TECHNICAL BULLETIN<br>[ $1 / 10$ ]<br>FA-A-0271-A

## Transition to made-to-order production and production discontinuation of the CC-Link Positioning Modules

■Date of Issue
December 2018
■Relevant Models
AJ65BT-D75P2-S3, A1SD75-C01H, A1SD75-C01HA

Thank you for your continued support of Mitsubishi Electric programmable controllers.
Production of the following CC-Link positioning modules and related products (conversion cables for connection with peripherals) will be discontinued.

## 1 Models to be discontinued

| Models to be discontinued |  | Alternative models | Remarks |
| :--- | :--- | :--- | :--- | :--- | :--- |
| Product | Model | Product | Model |

## 2 Schedule

- Transition to made-to-order: March 31, 2019
- Order acceptance: Through February 15, 2021
- Production discontinuation: March 31, 2021


## 3 Reason for discontinuation

Some main parts of the above products are now obsolete, and we will have difficulty to maintain our production system.

## 4 Repair support

Repair support period: Until March 31, 2028 (for seven years after the discontinuation of production)

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## 5 Recommendable proposals

The delivery time for the made-to-order production is 3.5 months.
Please allow for this time and purchase the models to be discontinued early enough.
For detailed delivery schedule, please contact a Mitsubishi Electric branch office or agency.

## 6 Comparison of specifications for the discontinued and alternative models

### 6.1 FX5UC-32MT/D, FX5U-32MT/DS

| Model to be discontinued |  | Alternative models |  |  |
| :---: | :---: | :---: | :---: | :---: |
| Product ${ }^{\text {a }}$ Model |  |  |  |  |
| CC-Link positioning module | AJ65BT-D75P2-S3 | - FX5UC-32MT/D (FX5UC CPU module) <br> - FX5-CCL-MS (CC-Link system master/intelligent device module) <br> - FX5-CNV-IFC (connector conversion module) |  |  |
|  |  | - FX5U-32MT/DS (FX5U CPU module) <br> - FX5-CCL-MS (CC-Link system master/intelligent device module) |  |  |
| Performance specifications |  |  |  |  |
| $\bigcirc$ : Compatible, $\triangle$ : Check required, $\times$ : Incompatible |  |  |  |  |
| Item | AJ65BT-D75P2-S3 |  | FX5UC-32MT/D, FX5U-32MT/DS | Compati bility |
| No. of control axes | 2 axes |  | ■CW/CCW mode <br> 2 axes <br> ■PULSE/SIGN mode <br> 4 axes | $\bigcirc$ |
| Interpolation function | 2-axis direct interpolation |  | Simple linear interpolation operation by 2-axis simultaneous start | $\triangle$ |
|  | 2-axis circular interpolation |  | None | $\times$ |
| Control method | PTP (Point To Point) control |  | PTP (Point To Point) control | $\bigcirc$ |
|  | Speed control |  | Speed control | $\bigcirc$ |
|  | Speed/position changeover control |  | Interrupt 1-speed positioning | $\triangle$ |
|  | Path control (Both line and arc can be set.) |  | None | $\times$ |
| Control unit | mm , inch, degree, pulse |  | mm , inch, degree, pulse | $\bigcirc$ |
| Positioning data | 600 data/axis setting possible |  | Table operation (can be set in GX Works3.) 100 data/axis | $\triangle$ |
| Backup | Parameters and positioning data can be saved to flash ROM. |  | Parameters and positioning data can be saved to flash ROM. | $\bigcirc$ |


| Item |  | AJ65BT-D75P2-S3 | FX5UC-32MT/D, FX5U-32MT/DS | Compati bility |
| :---: | :---: | :---: | :---: | :---: |
| Positioning | Positioning range (Normal mode) | ■Absolute method <br> - 214748364.8 to 214748364.7 ( $\mu \mathrm{m}$ ) <br> - 21474.83648 to 21474.83647 (inch) <br> - 0 to 359.99999 (degree) <br> - 2147483648 to 2147483647 (pulse) | -Absolute method <br> - -2147483648 to 2147483647 ( $\mu \mathrm{m}$ ) <br> - 2147483648 to 2147483647 ( 0.0001 inch) <br> - 2147483648 to 2147483647 (mdegree) <br> - -2147483648 to 2147483647 (pulse) | $\bigcirc$ |
|  |  | - Incremental method <br> - 214748364.8 to 214748364.7 ( $\mu \mathrm{m}$ ) <br> - -21474.83648 to 21474.83647 (inch) <br> - 21474.83648 to 21474.83647 (degree) <br> - 2147483648 to 2147483647 (pulse) | - Incremental method <br> - -2147483648 to 2147483647 ( $\mu \mathrm{m}$ ) <br> - -2147483648 to 2147483647 ( 0.0001 inch) <br> - -2147483648 to 2147483647 (mdegree) <br> - 2147483648 to 2147483647 (pulse) | $\bigcirc$ |
|  | Speed command | - 0.01 to $6000000.00(\mathrm{~mm} / \mathrm{min})$ <br> - 0.001 to 600000.000 (inch $/ \mathrm{min}$ ) <br> - 0.001 to 600000.000 (degree $/ \mathrm{min}$ ) <br> - 1 to 1000000 (pulse/s) | - 1 to 2147483647 (cm/min) <br> - 1 to 2147483647 (inch/min) <br> - 1 to 2147483647 ( 10 degree/min) <br> - 1 to 200000 (pulse/s) | $\triangle$ |
|  | Acceleration/ deceleration process | Automatic trapezoidal acceleration/deceleration | Automatic trapezoidal acceleration/deceleration | $\bigcirc$ |
|  |  | S-curve acceleration/deceleration | None | $\times$ |
|  | Acceleration/ deceleration time | Acceleration/deceleration time can be changed. Four patterns each can be set for acceleration time and deceleration time. <br> ■Setting range <br> 1 to 65535 (ms), 1 to 8388608 (ms) | Acceleration/deceleration time can be changed. <br> ■Setting range <br> 0 to 32767 (ms) | $\triangle$ |
|  | Sudden stop deceleration time | Can be changed. | None | $\times$ |
|  | Start time | 20 ms or less (excluding link scan time) | ■When using an external start signal $50 \mu \mathrm{~s}$ or less <br> ■Interpolation Operation $300 \mu \mathrm{~s}$ or less | $\bigcirc$ |
| Positioning function external connection | Max. output pulse | ■When connected to differential driver 400kpps <br> ■When connected to open collector 200kpps | ■When connected to differential driver Not supported ■When connected to open collector 200kpps | $\times$ |
|  | Max. connection distance between servos | ■When connected to differential driver 10 m <br> ■When connected to open collector $2 m$ | ■When connected to differential driver <br> Not supported <br> ■When connected to open collector According to the electrical characteristics of input/ output signal | $\triangle$ |
| CC-Link | CC-Link station type | Intelligent device station | Intelligent device station | $\bigcirc$ |
|  | Number of occupied stations | 4 stations (RX/RY: 128 points each, RWr/RWw: 16 points each) | 1 to 4 stations (selectable) | $\bigcirc$ |
|  | Applicable crimping terminal | RAV1.25-3.5, RAV2-3.5 (bare crimp terminal) M3.5 terminal screw | - FV1.25-B3A (bare crimp spade terminal) M3 terminal screw <br> - FV2-MS3 (bare crimp ring terminal) M3 terminal screw | $\bigcirc$ |
| Module mounting |  | - Mounting using a DIN rail <br> - Direct mounting (screw: $\mathrm{M} 4 \times 0.7 \mathrm{~mm}$, length of 16 mm or more) | - Mounting using a DIN rail <br> - Direct mounting (screw: M4) ${ }^{* 1}$ | $\times$ |
| Applicable DIN rail |  | TH35-7.5Fe, TH35-7.5AI, TH35-15Fe (compliant with JIS C 2812) | DIN46277 (35mm width) | $\bigcirc$ |
| Flash ROM write count |  | Maximum 100,000 times | Maximum 20,000 times | $\triangle$ |
| Dielectric withstand voltage |  | 500VAC for 1 minute across power supply/ communication system and external input/output | 500 VAC for 1 minute across power supply and external input/output | $\bigcirc$ |
| Insulation resistance |  | $10 \mathrm{M} \Omega$ or higher at 500VDC insulation resistance tester across power supply/communication system and external input/output | $10 \mathrm{M} \Omega$ or higher at 500 VDC insulation resistance tester | $\bigcirc$ |

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| Item | AJ65BT-D75P2-S3 | FX5UC-32MT/D, FX5U-32MT/DS | Compati <br> bility |  |
| :--- | :--- | :--- | :--- | :--- |
| External power <br> supply | External power <br> supply | 24VDC (20.4 to 26.4VDC) | ■FX5UC-32MT/D <br> $30 \mathrm{~W} / 24 \mathrm{VDC} \mathrm{(20} \mathrm{\%}, \mathrm{-15} \mathrm{\%)} \mathrm{(20.4} \mathrm{to} \mathrm{28.8VDC)}$ | $\triangle$ <br> Internal current <br> consumption <br> (24VDC) |

*1 Only when using FX5U-32MT/DS

## External wiring

| Item |  | AJ65BT-D75P2-S3 | FX5UC-32MT/D | FX5U-32MT/DS |
| :---: | :---: | :---: | :---: | :---: |
| Positioning function external connection | External device connector | - 10136-3000VE (soldered type, accessory) <br> - 10136-6000EL (crimp type, sold separately) | Use a 20 -pin socket (single in line) compliant with MIL-C-83503. <br> -Certified connectors <br> - HU-200S2-001 (housing) <br> - HU-411S, HU-411SA (crimp contact) <br> - FRC2-A020-30S (crimp connector) | - FV1.25-B3A (bare crimp spade terminal) M3 terminal screw <br> - FV-MS3 (bare crimp ring terminal) M3 terminal screw |
|  | Applicable wire size | 10136-3000VE <br> Approx. 0.05 to $0.2 \mathrm{~mm}^{2}$ ( 30 to 24 <br> AWG) <br> 10136-6000EL <br> Approx. $0.08 \mathrm{~mm}^{2}$ (28 AWG) | -HU-200S2-001 or HU-411S <br> $0.3 \mathrm{~mm}^{2}$ (22 AWG) <br> -HU-200S2-001 or HU-411SA <br> $0.5 \mathrm{~mm}^{2}$ (20 AWG) <br> - $\quad$ FRC2-A020-30S <br> $0.1 \mathrm{~mm}^{2}$ (28 AWG) | FFV1.25-B3A <br> Approx. 0.3 to $1.3 \mathrm{~mm}^{2}$ (22 to 16 AWG) <br> FV-MS3 <br> Approx. 1.3 to $2.1 \mathrm{~mm}^{2}$ ( 16 to 14 AWG) |
| External power supply (24VDC) | Applicable crimping terminal | RAV1.25-3.5, RAV2-3.5 (bare crimp terminal) M3.5 terminal screw | For the FRC2-A020-30S provided as an accessory, use the power supply cable. (connection with connectors) | - FV1.25-B3A (bare crimp spade terminal) M3 terminal screw <br> - FV-MS3 (bare crimp ring terminal) M3 terminal screw |
|  | Applicable conductor size | 0.75 to $2.00 \mathrm{~mm}^{2}$ |  | FV1.25-B3A <br> Approx. 0.3 to $1.3 \mathrm{~mm}^{2}$ (22 to 16 AWG) <br> FV-MS3 <br> Approx. 1.3 to $2.1 \mathrm{~mm}^{2}$ ( 16 to 14 AWG) |

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## Functions

$\bigcirc$ : Compatible, $\triangle$ : Check required, $\times$ : Incompatible

| Item |  | AJ65BT-D75P2-S3 |  | FX5UC-32MT/D, FX5U-32MT/DS | Compati |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Main functions | Zero point return control method | Machine zero point return control | Near-point dog method | Near-point dog method | $\bigcirc$ |
|  |  |  | Stopper stop method 1 | None | $\times$ |
|  |  |  | Stopper stop method 2 | Available by program. | $\triangle$ |
|  |  |  | Stopper stop method 3 |  |  |
|  |  |  | Count method 1 |  |  |
|  |  |  | Count method 2 |  |  |
|  |  | High-speed zero point return control |  | High-speed zero point return control | $\bigcirc$ |
|  |  | Data setting method zero point return control |  | None | $\times$ |
|  | Main positioning control | Speed control |  | Speed control | $\bigcirc$ |
|  |  | Linear control (1-axis, 2-axis interpolation) |  | Linear control (1-axis, simple interpolation) | $\triangle$ |
|  |  | Fixed feed control (1-axis, 2-axis) |  | Fixed feed control (1-axis only) | $\triangle$ |
|  |  | 2-axis circular interpolation control |  | None | $\times$ |
|  |  | Speed/position changeover control |  | None | $\times$ |
|  | Advanced positioning control | Simultaneous start |  | Simultaneous start | $\bigcirc$ |
|  |  | Block start (normal start) |  | Available by program. | $\triangle$ |
|  |  | Conditional start |  |  |  |
|  |  | Wait start |  |  |  |
|  |  | Repeated start (FOR loop, FOR condition) |  |  |  |
|  |  | Stop |  |  |  |
|  | Manual control | JOG operation |  | JOG operation | $\bigcirc$ |
|  |  | Manual pulse generator operation: 2 units (1 unit/axis) |  | None | $\times$ |
|  | Other control | JUMP command |  | JUMP command | $\bigcirc$ |
|  |  | Current value change |  | HCMOV/DHCMOV command | $\bigcirc$ |
|  | Operation pattern | Independent positioning control (positioning complete) |  | Independent positioning control (positioning complete) | $\bigcirc$ |
|  |  | Continuous positioning control |  | Continuous positioning control | $\bigcirc$ |
|  |  | Continuous path control |  | None | $\times$ |
| Auxiliary functions | Machine zero point return | Zero point return retry function |  | Dog search function | $\triangle$ |
|  |  | Zero point shift function |  | OPR zero signal count | $\bigcirc$ |
|  | Control compensation | Electronic gear function |  | Electronic gear function | $\bigcirc$ |
|  |  | Backlash compensation function |  | Available by program. | $\triangle$ |
|  |  | Near pass mode function |  | None | $\times$ |
|  | Functions to limit the control | Speed limit function |  | Speed limit function | $\bigcirc$ |
|  |  | Hardware stroke limit function |  | Forward limit and reverse limit | $\triangle$ |
|  |  | Torque limit function |  | None | $\times$ |
|  |  | Software stroke limit function |  | None | $\times$ |
|  | Functions to change the control details | Speed change function |  | Speed change function | $\bigcirc$ |
|  |  | Override function |  | Available by program. | $\triangle$ |
|  |  | Acceleration/deceleration time change function |  | None | $\times$ |
|  |  | Torque change function |  | None | $\times$ |
| Absolute position restoration function |  | Available |  | ABS/DABS command | $\bigcirc$ |

## Precautions at replacement

This section describes precautions when replacing with alternative models.

## ■Wiring

- The applicable wire size and connection method differ.
- The mounting method and external wiring differ by module. (Mounting using a DIN rail, direct mounting, wiring using connectors, etc.)
- The current consumption of the external power supply (24VDC) differs.


## - Positioning function

- Stopper stop method 1 for data setting method zero point return control and machine zero point return control is not available. Please change the operation to high-speed zero point return control or machine zero point return control other than stopper stop method 1.
- Sudden stop deceleration time cannot be changed.
- The setting range of the acceleration/deceleration time becomes smaller. Operation may differ with the same function. Ensure that it does not cause any problems in the system.
- Positioning start time becomes shorter. Ensure that it does not cause any problems in the system.
- Path control is not available.
- Only the simple linear interpolation function is available for the interpolation function.


## -Limit function

The alternative models do not have the following limit functions.

- Torque limit function
- Software stroke limit function

■Operation when a CC-Link communication error occurs
When a communication error occurs during positioning control operation, the operation differs.

| Product | Stop/continuation of positioning control |
| :--- | :--- |
| AJ65BT-D75P2-S3 | Stop |
| FX5UC-32MT/D, FX5U-32MT/DS | Continuation |

When a communication error occurs in FX5UC-32MT/D or FX5U-32MT/DS, use the program to stop the positioning control.

$$
\begin{aligned}
& \text { Point? } \\
& \text { When replacing the model with an alternative one, please contact a Mitsubishi Electric branch office or } \\
& \text { agency. }
\end{aligned}
$$

### 6.2 FX5-20PG-P, FX5-20PG-D

| Model to be discontinued |  | Alternative models |
| :---: | :---: | :---: |
| Product | Model |  |
| CC-Link positioning module | AJ65BT-D75P2-S3 | - FX5-20PG-P (positioning module (open collector output)) <br> - FX5UC-32MT/D (FX5UC CPU module) <br> - FX5-CCL-MS (CC-Link system master/intelligent device module) <br> - FX5-CNV-IFC (connector conversion module) |
|  |  | - FX5-20PG-D (positioning module (differential driver output)) <br> - FX5UC-32MT/D (FX5UC CPU module) <br> - FX5-CCL-MS (CC-Link system master/intelligent device module) <br> - FX5-CNV-IFC (connector conversion module) |

## Performance specifications

$\bigcirc$ : Compatible, $\triangle$ : Check required, $\times$ : Incompatible

| Item |  | AJ65BT-D75P2-S3 | FX5-20PG-P, FX5-20PG-D | Compati bility |
| :---: | :---: | :---: | :---: | :---: |
| No. of control axes |  | 2 axes | 2 axes | $\bigcirc$ |
| Interpolation function |  | 2-axis direct interpolation | 2-axis direct interpolation | $\bigcirc$ |
|  |  | 2-axis circular interpolation | 2-axis circular interpolation | $\bigcirc$ |
| Control method |  | PTP (Point To Point) control | PTP (Point To Point) control | $\bigcirc$ |
|  |  | Speed control | Speed control | $\bigcirc$ |
|  |  | Speed/position changeover control | Speed/position changeover control | $\bigcirc$ |
|  |  | Path control (Line and arc can be set.) | Path control (Line and arc can be set.) | $\bigcirc$ |
| Control unit |  | mm, inch, degree, pulse | mm, inch, degree, pulse | $\bigcirc$ |
| Positioning data |  | 600 data/axis setting possible | 600 data/axis setting possible | $\bigcirc$ |
| Backup |  | Parameters and positioning data can be saved to flash ROM. | Parameters and positioning data can be saved to flash ROM. | $\bigcirc$ |
| Positioning | Positioning range (normal mode) | - Absolute method <br> - 214748364.8 to 214748364.7 ( $\mu \mathrm{m}$ ) <br> - -21474.83648 to 21474.83647 (inch) <br> - 0 to 359.99999 (degree) <br> - 2147483648 to 2147483647 (pulse) | ■Absolute method <br> - 214748364.8 to 214748364.7 ( $\mu \mathrm{m}$ ) <br> - 21474.83648 to 21474.83647 (inch) <br> - 0 to 359.99999 (degree) <br> - 2147483648 to 2147483647 (pulse) | $\bigcirc$ |
|  |  | - Incremental method <br> - -214748364.8 to 214748364.7 ( $\mu \mathrm{m}$ ) <br> - 21474.83648 to 21474.83647 (inch) <br> - 21474.83648 to 21474.83647 (degree) <br> - -2147483648 to 2147483647 (pulse) | - Incremental method <br> - 214748364.8 to 214748364.7 ( $\mu \mathrm{m}$ ) <br> - 21474.83648 to 21474.83647 (inch) <br> - 21474.83648 to 21474.83647 (degree) <br> - -2147483648 to 2147483647 (pulse) | $\bigcirc$ |
|  | Speed command | - 0.01 to $6000000.00(\mathrm{~mm} / \mathrm{min})$ <br> - 0.001 to 600000.000 (inch $/ \mathrm{min}$ ) <br> - 0.001 to 600000.000 (degree $/ \mathrm{min}$ ) <br> - 1 to 1000000 (pulse/s) | - 0.01 to $20000000.00(\mathrm{~mm} / \mathrm{min})$ <br> - 0.001 to 2000000.000 (inch $/ \mathrm{min}$ ) <br> - 0.001 to 3000000.000 (degree $/ \mathrm{min}$ ) <br> - 1 to 5000000 (pulse/s) | $\bigcirc$ |
|  | Acceleration/ deceleration process | Automatic trapezoidal acceleration/ deceleration | Automatic trapezoidal acceleration/ deceleration | $\bigcirc$ |
|  |  | S-curve acceleration/deceleration | S-curve acceleration/deceleration | $\bigcirc$ |
|  | Acceleration/ deceleration time | Acceleration/deceleration time can be changed. <br> Four patterns each can be set for acceleration time and deceleration time. <br> © Setting range 1 to 65535 (ms), 1 to 8388608 (ms) | Acceleration/deceleration time can be changed. <br> Four patterns can be set each for acceleration time and deceleration time. <br> - Setting range <br> 1 to 8388608 (ms) | $\bigcirc$ |
|  | Sudden stop deceleration time | Can be changed. | Can be changed. | $\bigcirc$ |
|  | Start time | 20ms or less (excluding link scan time) | 0.83 ms or less | $\bigcirc$ |

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| Item |  | AJ65BT-D75P2-S3 | FX5-20PG-P, FX5-20PG-D | Compati bility |
| :---: | :---: | :---: | :---: | :---: |
| Positioning function external connection | Max. output pulse | ■When connected to differential driver 400kpps <br> ■When connected to open collector 200kpps | ■When connected to differential driver (FX5-20PG-D) <br> 5Mpps <br> ■When connected to open collector (FX5-20PG-P) <br> 200kpps | $\bigcirc$ |
|  | Max. connection distance between servos | ■When connected to differential driver 10 m <br> ■When connected to open collector 2 m | ■When connected to differential driver (FX5-20PG-D) <br> 10 m <br> ■When connected to open collector (FX5- 20PG-P) <br> 2 m | $\bigcirc$ |
| CC-Link | CC-Link station type | Intelligent device station | Intelligent device station | $\bigcirc$ |
|  | Number of occupied stations | 4 stations (RX/RY: 128 points each, RWr/ RWw: 16 points each) | 1 to 4 stations (selectable) | $\bigcirc$ |
|  | Applicable crimping terminal | RAV1.25-3.5, RAV2-3.5 (bare crimp terminal) M3.5 terminal screw | - FV1.25-B3A (bare crimp spade terminal) M3 terminal screw <br> - FV2-MS3 (bare crimp ring terminal) M3 terminal screw | $\bigcirc$ |
| Module mounting |  | - Mounting using a DIN rail <br> - Direct mounting (screw: M4×0.7mm, length of 16 mm or more) | - Mounting using a DIN rail <br> - Direct mounting (screw: M4) | $\bigcirc$ |
| Applicable DIN rail |  | TH35-7.5Fe, TH35-7.5AI, TH35-15Fe (compliant with JIS C 2812) | DIN46277 (35mm width) | $\bigcirc$ |
| Flash ROM write count |  | Maximum 100,000 times | Maximum 100,000 times | $\bigcirc$ |
| Dielectric withstand voltage |  | 500VAC for 1 minute across power supply/ communication system and external input/ output | 500VAC for 1 minute between all terminals and ground terminal | $\bigcirc$ |
| Insulation resistance |  | $10 \mathrm{M} \Omega$ or higher at 500 VDC insulation resistance tester across power supply/ communication system and external input/ output | $10 \mathrm{M} \Omega$ or higher at 500 VDC insulation resistance tester | $\bigcirc$ |
| External power supply | External power supply | 24VDC (20.4 to 26.4VDC) | 24VDC (20.4 to 28.8VDC) | $\triangle$ |
|  | Internal current consumption (24VDC) | 0.30A | $\begin{aligned} & \text { mFX5-20PG-P } \\ & 120 \mathrm{~mA}^{* 1} \\ & \text { ■FX5-20PG-D } \\ & 165 \mathrm{~mA}^{* 1} \end{aligned}$ | $\triangle$ |

*1 The current consumption of the external power supply is the total of that of the provided modules and peripherals. For the current consumption of the modules that the system configured of, refer to the manuals for each module.

## External wiring

| Item |  | AJ65BT-D75P2-S3 | FX5-20PG-P, FX5-20PG-D |
| :---: | :---: | :---: | :---: |
| Positioning function external connection | External device connector | - 10136-3000VE (soldered type, accessory) <br> - 10136-6000EL (crimp type, sold separately) | A6CON1, A6CON2, A6CON4 (sold separately) |
|  | Applicable wire size | ■10136-3000VE <br> Approx. 0.05 to $0.2 \mathrm{~mm}^{2}$ ( 30 to 24 AWG) <br> ■10136-6000EL <br> Approx. 0.08mm (28 AWG) | -A6CON1 or A6CON4 <br> 0.088 to $0.3 \mathrm{~mm}^{2}$ ( 28 to 22 AWG) stranded wire <br> -A6CON2 <br> 0.088 to $0.24 \mathrm{~mm}^{2}$ ( 28 to 24 AWG) stranded wire |
| External power supply (24VDC) | Applicable crimping terminal | RAV1.25-3.5, RAV2-3.5 (bare crimp terminal) M3.5 terminal screw | Use the power supply cable provided as an accessory. (connection with connectors) |
|  | Applicable conductor size | 0.75 to $2.00 \mathrm{~mm}^{2}$ |  |

## Functions

$\bigcirc$ : Compatible, $\triangle$ : Check required, $\times$ : Incompatible

| Item |  | AJ65BT-D75P2-S3 |  | FX5-20PG-P, FX5-20PG-D | Compati |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Main functions | Zero point return control method | Machine zero point return control | Near-point dog method | Near-point dog method | $\bigcirc$ |
|  |  |  | Stopper stop method 1 | Stopper stop method 1 | $\bigcirc$ |
|  |  |  | Stopper stop method 2 | Stopper stop method 2 | $\bigcirc$ |
|  |  |  | Stopper stop method 3 | Stopper stop method 3 | $\bigcirc$ |
|  |  |  | Count method 1 | Count method 1 | $\bigcirc$ |
|  |  |  | Count method 2 | Count method 2 | $\bigcirc$ |
|  |  | High-speed zero point return control |  | High-speed zero point return control | $\bigcirc$ |
|  |  | Data setting method zero point return control |  | Data setting method zero point return control | $\bigcirc$ |
|  | Main positioning control | Speed control |  | Speed control | $\bigcirc$ |
|  |  | Linear control (1-axis, 2-axis interpolation) |  | Linear control (1-axis, 2-axis interpolation) | $\bigcirc$ |
|  |  | Fixed feed control (1-axis, 2-axis) |  | Fixed feed control (1-axis, 2-axis) | $\bigcirc$ |
|  |  | 2-axis circular interpolation control |  | 2-axis circular interpolation control | $\bigcirc$ |
|  |  | Speed/position changeover control |  | Speed/position changeover control | $\bigcirc$ |
|  | Advanced positioning control | Simultaneous start |  | Simultaneous start | $\bigcirc$ |
|  |  | Block start (normal start) |  | Block start (normal start) | $\bigcirc$ |
|  |  | Conditional start |  | Conditional start | $\bigcirc$ |
|  |  | Wait start |  | Wait start | $\bigcirc$ |
|  |  | Repeated start |  | Repeated start | $\bigcirc$ |
|  |  | Stop |  | Available by program. | $\triangle$ |
|  | Manual control | JOG operation |  | JOG operation | $\bigcirc$ |
|  |  | Manual pulse generator operation: 2 units (1 unit/axis) |  | Manual pulse generator operation: 1 unit | $\triangle$ |
|  | Other control | JUMP command |  | JUMP command | $\bigcirc$ |
|  |  | Current value change |  | Current value change using the HCMOV/ DHCMOV command | $\bigcirc$ |
|  | Operation pattern | Independent positioning control (positioning complete) |  | Independent positioning control (positioning complete) | $\bigcirc$ |
|  |  | Continuous positioning control |  | Continuous positioning control | $\bigcirc$ |
|  |  | Continuous path control |  | Continuous path control | $\bigcirc$ |
| Auxiliary functions | Machine zero point return | Zero point return retry function |  | Zero point return retry function | $\bigcirc$ |
|  |  | Zero point shift function |  | Zero point shift function | $\bigcirc$ |
|  | Control compensation | Electronic gear function |  | Electronic gear function | $\bigcirc$ |
|  |  | Backlash compensation function |  | Backlash compensation function | $\bigcirc$ |
|  |  | Near pass mode function |  | Near pass mode function | $\bigcirc$ |
|  | Functions to limit the control | Speed limit function |  | Speed limit function | $\bigcirc$ |
|  |  | Hardware stroke limit function |  | Hardware stroke limit function | $\bigcirc$ |
|  |  | Torque limit function |  | Torque limit function | $\bigcirc$ |
|  |  | Software stroke limit function |  | Software stroke limit function | $\bigcirc$ |
|  | Functions to change the control details | Speed change function |  | Speed change function | $\bigcirc$ |
|  |  | Override function |  | Override function | $\bigcirc$ |
|  |  | Acceleration/deceleration time change function |  | Acceleration/deceleration time change function | $\bigcirc$ |
|  |  | Torque change function |  | Torque change function | $\bigcirc$ |
| Absolute position restoration function |  | Available |  | Available | $\bigcirc$ |

## Precautions at replacement

This section describes precautions when replacing with alternative models.

## ■Wiring

- The applicable wire size and connection method differ.
- The mounting method and external wiring differ by module. (Mounting using a DIN rail, wiring using connectors, etc)
- The current consumption of the external power supply (24VDC) differs.


## -Positioning function

Positioning start time becomes shorter. Ensure that it does not cause any problems in the system.

## ■Operation when a CC-Link communication error occurs

When a communication error occurs during positioning control operation, the operation differs.

| Product | Stop/continuation of positioning control |
| :--- | :--- |
| AJ65BT-D75P2-S3 | Stop |
| FX5-20PG-P, FX5-20PG-D | Continuation |

When a communication error occurs in FX5-20PG-P or FX5-20PG-D, use the program to stop the positioning control.

## Point?

When replacing the model with an alternative one, please contact a Mitsubishi Electric branch office or agency.

## REVISIONS

| Version | Date of issue | Revision |
| :--- | :--- | :--- |
| A | December 2018 | First edition |
| TRADEMARKS |  |  |

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