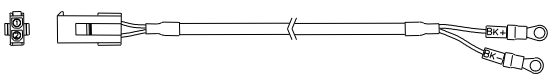
| | | | APM-SC Series |   <table border="1"> <thead> <tr> <th>PIN No.</th> <th>Encoder Signal</th> </tr> </thead> <tbody> <tr><td>1</td><td>A</td></tr> <tr><td>2</td><td>\bar{A}</td></tr> <tr><td>3</td><td>B</td></tr> <tr><td>4</td><td>\bar{B}</td></tr> <tr><td>5</td><td>Z</td></tr> <tr><td>6</td><td>\bar{Z}</td></tr> <tr><td>7</td><td>VCC</td></tr> <tr><td>8</td><td>GND</td></tr> <tr><td>9</td><td>FG</td></tr> </tbody> </table>  <table border="1"> <thead> <tr> <th>PIN No.</th> <th>Encoder Signal</th> <th>PIN No.</th> <th>Encoder Signal</th> </tr> </thead> <tbody> <tr><td>1</td><td>GND</td><td>8</td><td>VCC</td></tr> <tr><td>2</td><td>B</td><td>9</td><td>\bar{A}</td></tr> <tr><td>3</td><td>B</td><td>10</td><td>A</td></tr> <tr><td>4</td><td>Z</td><td>11</td><td>—</td></tr> <tr><td>5</td><td>Z</td><td>12</td><td>—</td></tr> <tr><td>6</td><td>—</td><td>13</td><td>—</td></tr> <tr><td>7</td><td>—</td><td>14</td><td>—</td></tr> <tr><td>CASE</td><td>FG</td><td></td><td></td></tr> </tbody> </table> <ol style="list-style-type: none"> Motor side connector <ol style="list-style-type: none"> CAP(9 Pins) : 172161-1(Made by AMP) SOCKET : 170361-1(Made by AMP) Drive side connector(CN2) <ol style="list-style-type: none"> CASE : 10314-52FO-008(Made by 3M) CONNECTOR : 10114-3000VE(Made by 3M) <p>Cable : 4Px0.2SQ(AWG24)</p> | PIN No. | Encoder Signal | 1 | A | 2 | \bar{A} | 3 | B | 4 | \bar{B} | 5 | Z | 6 | \bar{Z} | 7 | VCC | 8 | GND | 9 | FG | PIN No. | Encoder Signal | PIN No. | Encoder Signal | 1 | GND | 8 | VCC | 2 | B | 9 | \bar{A} | 3 | B | 10 | A | 4 | Z | 11 | — | 5 | Z | 12 | — | 6 | — | 13 | — | 7 | — | 14 | — | CASE | FG | | | | | | | | | | | | | | | | | | |
|------------|------------------------|------------|---|---|---------|----------------|---------|----------------|---|-----------|---|---|---|-----------|----|-----------|---|-----------|----|-----|---|-----|----|-----------|---------|----------------|---------|----------------|---|-----|----|-----|---|---|----|-----------|---|-----------|----|---|---------|----------------|---------|----------------|---|-----|----|----|---|---|----|-----------|---|---|----|---|------|----|----|---|---|---|----|---|---|-----------|----|-----------|---|---|----|---|------|--------|--|--|
| PIN No. | Encoder Signal | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | A | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | \bar{A} | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | B | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | \bar{B} | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | Z | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6 | \bar{Z} | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7 | VCC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 8 | GND | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9 | FG | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| PIN No. | Encoder Signal | PIN No. | Encoder Signal | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | GND | 8 | VCC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | B | 9 | \bar{A} | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | B | 10 | A | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | Z | 11 | — | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | Z | 12 | — | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6 | — | 13 | — | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7 | — | 14 | — | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CASE | FG | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| For Signal | Encoder Cable (15Pins) | E APC-VK15 | All models of APM-SA APM-SB APM-SC Series | <p>Motor side connector</p>   <table border="1"> <thead> <tr> <th>PIN No.</th> <th>Encoder Signal</th> <th>PIN No.</th> <th>Encoder Signal</th> </tr> </thead> <tbody> <tr><td>1</td><td>A</td><td>9</td><td>V</td></tr> <tr><td>2</td><td>\bar{A}</td><td>10</td><td>\bar{V}</td></tr> <tr><td>3</td><td>B</td><td>11</td><td>W</td></tr> <tr><td>4</td><td>B</td><td>12</td><td>\bar{W}</td></tr> <tr><td>5</td><td>Z</td><td>13</td><td>+5V</td></tr> <tr><td>6</td><td>Z</td><td>14</td><td>OV</td></tr> <tr><td>7</td><td>U</td><td>15</td><td>SHIELD</td></tr> <tr><td>8</td><td>\bar{U}</td><td></td><td></td></tr> </tbody> </table>  <table border="1"> <thead> <tr> <th>PIN No.</th> <th>Encoder Signal</th> <th>PIN No.</th> <th>Encoder Signal</th> </tr> </thead> <tbody> <tr><td>1</td><td>GND</td><td>8</td><td>5V</td></tr> <tr><td>2</td><td>B</td><td>9</td><td>\bar{A}</td></tr> <tr><td>3</td><td>B</td><td>10</td><td>A</td></tr> <tr><td>4</td><td>Z</td><td>11</td><td>U</td></tr> <tr><td>5</td><td>Z</td><td>12</td><td>U</td></tr> <tr><td>6</td><td>\bar{V}</td><td>13</td><td>\bar{W}</td></tr> <tr><td>7</td><td>V</td><td>14</td><td>W</td></tr> <tr><td>CASE</td><td>SHIELD</td><td></td><td></td></tr> </tbody> </table> <ol style="list-style-type: none"> Motor side connector <ol style="list-style-type: none"> CAP(15 Pins) : 172163-1(Made by AMP) SOCKET : 170361-1(Made by AMP) Drive side connector(CN2) <ol style="list-style-type: none"> CASE : 10314-52FO-008(Made by 3M) CONNECTOR: 10114-3000VE(Made by 3M) Cable : 7Px0.2SQ(AWG24) | PIN No. | Encoder Signal | PIN No. | Encoder Signal | 1 | A | 9 | V | 2 | \bar{A} | 10 | \bar{V} | 3 | B | 11 | W | 4 | B | 12 | \bar{W} | 5 | Z | 13 | +5V | 6 | Z | 14 | OV | 7 | U | 15 | SHIELD | 8 | \bar{U} | | | PIN No. | Encoder Signal | PIN No. | Encoder Signal | 1 | GND | 8 | 5V | 2 | B | 9 | \bar{A} | 3 | B | 10 | A | 4 | Z | 11 | U | 5 | Z | 12 | U | 6 | \bar{V} | 13 | \bar{W} | 7 | V | 14 | W | CASE | SHIELD | | |
| PIN No. | Encoder Signal | PIN No. | Encoder Signal | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | A | 9 | V | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | \bar{A} | 10 | \bar{V} | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | B | 11 | W | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | B | 12 | \bar{W} | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | Z | 13 | +5V | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6 | Z | 14 | OV | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7 | U | 15 | SHIELD | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 8 | \bar{U} | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| PIN No. | Encoder Signal | PIN No. | Encoder Signal | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | GND | 8 | 5V | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | B | 9 | \bar{A} | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | B | 10 | A | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | Z | 11 | U | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | Z | 12 | U | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6 | \bar{V} | 13 | \bar{W} | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7 | V | 14 | W | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CASE | SHIELD | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

Note 1) of Model No. indicates the kind and length of cable, and the declaration is as below.

| Cable Length(m) | 3 | 5 | 10 | 20 |
|-----------------|-----|-----|-----|-----|
| Robotic Cable | F03 | F05 | F10 | F20 |
| General Cable | N03 | N05 | N10 | N20 |

| Classification | Product name | Model(Note1) | Applicable motor | Specification |
|------------------|--------------|--------------|----------------------|---|
| For Power Supply | Power Cable | APC-P VK | All models of APM-SA | Motor side connector Drive side connector |

Chapter6 Product Specification

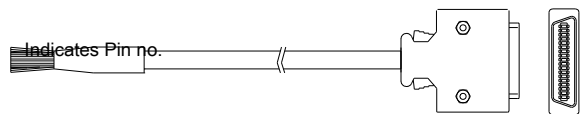
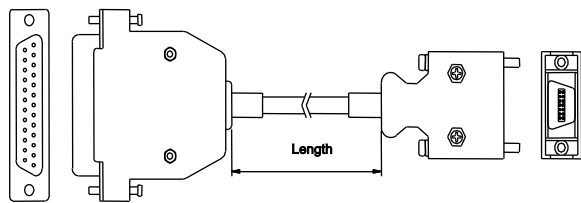
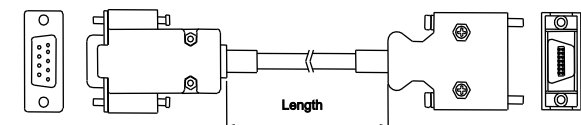
| | | | APM-SB APM-SC Series |   <table border="1" data-bbox="861 459 997 548"> <thead> <tr> <th>Contents</th> <th>Signal</th> <th>PIN No.</th> </tr> </thead> <tbody> <tr> <td rowspan="4">LEAD WIRE</td> <td>U</td> <td>1</td> </tr> <tr> <td>V</td> <td>2</td> </tr> <tr> <td>W</td> <td>3</td> </tr> <tr> <td>Ground</td> <td>Ground</td> <td>4</td> </tr> </tbody> </table>  <table border="1" data-bbox="1236 448 1340 548"> <thead> <tr> <th>Signal</th> <th>PIN No.</th> </tr> </thead> <tbody> <tr> <td>U</td> <td>1</td> </tr> <tr> <td>V</td> <td>2</td> </tr> <tr> <td>W</td> <td>3</td> </tr> <tr> <td>Ground</td> <td>4</td> </tr> </tbody> </table> <ol style="list-style-type: none"> Motor side connector <ol style="list-style-type: none"> CAP(4 Pins) : 172159-1(Made by AMP) SOCKET : 170362-1(Made by AMP) Drive side connector(U,V,W,FG) <ol style="list-style-type: none"> Housing : 1-178128-4(Made by AMP) Socket : 175218(Made by AMP) Cable : 4Cx0.75SQ(AWG18) | Contents | Signal | PIN No. | LEAD WIRE | U | 1 | V | 2 | W | 3 | Ground | Ground | 4 | Signal | PIN No. | U | 1 | V | 2 | W | 3 | Ground | 4 |
|------------------|-------------|----------|---|---|----------|--------|---------|-----------|---|---|---|---|---|---|--------|--------|---|--------|---------|---|---|---|---|---|---|--------|---|
| Contents | Signal | PIN No. | | | | | | | | | | | | | | | | | | | | | | | | | |
| LEAD WIRE | U | 1 | | | | | | | | | | | | | | | | | | | | | | | | | |
| | V | 2 | | | | | | | | | | | | | | | | | | | | | | | | | |
| | W | 3 | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Ground | Ground | 4 | | | | | | | | | | | | | | | | | | | | | | | | |
| Signal | PIN No. | | | | | | | | | | | | | | | | | | | | | | | | | | |
| U | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| V | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| W | 3 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Ground | 4 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| For Power Supply | Brake Cable | APC-P KB | All models of APM-SA APM-SB APM-SC Series |  <ol style="list-style-type: none"> Motor side connector <ol style="list-style-type: none"> CAP(2 Pins) : 172157-1(Made by AMP) SOCKET : 170362-1(Made by AMP) For power supply of Brake <ol style="list-style-type: none"> Connection terminal : 1.25x3(KET GP110012) Cable : 2Cx0.75SQ(AWG18) | | | | | | | | | | | | | | | | | | | | | | | |

Note 1) of Model No. indicates the kind and length of cable, and the declaration is as below.

| Cable Length(m) | 3 | 5 | 10 | 20 |
|-----------------|-----|-----|-----|-----|
| Robotic Cable | F03 | F05 | F10 | F20 |
| General Cable | N03 | N05 | N10 | N20 |

| Classification | Product name | Model(Note1) | Applicable motor | Specification |
|----------------|--------------|-------------------------|-----------------------------------|---|
| For Signal | CN1 Cable | CN1 ^{APC} -VKA | All models of APD-VK Series | [Upper controller] [Drive connector CN1] |

Chapter6 Product Specification

| | | | | |
|------------|---------------------------|-----------|---|--|
| | | | |  <p>1. Drive side Connector(CN1)</p> <p>1) CASE : 10336-52F0-008(Made by 3M)</p> <p>2) CONNECTOR : 10136-3000VE(Made by 3M)</p> <p>3) CABLE : ROW-SB0.1Cx36C(AWG 28)</p> |
| For Signal | Software Download Cable | APC-CN3-S | All models of APD-VK APD-VS APD-VP Series | <p>[PC-Parallel Port] [Servo Drive SER]</p>  <p>1. Standard Cable Length : 2[m]</p> |
| For Signal | RS232 Communication Cable | APC-CN3-R | All models of APD-VK APD-VS APD-VP Series | <p>[PC-Serial Port] [Servo Drive SER]</p>  <p>1. Standard Cable Length: 2[m]</p> |

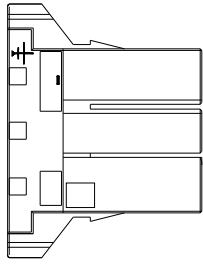
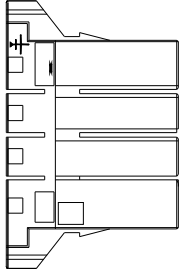
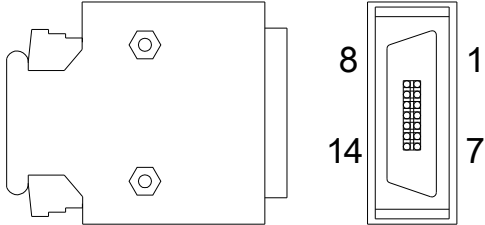
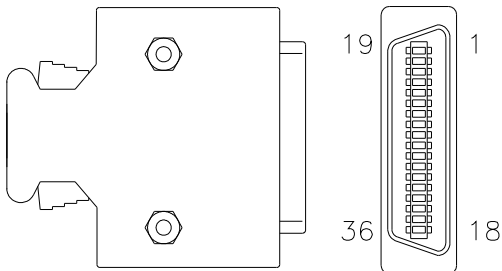
Note 1) of Model No. indicates the kind and length of cable, and the declaration is as below,

| | | | | |
|--------------------|----|----|----|----|
| Length of Cable(m) | 1 | 2 | 3 | 5 |
| Declaration | 01 | 02 | 03 | 05 |

■ Option(Connector)

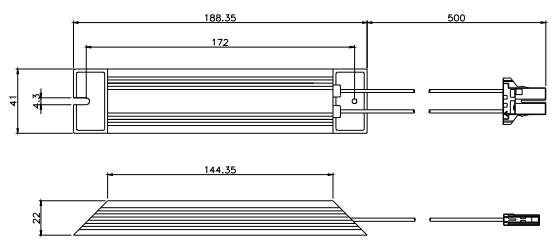
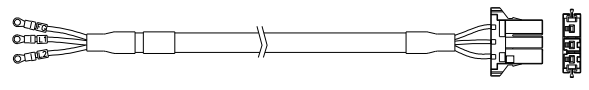
| Classification | Product name | Model | Applicable motor | Specification |
|----------------|--------------|-------|------------------|---------------|
|----------------|--------------|-------|------------------|---------------|

Chapter6 Product Specification

| | | | | |
|-----------|---------------------------------------|--------------------|--|--|
| <p>CN</p> | <p>Drive Power Connector 3Pin</p> | <p>APC-CNACVKA</p> | <p>All models of APD-VK Series</p> |  <p>1) CASE : 1-178128-3 (Made by AMP) 2) Connector Pin : 175218 (Made by AMP)</p> |
| <p>CN</p> | <p>Power Connector 4Pin</p> | <p>APC-CNMPVKA</p> | <p>All models of APD-VK Series</p> |  <p>1) CASE: 1-178128-4 (Made by AMP) 2) Connector Pin: 175218 (Made by AMP)</p> |
| <p>CN</p> | <p>SER Connector (CN2)</p> | <p>APC-CN3NNA</p> | <p>All models of APD-VK APD-VS APD-VP Series</p> |  <p>1) CASE : 10314-52F0-008(Made by 3M) 2) CONNECTOR : 10114-3000VE(Made by 3M)</p> |
| <p>CN</p> | <p>CN1 Connector</p> | <p>APC-CN1NNA</p> | <p>All models of APD-VK Series</p> |  <p>1) CASE : 10336-52F0-008(Made by 3M) 2) CONNECTOR : 10136-3000VE(Made by 3M)</p> |

Chapter6 Product Specification

■ Option(Others)

| Classification | Product name | Model(Note1) | Applicable motor | Specification |
|------------------|--------------------|--------------|-----------------------------|---|
| Resistance | Braking Resistance | APC-140R40VK | APD-VK04 VK08 |  |
| For Power Supply | Drive power cable | APC-A VK | All models of APD-VK SERIES |  <p>1) Drive side connector (FG,L1,L2) - CASE : 1-178128-3 (Made by AMP) - Connector : 175218 (Made by AMP)</p> <p>2) Ring terminal : GP110003 (Made by KET)</p> <p>3) Cable : 3Cx1.25SQ(AWG16)</p> |

Note 1) of Model No. indicates the kind and length of cable, and the declaration is as below,

| Cable Length(m) | 1 | 3 | 5 |
|-----------------|-----|-----|-----|
| Robotic Cable | F01 | F03 | F05 |
| General Cable | N01 | N03 | N05 |