

Economical and High-Quality PLC  
**FATEK B1/B1z Series Micro-Programmable Controllers**



# Be impressed with the high quality !



## Features

### Core Technology of the Advanced SoC

With advanced software, hardware techniques and over 20 years experience in the automation industry, FATEK has integrated its own SoC CPU (Systems on Chip), hardware logic solver (HLS), hardware high-speed counter/timer, NC positioning, communication, FLASH, and SRAM into a tiny BGA chip. This is an industry first making FATEK a market leader in micro PLC design!

### Compact and Rugged

Common components are now integrated into the SoC so the processor and I/O board layer can now be manufactured on a single PCB substantially reducing the overall size and increasing the reliability of the B1/B1z series controllers!

### High Quality and High Reliability

With the streamline hardware design and the highly integrated SoC technology, the number of components required in the B1/B1z series PLC is significantly reduced. With the combination of high quality parts, rigorous quality control procedures, FATEK creates a high quality PLC for today's industry.



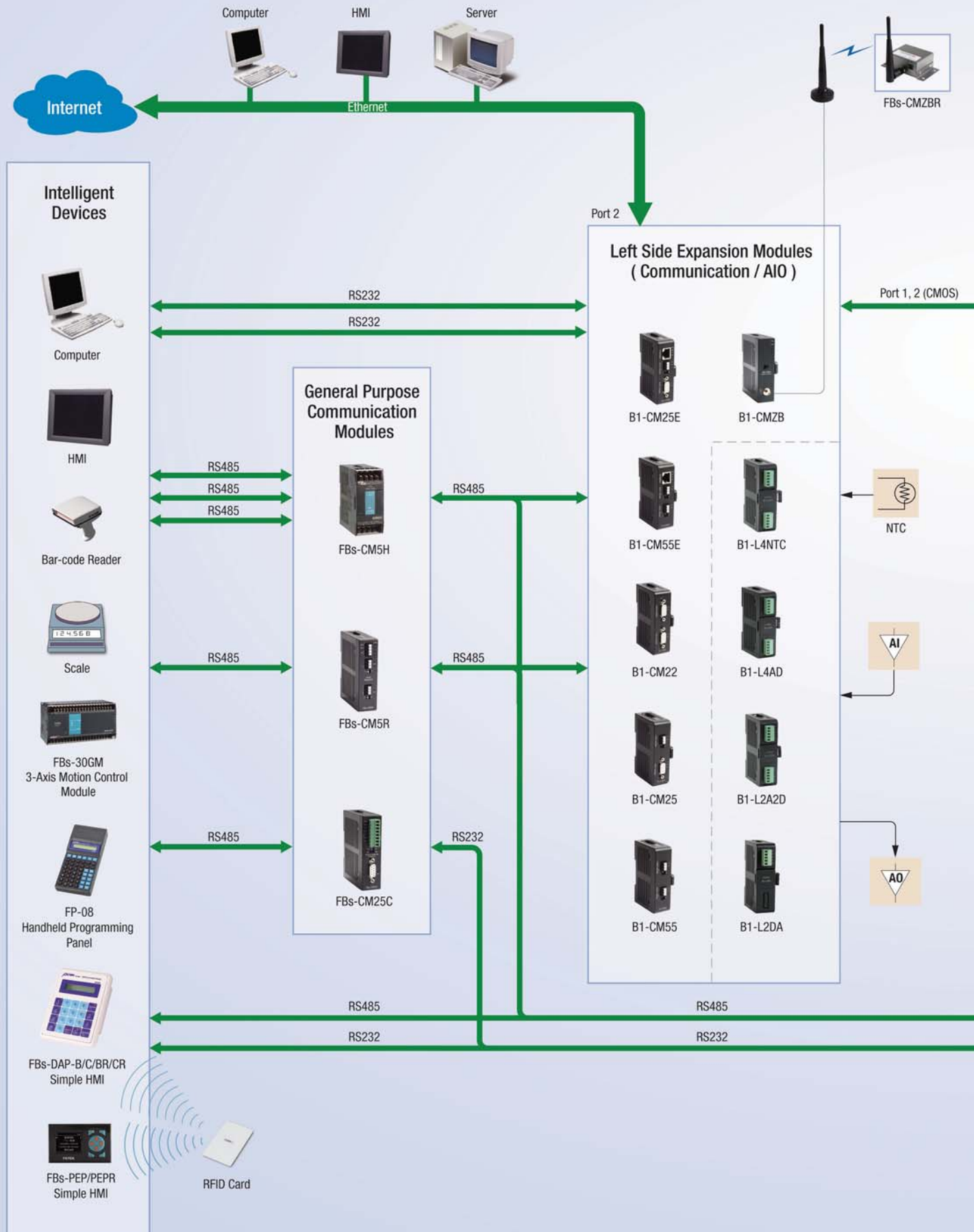
## Competitive Low Price

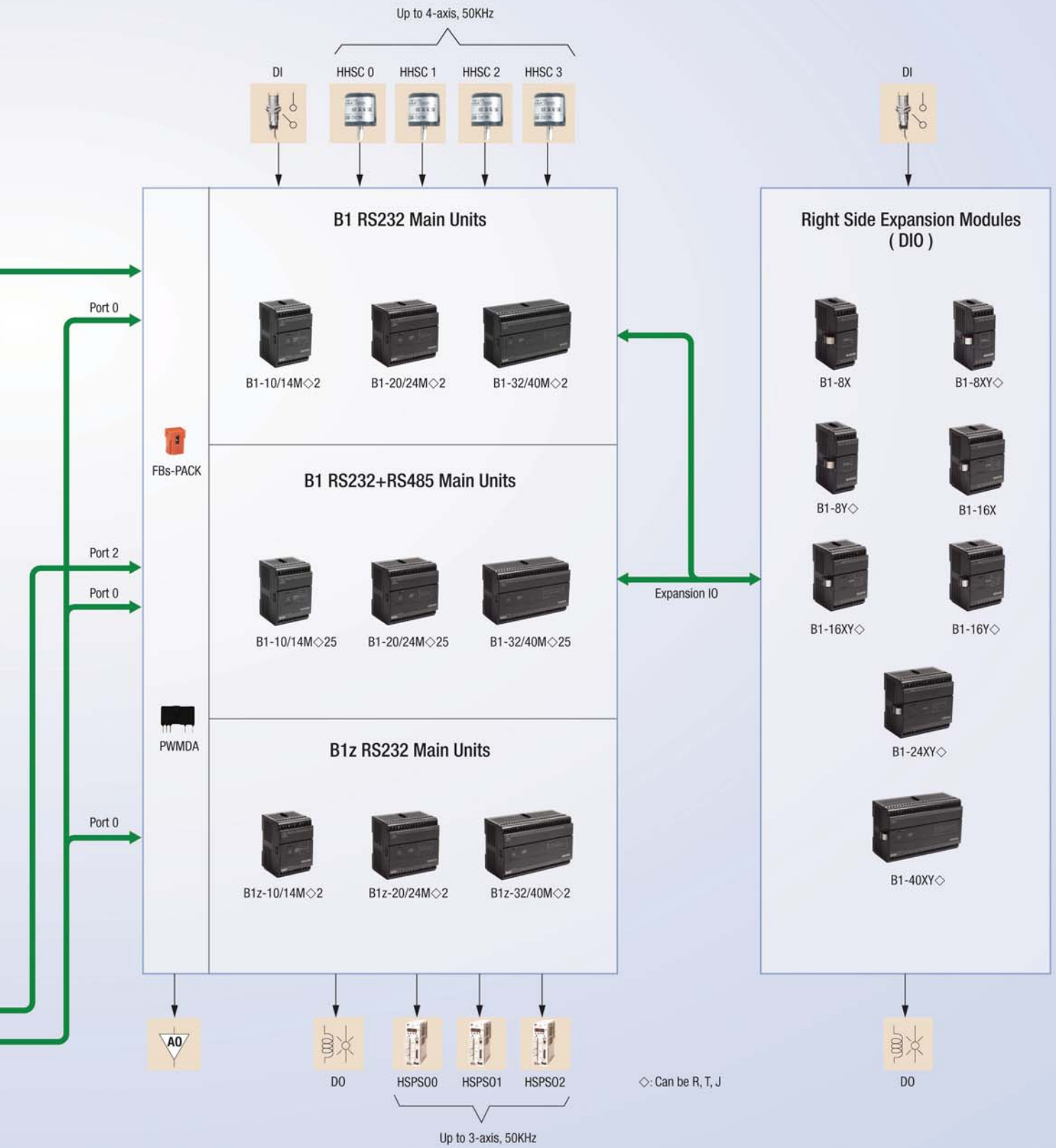
The streamline design of SoC technology significantly reduces the hardware costs. The B1/B1z series PLC incorporates the most sophisticated manufacturing process and high quality two-layer board design. This makes the B1/B1z PLC very price-competitive in today's cost conscience PLC market!

## Easy to Use, Common Instruction Sets

The B1/B1z series PLC is an economic type PLC without any compromise to its performance. It also provides all the easy to use yet powerful FBs series PLC's instructions. Both B1/B1z and FBs series PLC are programmed by the same utility software - Winproladder.

# System Configuration





# General Specifications

## Environmental Specifications

| Item                                     |                   |         | Specification                                 | Note                   |
|------------------------------------------|-------------------|---------|-----------------------------------------------|------------------------|
| Operating ambient temperature            | Enclosure space   | Minimum | 5°C                                           | Permanent installation |
|                                          |                   | Maximum | 40°C                                          |                        |
|                                          | Open space        | Minimum | 5°C                                           |                        |
|                                          |                   | Maximum | 55°C                                          |                        |
| Storage temperature                      |                   |         | -25°C ~ +70°C                                 |                        |
| Relative humidity (non-condensing, RH-2) |                   |         | 5% ~ 95%                                      |                        |
| Pollution resistance                     |                   |         | Degree II                                     |                        |
| Corrosion resistance                     |                   |         | Based on IEC-68 standard                      |                        |
| Altitude                                 |                   |         | ≤2000m                                        |                        |
| Vibration resistance                     | Fixed by DIN RAIL |         | 0.5G, 2 hours for each direction of 3 axes    |                        |
|                                          | Fasten by screw   |         | 2G, 2 hours for each direction of 3 axes      |                        |
| Shock resistance                         |                   |         | 10G, three times for each direction of 3 axes |                        |
| Noise resistance                         |                   |         | 1500 Vp-p, pulse width 1μS                    |                        |
| Withstand voltage                        |                   |         | 1500VAC, 1 minute                             | L, N to any terminal   |

## AC Model Power Specifications

| Specification / Item                          |           | 10 Points Main Unit   | 14 Points Main Unit | 20 Points Main Unit | 24 Points Main Unit | 32 Points Main Unit | 40 Points Main Unit |
|-----------------------------------------------|-----------|-----------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| Input power                                   | Voltage   | 100~240VAC, -15%/+10% |                     |                     |                     |                     |                     |
|                                               | Frequency | 50/60Hz ±5%           |                     |                     |                     |                     |                     |
| Max. power capability (built-in power supply) |           | 21W                   |                     |                     |                     |                     |                     |
| Inrush current                                |           | 20A@264VAC            |                     |                     |                     |                     |                     |
| Allowable power momentary interruption time   |           | < 20mS                |                     |                     |                     |                     |                     |
| Fuse rating                                   |           | 2A, 250VAC            |                     |                     |                     |                     |                     |

## DC Model Power Specifications

| Specification / Item                        |  | 10 Points Main Unit    | 14 Points Main Unit | 20 Points Main Unit | 24 Points Main Unit | 32 Points Main Unit | 40 Points Main Unit |
|---------------------------------------------|--|------------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| Input voltage                               |  | 12 or 24VDC, -10%/+20% |                     |                     |                     |                     |                     |
| Max. power capability                       |  | 2.5W                   | 3.0W                | 3.5W                | 4.0W                | 4.5W                | 5.0W                |
| Inrush current                              |  | 20A@DC24V              |                     |                     |                     |                     |                     |
| Allowable power momentary interruption time |  | < 2mS                  |                     |                     |                     |                     |                     |
| Fuse rating                                 |  | 1A, 125V               |                     |                     |                     |                     |                     |

# Functional Specifications

## Main Unit Specifications

\*1 : Default, changeable by user

| Specification            |    |                       | Item | B1                                                                          | B1z             | Notes                           |                                                                                   |
|--------------------------|----|-----------------------|------|-----------------------------------------------------------------------------|-----------------|---------------------------------|-----------------------------------------------------------------------------------|
| Execution speed          |    |                       |      | 0.33uS/Sequential instruction                                               |                 |                                 |                                                                                   |
| Memory capacity          |    | Program(Word)         |      | 7936 Words                                                                  | 3840 Words      |                                 |                                                                                   |
|                          |    | Comment(Byte)         |      | 8K Bytes                                                                    | 4K Bytes        |                                 |                                                                                   |
| Sequential instruction   |    |                       |      | 36 instructions                                                             |                 |                                 |                                                                                   |
| Function instruction     |    |                       |      | 326 instructions(126 kinds)                                                 |                 | Include derivative instructions |                                                                                   |
| Flow chart command (SFC) |    |                       |      | 4 instructions                                                              |                 |                                 |                                                                                   |
| Communication Interface  |    | Port0 (RS232)         |      | Communication speed 4.8~115.2Kbps (9.6Kbps)*1                               |                 |                                 |                                                                                   |
|                          |    | Port1~Port2           |      | Expandable Port1 and Port2<br>Communication speed 4.8~921.6Kbps (9.6Kbps)*1 | —               |                                 | Port1~2 provides FATEK or Modbus RTU/ASCII or user defined communication protocol |
|                          |    | Maximum link stations |      | 254                                                                         |                 |                                 |                                                                                   |
| Digital (Bit status)     | X  | Input contact(DI)     |      | X+Y=80                                                                      | 6/8/12/14/20/24 |                                 |                                                                                   |
|                          | Y  | Output relay(DO)      |      |                                                                             | 4/6/8/10/12/16  |                                 |                                                                                   |
|                          | TR | Temporary relay       |      | TR0~TR39 (40)                                                               |                 |                                 |                                                                                   |

# Functional Specifications

(continue)

\*1 : Default, changeable by user

\*2 : Analog expansion module will occupy Port1

| Specification                 |                                           |                                 |                                                         | Item                                                                    | B1                                   |                  |                                                         |                           | B1z                                                                    |               |                                                                |                                                                                                                                                                     | Notes                                                                    |                                         |
|-------------------------------|-------------------------------------------|---------------------------------|---------------------------------------------------------|-------------------------------------------------------------------------|--------------------------------------|------------------|---------------------------------------------------------|---------------------------|------------------------------------------------------------------------|---------------|----------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------|-----------------------------------------|
| Digital (Bit status)          | M                                         | Internal relay                  |                                                         | Non-retentive                                                           | M0~M799 (800)*1                      |                  |                                                         |                           | M0~M511 (512)                                                          |               |                                                                |                                                                                                                                                                     | Can be configured as retentive type                                      |                                         |
|                               |                                           |                                 |                                                         |                                                                         | M1400~M1911 (512)                    |                  |                                                         |                           |                                                                        |               |                                                                |                                                                                                                                                                     |                                                                          |                                         |
|                               |                                           |                                 |                                                         | Retentive                                                               | M800~M1399 (600)*1                   |                  |                                                         |                           | M512~M767 (256)                                                        |               |                                                                |                                                                                                                                                                     | Can be configured as non-retentive type                                  |                                         |
|                               | Special relay                             |                                 |                                                         |                                                                         | M1912~M2001 (90)                     |                  |                                                         |                           | M1912~M2001 (90)                                                       |               |                                                                |                                                                                                                                                                     |                                                                          |                                         |
|                               | S                                         | Step relay                      |                                                         | Non-retentive                                                           | S0~S499 (500)*1                      |                  |                                                         |                           | S0~S143 (144)                                                          |               |                                                                |                                                                                                                                                                     | S20 ~ S499 can be configured as retentive type                           |                                         |
|                               |                                           |                                 |                                                         | Retentive                                                               | S500~S999 (500)*1                    |                  |                                                         |                           | S144~S271 (128)                                                        |               |                                                                |                                                                                                                                                                     | Can be configured as non-retentive type                                  |                                         |
|                               | T                                         | Timer “Time-Up” status contact  |                                                         |                                                                         | T0~T255 (256)                        |                  |                                                         |                           | T0~T113,<br>T200~T219 (134)                                            |               |                                                                |                                                                                                                                                                     |                                                                          |                                         |
| C                             | Counter “Count-Up” status contact         |                                 |                                                         | C0~C255 (256)                                                           |                                      |                  |                                                         | C0~C63,<br>C200~C215 (80) |                                                                        |               |                                                                |                                                                                                                                                                     |                                                                          |                                         |
| Register (Word data)          | TMR                                       | Timer current value register    |                                                         | 0.01S Time base                                                         | T0~T49 (50)*1                        |                  |                                                         |                           | T0~T49(50)                                                             |               |                                                                |                                                                                                                                                                     | T0 ~ T255 members for each time base can be adjusted                     |                                         |
|                               |                                           |                                 |                                                         | 0.1S Time base                                                          | T50~T199 (150)*1                     |                  |                                                         |                           | T50~T113(64)                                                           |               |                                                                |                                                                                                                                                                     |                                                                          |                                         |
|                               |                                           |                                 |                                                         | 1S Time base                                                            | T200~T255 (56)*1                     |                  |                                                         |                           | T200~T219 (20)                                                         |               |                                                                |                                                                                                                                                                     |                                                                          |                                         |
|                               | CTR                                       | Counter current value register  |                                                         | 16-bit                                                                  | Retentive                            | C0~C139 (140)*1  |                                                         |                           |                                                                        | C0~C31 (32)   |                                                                |                                                                                                                                                                     |                                                                          | Can be configured as non-retentive type |
|                               |                                           |                                 |                                                         |                                                                         | Non-retentive                        | C140~C199 (60)*1 |                                                         |                           |                                                                        | C32~C63 (32)  |                                                                |                                                                                                                                                                     |                                                                          | Can be configured as retentive type     |
|                               |                                           |                                 |                                                         | 32-bit                                                                  | Retentive                            | C200~C239 (40)*1 |                                                         |                           |                                                                        | C200~C207 (8) |                                                                |                                                                                                                                                                     |                                                                          | Can be configured as non-retentive type |
|                               |                                           |                                 |                                                         |                                                                         | Non-retentive                        | C240~C255 (16)*1 |                                                         |                           |                                                                        | C208~C215 (8) |                                                                |                                                                                                                                                                     |                                                                          | Can be configured as retentive type     |
|                               | HR DR                                     | Data register                   |                                                         | Retentive                                                               | R0~R2999 (3000)*1                    |                  |                                                         |                           | R0~R127 (128)                                                          |               |                                                                |                                                                                                                                                                     | Can be configured as non-retentive type                                  |                                         |
|                               |                                           |                                 |                                                         |                                                                         | D0~D3999 (4000)                      |                  |                                                         |                           |                                                                        |               |                                                                |                                                                                                                                                                     |                                                                          |                                         |
|                               | HR ROR                                    |                                 |                                                         | Non-retentive                                                           | R3000~R3839 (840)*1                  |                  |                                                         |                           | R128~R511 (384)                                                        |               |                                                                |                                                                                                                                                                     | Can be configured as retentive type                                      |                                         |
|                               |                                           |                                 |                                                         | Retentive                                                               | R5000~R8071 (3072)*1                 |                  |                                                         |                           | R5000~R5255 (256)*1                                                    |               |                                                                |                                                                                                                                                                     | When not configured as ROR, it can serve normal register(for read/write) |                                         |
|                               |                                           | Read only register              | R5000~R8071 can be set as ROR, default setting is (0)*1 |                                                                         |                                      |                  | R5000~R5255 can be set as ROR, default setting is (0)*1 |                           |                                                                        |               | ROR is stored in special ROR area and not occupy program space |                                                                                                                                                                     |                                                                          |                                         |
|                               |                                           | File register                   | F0~F8191(8192)                                          |                                                                         |                                      |                  | —                                                       |                           |                                                                        |               | Saved/retrieved via dedicated instruction                      |                                                                                                                                                                     |                                                                          |                                         |
|                               | IR                                        | Input register                  |                                                         |                                                                         | D4072~D4075(4)*2                     |                  |                                                         |                           | —                                                                      |               |                                                                |                                                                                                                                                                     |                                                                          |                                         |
|                               | OR                                        | Output register                 |                                                         |                                                                         | D4076~D4077(2)*2                     |                  |                                                         |                           | —                                                                      |               |                                                                |                                                                                                                                                                     |                                                                          |                                         |
|                               | SR                                        | Special system register         |                                                         |                                                                         | R3840~R4167(328)<br>D4000~D4095 (96) |                  |                                                         |                           | R3840~R4167 (328)<br>R4030~R4057 (retentive)<br>R4088~R4166(retentive) |               |                                                                |                                                                                                                                                                     |                                                                          |                                         |
|                               |                                           | 0.1mS high-speed timer register |                                                         |                                                                         | R4152~R4154 (3)                      |                  |                                                         |                           |                                                                        |               |                                                                |                                                                                                                                                                     |                                                                          |                                         |
|                               |                                           | High-speed counter register     | Hardware (4 sets)                                       | DR4096~DR4110 (4x4)                                                     |                                      |                  |                                                         |                           |                                                                        |               |                                                                |                                                                                                                                                                     |                                                                          |                                         |
|                               |                                           |                                 | Software (4 sets)                                       | DR4112~DR4126 (4x4)                                                     |                                      |                  |                                                         |                           |                                                                        |               |                                                                |                                                                                                                                                                     |                                                                          |                                         |
|                               |                                           | Calendar Register               |                                                         |                                                                         |                                      | R4128 (sec)      | R4129 (min)                                             | R4130 (hour)              | R4131 (day)                                                            | —             |                                                                | Optional                                                                                                                                                            |                                                                          |                                         |
|                               |                                           |                                 |                                                         |                                                                         |                                      | R4132 (month)    | R4133 (year)                                            | R4134 (week)              |                                                                        |               |                                                                |                                                                                                                                                                     |                                                                          |                                         |
|                               | XR                                        | Index Register                  |                                                         |                                                                         | V, Z(2)                              |                  |                                                         |                           |                                                                        |               |                                                                |                                                                                                                                                                     |                                                                          |                                         |
| Interrupt control             | External interrupt control                |                                 |                                                         | 32 interrupts(16 points input positive/negative edge)                   |                                      |                  |                                                         |                           |                                                                        |               |                                                                |                                                                                                                                                                     |                                                                          |                                         |
|                               | Internal interrupt control                |                                 |                                                         | 8 interrupts(1' 2' 3' 4' 5' 10' 50' 100mS)                              |                                      |                  |                                                         |                           |                                                                        |               |                                                                |                                                                                                                                                                     |                                                                          |                                         |
| 0.1mS high speed timer(HST)   |                                           |                                 |                                                         | 1(16-bit) 4(32-bit, share with HHSC)                                    |                                      |                  |                                                         |                           |                                                                        |               |                                                                |                                                                                                                                                                     |                                                                          |                                         |
| High-speed counter HSC        | Hardware high-speed counter(HHSC) /32-bit |                                 | No. of channel                                          | Up to 4                                                                 |                                      |                  |                                                         |                           |                                                                        |               |                                                                | Total number of HHSC and SHSC is 8<br>HHSC can be converted into 32-bit/0.1mS time base<br>High-Speed Timer(HST)<br>Half of maximum frequency while A/B phase input |                                                                          |                                         |
|                               |                                           |                                 | Counting mode                                           | 8 modes(U/D, U/Dx2, P/R, P/Rx2, A/B, A/Bx2, A/Bx3, A/Bx4)               |                                      |                  |                                                         |                           |                                                                        |               |                                                                |                                                                                                                                                                     |                                                                          |                                         |
|                               |                                           |                                 | Counting frequency                                      | Maximum is 50KHz (Single-end input)                                     |                                      |                  |                                                         |                           |                                                                        |               |                                                                |                                                                                                                                                                     |                                                                          |                                         |
|                               | Software high-speed counter(SHSC) /32-bit |                                 | No. of channel                                          | Up to 4                                                                 |                                      |                  |                                                         |                           |                                                                        |               |                                                                |                                                                                                                                                                     |                                                                          |                                         |
|                               |                                           |                                 | Counting mode                                           | 3 modes(U/D, P/R, A/B)                                                  |                                      |                  |                                                         |                           |                                                                        |               |                                                                |                                                                                                                                                                     |                                                                          |                                         |
|                               |                                           |                                 | Counting frequency                                      | Maximum sum up to 5KHz                                                  |                                      |                  |                                                         |                           |                                                                        |               |                                                                |                                                                                                                                                                     |                                                                          |                                         |
| NC position pulse out (HSPSO) | Number of axis                            |                                 |                                                         | Up to 3                                                                 |                                      |                  |                                                         |                           |                                                                        |               |                                                                | Half of the maximum while A/B phase output                                                                                                                          |                                                                          |                                         |
|                               | Output frequency                          |                                 |                                                         | Maximum is 50KHz (Single-end input)                                     |                                      |                  |                                                         |                           |                                                                        |               |                                                                |                                                                                                                                                                     |                                                                          |                                         |
|                               | Pulse output mode                         |                                 |                                                         | 3 modes(U/D, P/R, A/B)                                                  |                                      |                  |                                                         |                           |                                                                        |               |                                                                |                                                                                                                                                                     |                                                                          |                                         |
|                               | Programming method                        |                                 |                                                         | Dedicated position language                                             |                                      |                  |                                                         |                           |                                                                        |               |                                                                |                                                                                                                                                                     |                                                                          |                                         |
|                               | Interpolation                             |                                 |                                                         | Maximum 3 axes linear interpolation                                     |                                      |                  |                                                         |                           |                                                                        |               |                                                                |                                                                                                                                                                     |                                                                          |                                         |
| HSPWM output                  | Number of points                          |                                 |                                                         | Up to 3                                                                 |                                      |                  |                                                         |                           |                                                                        |               |                                                                |                                                                                                                                                                     |                                                                          |                                         |
|                               | Output frequency                          |                                 |                                                         | 72Hz~18.432KHz (with 0.1%resolution)<br>720Hz~50KHz (with 1%resolution) |                                      |                  |                                                         |                           |                                                                        |               |                                                                |                                                                                                                                                                     |                                                                          |                                         |

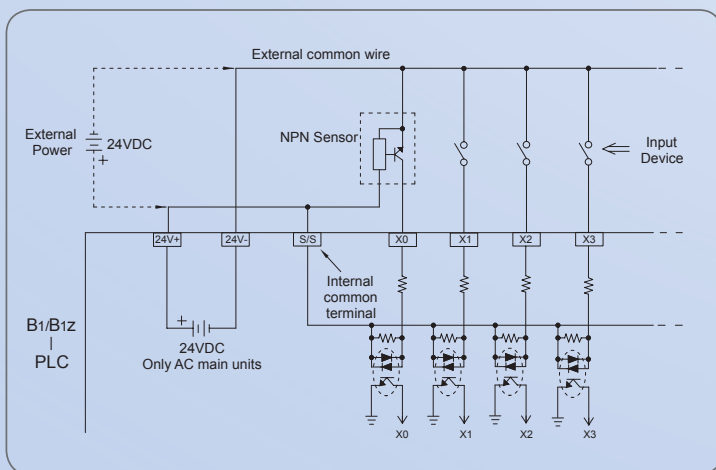
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| Specification  |                                | Item | B1                                                                 | B1z | Notes                                    |
|----------------|--------------------------------|------|--------------------------------------------------------------------|-----|------------------------------------------|
| Capture input  | Points                         |      | Maximum 24 points (All inputs in main unit come with this feature) |     |                                          |
|                | Minimum capturable pulse width |      | > 47μS(for high speed input)                                       |     |                                          |
|                |                                |      | > 470μS(for medium speed input)                                    |     |                                          |
| Digital filter | X0~X15                         |      | Adjustable frequency 14KHz~1.8MHz                                  |     | Chosen by frequency at high frequency    |
|                |                                |      | Adjustable time constant 0~1.5mS/0~15mS(unit: 0.1mS/1mS)           |     | Chosen by time constant at low frequency |
|                | X16~X23                        |      | Time constant 1~15mS adjustable(unit: 1mS)                         |     |                                          |

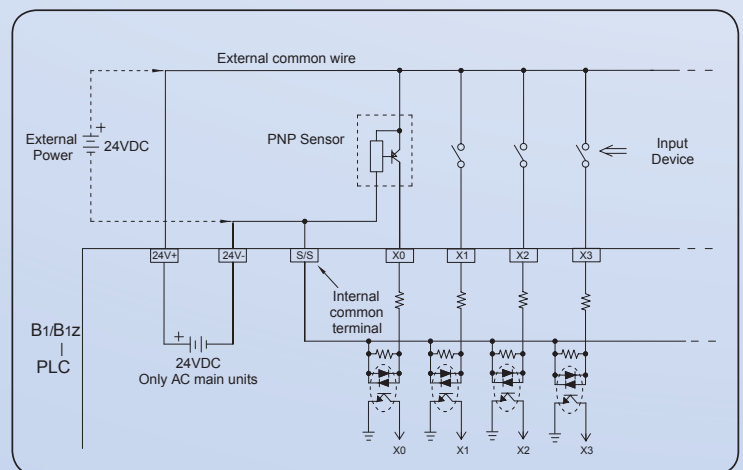
## Digital Input (DI) Specifications

| Specification\Item       |     | 24VDC single-end input                                                             |                             |            | Notes                                                       |
|--------------------------|-----|------------------------------------------------------------------------------------|-----------------------------|------------|-------------------------------------------------------------|
|                          |     | High speed                                                                         | Medium speed                | Low speed  |                                                             |
| Maximum input frequency* |     | 50KHz(HHSC)                                                                        | Total 5KHz(SHSC)            | < 50Hz     | * : Half of maximum frequency while A/B phase input         |
| Input signal voltage     |     | 24VDC±10%                                                                          |                             |            |                                                             |
| Threshold current        | ON  | > 4mA                                                                              |                             | > 2.3mA    |                                                             |
|                          | OFF | < 1.5mA                                                                            |                             | < 0.9mA    |                                                             |
| Maximum input current    |     | 7.6mA                                                                              |                             | 4.5mA      |                                                             |
| Input status indication  |     | Displayed by LED: light when “ON”, dark when “OFF”                                 |                             |            |                                                             |
| Isolation method         |     | Optical isolation, 500VAC, 1 minute                                                |                             |            |                                                             |
| SINK/SOURCE selection    |     | Select by wiring methods (internal common terminal S/S and external common wiring) |                             |            |                                                             |
| Noise filtering methods  |     | DHF(0~15mS)<br>+AHF(4.7μS)                                                         | DHF(0~15mS)<br>+AHF(0.47mS) | AHF(4.7mS) | DHF: Digital Hardware Filter<br>AHF: Analog Hardware Filter |

### Wiring of 24VDC single-end SINK input



### Wiring of 24VDC single-end SOURCE input

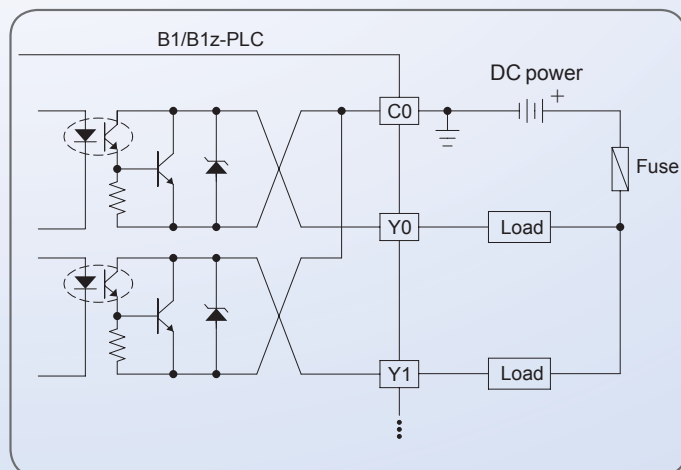


## Digital Output (DO) Specifications

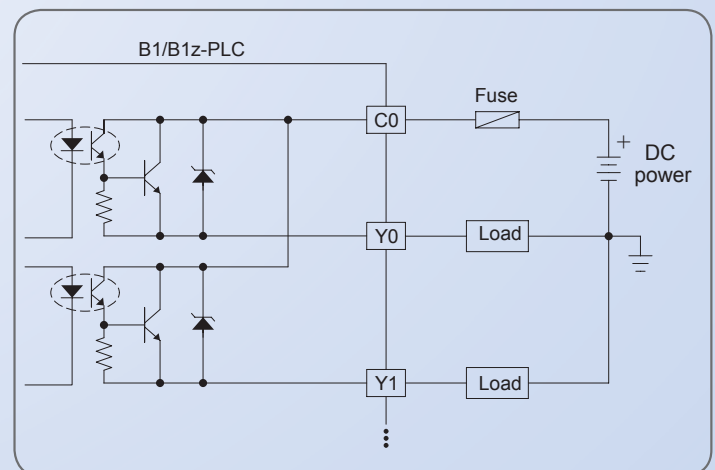
| Item                                        |           | Single-end transistor output (T,J models)          |           | Single-end relay output                      |
|---------------------------------------------|-----------|----------------------------------------------------|-----------|----------------------------------------------|
| Specification                               |           | High speed                                         | Low speed |                                              |
| Maximum output frequency*                   |           | 50KHz                                              | —         | —                                            |
| Working voltage                             |           | 5~30VDC                                            |           | <250VAC/30VDC                                |
| Maximum load current                        | Resistive | 0.3A                                               | 0.5A      | 2A/single, 4A/common                         |
|                                             | Inductive |                                                    |           | 80VA(AC)/24VA(DC)                            |
| Maximum voltage drop/ conducting resistance |           | 0.5V                                               | 1V        | 0.06V(initial)                               |
| Minimum load                                |           | —                                                  |           | 2mA/DC power                                 |
| Leakage current                             |           | < 0.1mA/30VDC                                      |           | —                                            |
| Maximum output delay time                   | ON → OFF  | 15μS                                               |           | 10mS                                         |
|                                             | OFF → ON  | 30μS                                               |           |                                              |
| Output status indication                    |           | Displayed by LED: light when "ON", dark when "OFF" |           |                                              |
| Isolation method                            |           | Optical isolation, 500VAC, 1 minute                |           | Electromagnetic isolation, 1500VAC, 1 minute |
| SINK/SOURCE output type                     |           | T models (SINK); J models (SOURCE)                 |           | Can be arbitrarily set to SINK/SOURCE output |

\* : Half of the maximum frequency while A/B phase output

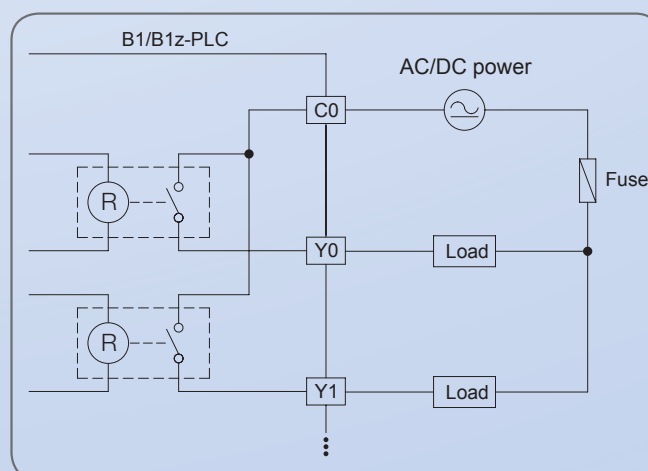
### Wiring of transistor single-end SINK output



### Wiring of transistor single-end SOURCE output



### Wiring of relay single-end output



# Model Specifications



## B1 Main Units

| Spec.                 |                       |                           | Model                                                             | B1-10MR                                    | B1-10M(T/J) | B1-14MR                                    | B1-14M(T/J) | B1-20MR                                            | B1-20M(T/J) |
|-----------------------|-----------------------|---------------------------|-------------------------------------------------------------------|--------------------------------------------|-------------|--------------------------------------------|-------------|----------------------------------------------------|-------------|
| Digital input         | 24VDC                 | High speed 50KHz          | 4 points (4-axis single phase or 2-axis A/B phase)                |                                            |             |                                            |             | 6 points (4-axis single phase or 3-axis A/B phase) |             |
|                       |                       | Medium speed (Total 5KHz) | 2 points                                                          |                                            | 4 points    |                                            | 6 points    |                                                    |             |
|                       |                       | Low speed                 | —                                                                 | —                                          | —           | —                                          | —           | —                                                  |             |
| Digital output        | Relay                 | AC/DC(2A)                 | 4 points                                                          | —                                          | 6 points    | —                                          | 8 points    | —                                                  |             |
|                       | Transistor (5~30 VDC) | High speed 50KHz (0.3A)   | —                                                                 | 2 points(1-axis single phase or A/B phase) | —           | 2 points(1-axis single phase or A/B phase) | —           | 4 points(2-axis single phase or A/B phase)         |             |
|                       |                       | Low speed (0.5A)          | —                                                                 | 2 points                                   | —           | 4 points                                   | —           | 4 points                                           |             |
| Communication Port    | Built-in              |                           | 1 port (RS232 or USB*1) / 2 ports (RS232 + RS485) for B1-xxM ◇ 25 |                                            |             |                                            |             |                                                    |             |
|                       | Expandable            |                           | 2 ports (except B1-xxM ◇ 25)                                      |                                            |             |                                            |             |                                                    |             |
| Calendar              |                       |                           |                                                                   | Special order                              |             |                                            |             |                                                    |             |
| Built-in power supply |                       |                           |                                                                   | ZPOW14(AC power) or N/A(DC power)          |             |                                            |             |                                                    |             |
| Wiring mechanism      |                       |                           |                                                                   | 5mm European fixed terminal block          |             |                                            |             |                                                    |             |
| Dimension             |                       |                           |                                                                   | Figure 1 (Standard), Figure 2 (Slim)*2     |             |                                            |             | Figure 3 (Standard), Figure 4 (Slim)*2             |             |

\*1 Special order

\*2 AC power main unit has no slim case



## B1 Main Units

| Spec.                 |                       |                           | Model                                                             | B1-24MR                                    | B1-24M(T/J) | B1-32MR                                    | B1-32M(T/J) | B1-40MR                                    | B1-40M(T/J) |
|-----------------------|-----------------------|---------------------------|-------------------------------------------------------------------|--------------------------------------------|-------------|--------------------------------------------|-------------|--------------------------------------------|-------------|
| Digital input         | 24VDC                 | High speed 50KHz          | 8 points (4-axis single phase or A/B phase)                       |                                            |             |                                            |             |                                            |             |
|                       |                       | Medium speed (Total 5KHz) | 6 points                                                          |                                            | 8 points    |                                            |             |                                            |             |
|                       |                       | Low speed                 |                                                                   |                                            | 4 points    |                                            | 8 points    |                                            |             |
| Digital output        | Relay                 | AC/DC(2A)                 | 10 points                                                         | —                                          | 12 points   | —                                          | 16 points   |                                            |             |
|                       | Transistor (5~30 VDC) | High speed 50KHz (0.3A)   | —                                                                 | 4 points(2-axis single phase or A/B phase) | —           | 6 points(3-axis single phase or A/B phase) | —           | 6 points(3-axis single phase or A/B phase) |             |
|                       |                       | Low speed (0.5A)          | —                                                                 | 6 points                                   | —           | 6 points                                   | —           | 10 points                                  |             |
| Communication Port    | Built-in              |                           | 1 port (RS232 or USB*1) / 2 ports (RS232 + RS485) for B1-xxM ◇ 25 |                                            |             |                                            |             |                                            |             |
|                       | Expandable            |                           | 2 ports (except B1-xxM ◇ 25)                                      |                                            |             |                                            |             |                                            |             |
| Calendar              |                       |                           | Special order                                                     |                                            |             |                                            |             |                                            |             |
| Built-in power supply |                       |                           | ZPOW14(AC power) or N/A(DC power)                                 |                                            |             |                                            |             |                                            |             |
| Wiring mechanism      |                       |                           | 5mm European fixed terminal block                                 |                                            |             |                                            |             |                                            |             |
| Dimension             |                       |                           | Figure 3 (Standard), Figure 4 (Slim)*2                            |                                            |             | Figure 5 (Standard), Figure 6 (Slim)*2     |             |                                            |             |

\*1 Special order

\*2 AC power main unit has no slim case



## B1z Main Units

| Model                 |                       |                           | B1z-10MR                                           | B1z-10M(T/J)                               | B1z-14MR | B1z-14M(T/J)                               | B1z-20MR                                           | B1z-20M(T/J)                               |
|-----------------------|-----------------------|---------------------------|----------------------------------------------------|--------------------------------------------|----------|--------------------------------------------|----------------------------------------------------|--------------------------------------------|
| Digital input         | 24VDC                 | High speed 50KHz          | 4 points (4-axis single phase or 2-axis A/B phase) |                                            |          |                                            | 6 points (4-axis single phase or 3-axis A/B phase) |                                            |
|                       |                       | Medium speed (Total 5KHz) | 2 points                                           |                                            | 4 points |                                            | 6 points                                           |                                            |
|                       |                       | Low speed                 | —                                                  | —                                          | —        | —                                          | —                                                  | —                                          |
| Digital output        | Relay                 | AC/DC(2A)                 | 4 points                                           | —                                          | 6 points | —                                          | 8 points                                           | —                                          |
|                       | Transistor (5~30 VDC) | High speed 50KHz (0.3A)   | —                                                  | 2 points(1-axis single phase or A/B phase) | —        | 2 points(1-axis single phase or A/B phase) | —                                                  | 4 points(2-axis single phase or A/B phase) |
|                       |                       | Low speed (0.5A)          | —                                                  | 2 points                                   | —        | 4 points                                   | —                                                  | 4 points                                   |
| Communication Port    |                       | Built-in                  | 1 port (RS232 or USB*1)                            |                                            |          |                                            |                                                    |                                            |
|                       |                       | Expandable                | N/A                                                |                                            |          |                                            |                                                    |                                            |
| Calendar              |                       |                           | N/A                                                |                                            |          |                                            |                                                    |                                            |
| Built-in power supply |                       |                           | ZPOW14(AC power) or N/A(DC power)                  |                                            |          |                                            |                                                    |                                            |
| Wiring mechanism      |                       |                           | 5mm European fixed terminal block                  |                                            |          |                                            |                                                    |                                            |
| Dimension             |                       |                           | Figure 1 (Standard), Figure 2 (Slim)*2             |                                            |          |                                            | Figure 3 (Standard), Figure 4 (Slim)*2             |                                            |

\*1 Special order

\*2 AC power main unit has no slim case

# Model Specifications

## B1z Main Units



| Spec.                 |                       |                           | Model                                       | B1z-24MR                                   | B1z-24M(T/J) | B1z-32MR                                   | B1z-32M(T/J) | B1z-40MR                                   | B1z-40M(T/J) |
|-----------------------|-----------------------|---------------------------|---------------------------------------------|--------------------------------------------|--------------|--------------------------------------------|--------------|--------------------------------------------|--------------|
| Digital input         | 24VDC                 | High speed 50KHz          | 8 points (4-axis single phase or A/B phase) |                                            |              |                                            |              |                                            |              |
|                       |                       | Medium speed (Total 5KHz) | 6 points                                    |                                            |              | 8 points                                   |              |                                            |              |
|                       |                       | Low speed                 | —                                           | —                                          | 4 points     |                                            | 8 points     |                                            |              |
| Digital output        | Relay                 | AC/DC(2A)                 | 10 points                                   |                                            | 12 points    |                                            | 16 points    |                                            |              |
|                       | Transistor (5~30 VDC) | High speed 50KHz (0.3A)   | —                                           | 4 points(2-axis single phase or A/B phase) | —            | 6 points(3-axis single phase or A/B phase) | —            | 6 points(3-axis single phase or A/B phase) |              |
|                       |                       | Low speed (0.5A)          | —                                           | 6 points                                   | —            | 6 points                                   | —            | 10 points                                  |              |
| Communication Port    | Built-in              | 1 port (RS232 or USB*)    |                                             |                                            |              |                                            |              |                                            |              |
|                       | Expandable            | N/A                       |                                             |                                            |              |                                            |              |                                            |              |
| Calendar              |                       |                           | N/A                                         |                                            |              |                                            |              |                                            |              |
| Built-in power supply |                       |                           | ZPOW14(AC power) or N/A(DC power)           |                                            |              |                                            |              |                                            |              |
| Wiring mechanism      |                       |                           | 5mm European fixed terminal block           |                                            |              |                                            |              |                                            |              |
| Dimension             |                       |                           | Figure 3 (Standard), Figure 4 (Slim)*2      |                                            |              | Figure 5 (Standard), Figure 6 (Slim)*2     |              |                                            |              |

\*1 Special order

\*2 AC power main unit has no slim case

## Right Side Digital I/O Expansion Modules



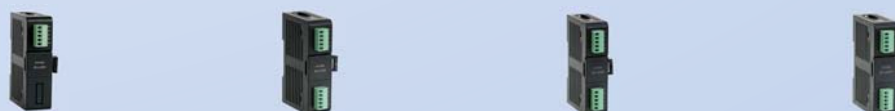
| Spec.            |                        |                  | Model                                | B1-8X    | B1-8YR   | B1-8Y(T/J) | B1-8XYR  | B1-8XY(T/J) | B1-16X                               | B1-16YR   | B1-16Y(T/J) |
|------------------|------------------------|------------------|--------------------------------------|----------|----------|------------|----------|-------------|--------------------------------------|-----------|-------------|
| Digital input    | 24VDC                  | Low speed        | 8 points                             | —        | —        | 4 points   | 4 points | 16 points   | —                                    | —         |             |
| Digital output   | Relay                  | AC/DC(2A)        | —                                    | 8 points | —        | 4 points   | —        | —           | 16 points                            | —         |             |
|                  | Transistor (5 ~ 30VDC) | Low speed (0.5A) | —                                    | —        | 8 points | —          | 4 points | —           | —                                    | 16 points |             |
| Wiring mechanism |                        |                  | 5 mm European fixed terminal block   |          |          |            |          |             |                                      |           |             |
| Dimension        |                        |                  | Figure 7 (Standard), Figure 8 (Slim) |          |          |            |          |             | Figure 1 (Standard), Figure 2 (Slim) |           |             |

## Right Side Digital I/O Expansion Modules



| Spec. Model      |                        |                  | B1-16XYR                             | B1-16XY(T/J) | B1-24XYR                             | B1-24XY(T/J) | B1-40XYR                             | B1-40XY(T/J) |
|------------------|------------------------|------------------|--------------------------------------|--------------|--------------------------------------|--------------|--------------------------------------|--------------|
| Digital input    | 24VDC                  | Low speed        | 8 points                             | 8 points     | 14 points                            | 14 points    | 24 points                            | 24 points    |
| Digital output   | Relay                  | AC/DC(2A)        | 8 points                             | —            | 10 points                            | —            | 16 points                            | —            |
|                  | Transistor (5 ~ 30VDC) | Low speed (0.5A) | —                                    | 8 points     | —                                    | 10 points    | —                                    | 16 points    |
| Wiring mechanism |                        |                  | 5mm European fixed terminal block    |              |                                      |              |                                      |              |
| Dimension        |                        |                  | Figure 1 (Standard), Figure 2 (Slim) |              | Figure 3 (Standard), Figure 4 (Slim) |              | Figure 5 (Standard), Figure 6 (Slim) |              |

## Left Side Analog I/O Expansion Modules



| Spec.            |  | Model | B1-L2DA                                                   | B1-L4AD                                                  | B1-L2A2D                                                                                                 | B1-L4NTC                                                     |
|------------------|--|-------|-----------------------------------------------------------|----------------------------------------------------------|----------------------------------------------------------------------------------------------------------|--------------------------------------------------------------|
| Features         |  |       | 2 channels, 12-bit analog output module (0~10V or 0~20mA) | 4 channels, 12-bit analog input module (0~10V or 0~20mA) | 2 channels, 12-bit analog input + 2 channels, 12-bit analog output combo analog module (0~10V or 0~20mA) | 4 channels, 12-bit NTC temperature input module (100Ω~100KΩ) |
| Wiring mechanism |  |       | 3.81 mm European detachable terminal block                |                                                          |                                                                                                          |                                                              |
| Dimension        |  |       | Figure 11 (Standard), Figure 12 (Slim)                    |                                                          |                                                                                                          |                                                              |

## Left Side Communication Expansion Modules



| Spec.            | Model | B1-CM2                                       | B1-CM22                                          | B1-CM5                                       | B1-CM55                                         | B1-CM25                                                              |
|------------------|-------|----------------------------------------------|--------------------------------------------------|----------------------------------------------|-------------------------------------------------|----------------------------------------------------------------------|
| Features         |       | 1 RS232 port (Port 2) with TX, RX indicators | 2 RS232 ports (Port 1, 2) with TX, RX indicators | 1 RS485 port (Port 2) with TX, RX indicators | 2 RS485 port (Port 1, 2) with TX, RX indicators | 1 RS232 port (Port 1) + 1 RS485 port (Port 2) with TX, RX indicators |
| Wiring mechanism |       | DB9F                                         |                                                  | 3.5mm spring terminal block                  |                                                 | DB9F<br>3.5mm spring terminal block                                  |
| Dimension        |       | Figure 9 (Standard), Figure 10 (Slim)        |                                                  |                                              |                                                 |                                                                      |

(continue)



| Spec.                             | Model | B1-CM25E                                             | B1-CM55E                              |
|-----------------------------------|-------|------------------------------------------------------|---------------------------------------|
| Network interface                 |       | 10 Base T                                            |                                       |
| Network protocol                  |       | TCP/UDP/IP, ICMP, ARP                                |                                       |
| Application protocol              |       | FATEK client and server mode, Modbus-TCP server mode |                                       |
| PLC interface                     |       | Port2                                                |                                       |
| PLC communication speed           |       | 9.6K / 19.2K / 38.4K / 57.6K / 115.2Kbps / 230.4Kbps |                                       |
| Expansion communication interface |       | RS232 (Port1), RS485 (Port2)                         | RS485 (Port1, Port2)                  |
| Application IP port number        |       | FATEK port number 500, Modbus-TCP 502 or customized  |                                       |
| Security protection               |       | IP based access control                              |                                       |
| Indicators                        |       | Internet RX, TX, LINK LEDs indicators                |                                       |
| Wiring mechanism                  |       | DB9F, 3-pin spring terminal block x 1, RJ45          | 3-pin spring terminal block x 2, RJ45 |
| Dimension                         |       | Figure 9 (Standard only)                             |                                       |

## ZigBee™ Communication Module



| Spec.                   | Model | B1-CMZB                                           |
|-------------------------|-------|---------------------------------------------------|
| Standards               |       | Compliant with IEEE 802.15.4 and ZigBee™ standard |
| Network topology        |       | Mesh, star, and cluster-tree                      |
| Frequency               |       | 2.4GHz, Unlicensed ISM Band                       |
| Modulation              |       | QPSK                                              |
| Data rate               |       | 250 Kbps                                          |
| RF channels             |       | 16(5MHz)                                          |
| Data encryption         |       | AES(option)                                       |
| Transmit power          |       | -7~18dBm                                          |
| Transmission distance   |       | 1200m (LOS)                                       |
| Nodes                   |       | Maximum 65535                                     |
| Communication interface |       | Port1                                             |
| Power consumption       |       | 24VDC, -15%/+20%, 2W                              |
| Dimension               |       | Figure 9 (Standard), Figure 10 (Slim)             |

## FBs Compatible Peripherals

(Refer to FBs-PLC Catalog for Detail Specifications)

|             |       |                            |           |
|-------------|-------|----------------------------|-----------|
| Memory Pack | PWMDA | Handheld Programming Panel | RFID Card |
|             |       |                            |           |
| FBs-PACK    | PWMDA | FP-08                      | CARD-H    |

|              |              |              |                                         |          |          |           |
|--------------|--------------|--------------|-----------------------------------------|----------|----------|-----------|
| Simple HMI   |              |              | General Purpose Communication Converter |          |          |           |
|              |              |              |                                         |          |          |           |
| FBs-DAP-B/BR | FBs-DAP-C/CR | FBs-PEP/PEPR | FBs-CM25C                               | FBs-CM5R | FBs-CM5H | FBs-CMZBR |

|                      |                  |                  |                  |                   |
|----------------------|------------------|------------------|------------------|-------------------|
| Communication Cables |                  |                  |                  |                   |
|                      |                  |                  |                  |                   |
| FBs-U2C-MD-180       | FBs-232P0-9F-150 | FBs-232P0-9M-400 | FBs-232P0-MD-200 | FBs-232P0-MDR-200 |

# Dimensions

Figure 1 Standard

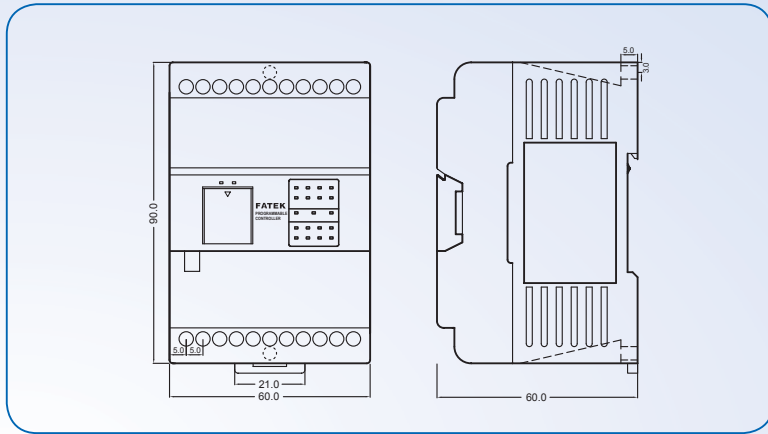


Figure 2 Slim

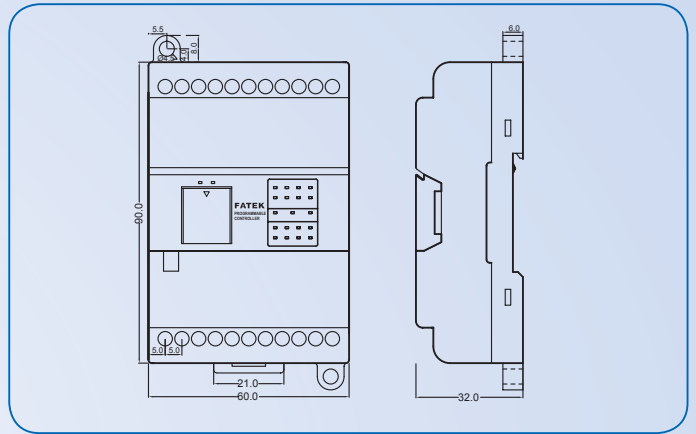


Figure 3 Standard

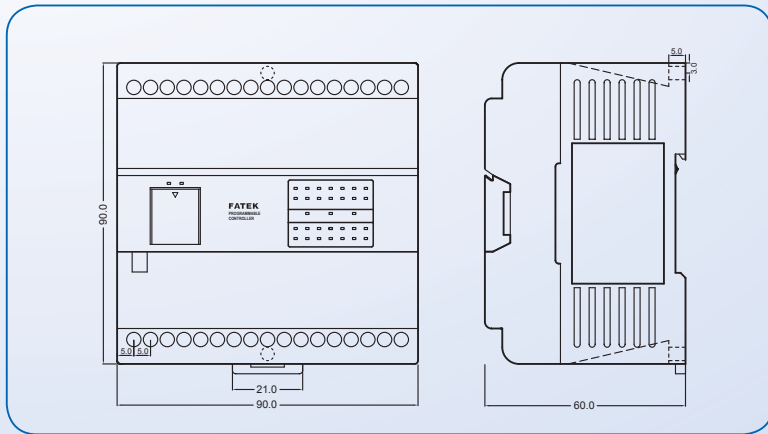


Figure 4 Slim

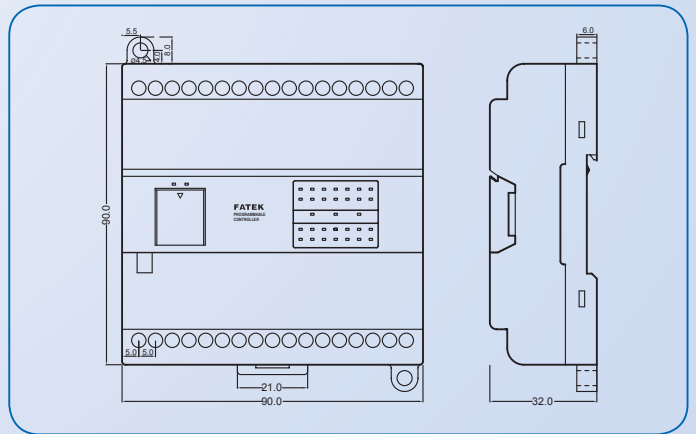


Figure 5 Standard

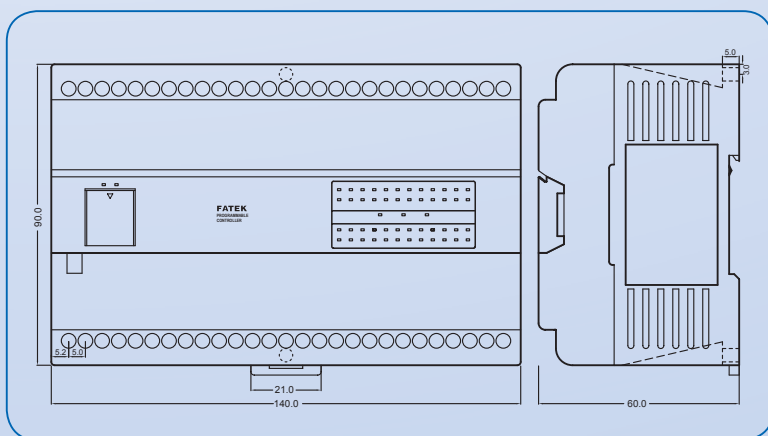
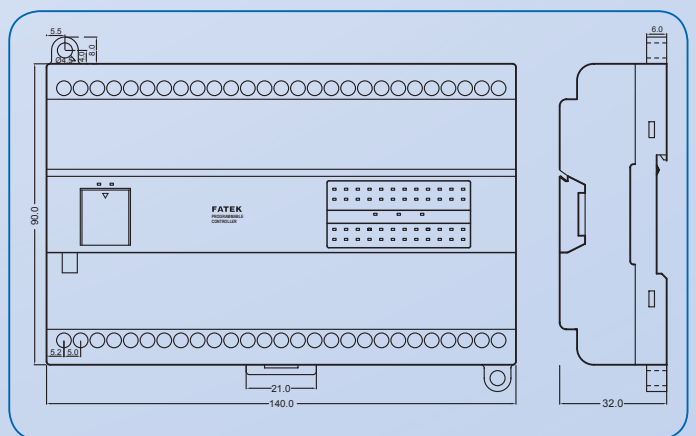


Figure 6 Slim



# Dimensions

Figure 7 Standard

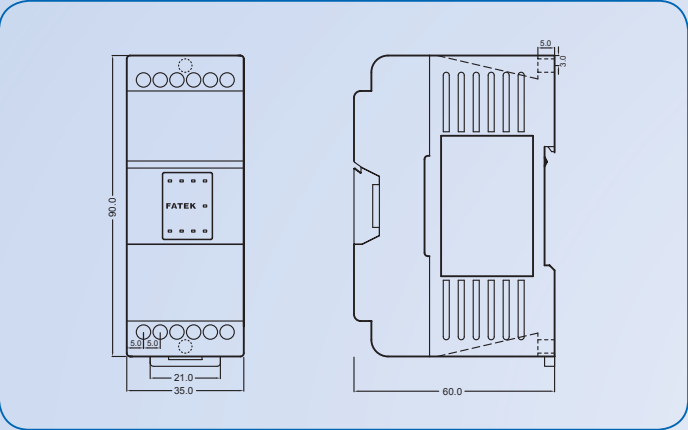


Figure 8 Slim

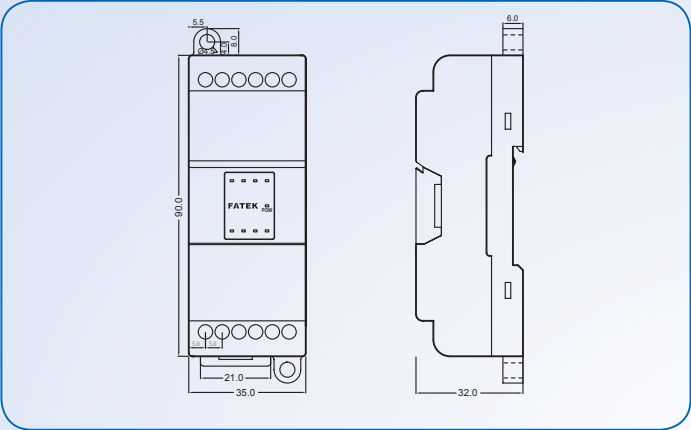


Figure 9 Standard

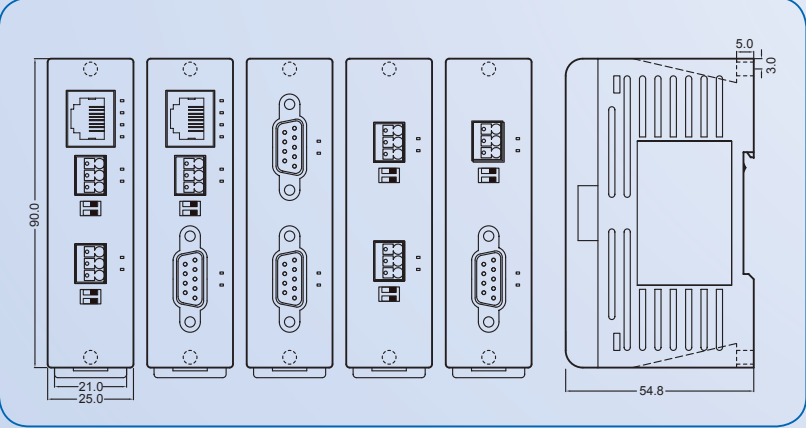


Figure 10 Slim

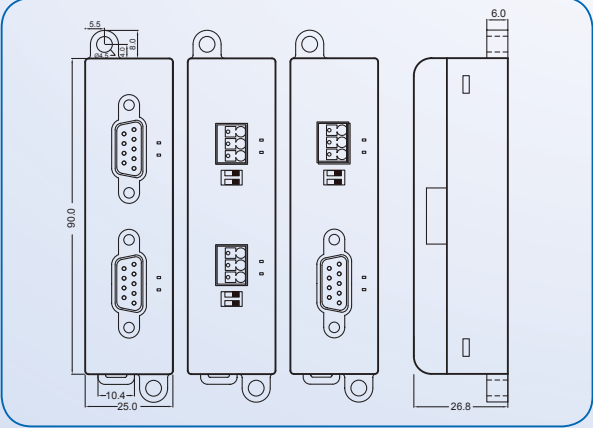


Figure 11 Standard

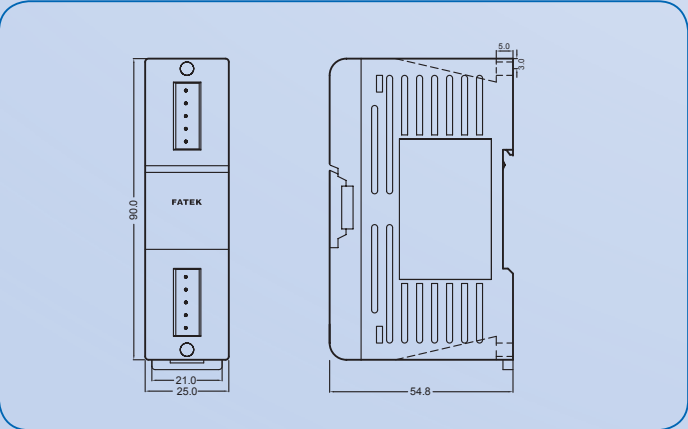
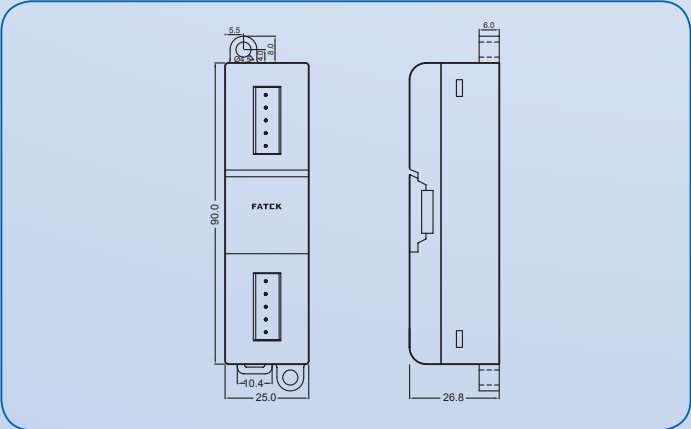


Figure 12 Slim



# Model List

| Item Name                    |                                          | Model             | Specifications                                                                                                                                                                                                                                                             |
|------------------------------|------------------------------------------|-------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Main Units                   | B1 Main Units                            | B1-10M ◇△ - ◎☆    | 6 points 24VDC digital input (4 points 50KHz, 2 points total 5KHz), 4 points relay output or transistor output (2 points 50KHz), built-in 1-2 communication ports, left side is expandable 0-2 modules, right side is expandable up to 80 I/O points                       |
|                              |                                          | B1-14M ◇△ - ◎☆    | 8 points 24VDC digital input (4 points 50KHz, 4 points total 5KHz), 6 points relay output or transistor output (2 points 50KHz), built-in 1-2 communication ports, left side is expandable 0-2 modules, right side is expandable up to 80 I/O points                       |
|                              |                                          | B1-20M ◇△ - ◎☆    | 12 points 24VDC digital input (6 points 50KHz, 6 points total 5KHz), 8 points relay output or transistor output (4 points 50KHz), built-in 1-2 communication ports, left side is expandable 0-2 modules, right side is expandable up to 80 I/O points                      |
|                              |                                          | B1-24M ◇△ - ◎☆    | 14 points 24VDC digital input (8 points 50KHz, 6 points total 5KHz), 10 points relay output or transistor output (4 points 50KHz), built-in 1-2 communication ports, left side is expandable 0-2 modules, right side is expandable up to 80 I/O points                     |
|                              |                                          | B1-32M ◇△ - ◎☆    | 20 points 24VDC digital input (8 points 50KHz, 8 points total 5KHz, 4 points low speed), 12 points relay output or transistor output (6 points 50KHz), built-in 1-2 communication ports, left side is expandable 0-2 modules, right side is expandable up to 80 I/O points |
|                              |                                          | B1-40M ◇△ - ◎☆    | 24 points 24VDC digital input (8 points 50KHz, 8 points total 5KHz, 8 points low speed), 16 points relay output or transistor output (6 points 50KHz), built-in 1-2 communication ports, left side is expandable 0-2 modules, right side is expandable up to 80 I/O points |
|                              | B1z Main Units                           | B1z-10M ◇△ - ◎☆   | 6 points 24VDC digital input (4 points 50KHz, 2 points total 5KHz), 4 points relay output or transistor output (2 points 50KHz), built-in 1 communication port, both sides are not expandable                                                                              |
|                              |                                          | B1z-14M ◇△ - ◎☆   | 8 points 24VDC digital input (4 points 50KHz, 4 points total 5KHz), 6 points relay output or transistor output (2 points 50KHz), built-in 1 communication port, both sides are not expandable                                                                              |
|                              |                                          | B1z-20M ◇△ - ◎☆   | 12 points 24VDC digital input (6 points 50KHz, 6 points total 5KHz), 8 points relay output or transistor output (4 points 50KHz), built-in 1 communication port, both sides are not expandable                                                                             |
|                              |                                          | B1z-24M ◇△ - ◎☆   | 14 points 24VDC digital input (8 points 50KHz, 6 points total 5KHz), 10 points relay output or transistor output (4 points 50KHz), built-in 1 communication port, both sides are not expandable                                                                            |
|                              |                                          | B1z-32M ◇△ - ◎☆   | 20 points 24VDC digital input (8 points 50KHz, 8 points total 5KHz, 4 points low speed), 12 points relay output or transistor output (6 points 50KHz), built-in 1 communication port, both sides are not expandable                                                        |
|                              |                                          | B1z-40M ◇△ - ◎☆   | 24 points 24VDC digital input (8 points 50KHz, 8 points total 5KHz, 8 points low speed), 16 points relay output or transistor output (6 points 50KHz), built-in 1 communication port, both sides are not expandable                                                        |
| Right Side Expansion Modules | DIO Expansion Modules                    | B1-8X ☆           | 8 points 24VDC digital input                                                                                                                                                                                                                                               |
|                              |                                          | B1-8Y ◇☆          | 8 points relay or transistor output                                                                                                                                                                                                                                        |
|                              |                                          | B1-8XY ◇☆         | 4 points 24VDC digital input, 4 points relay or transistor output                                                                                                                                                                                                          |
|                              |                                          | B1-16X ☆          | 16 points 24VDC digital input                                                                                                                                                                                                                                              |
|                              |                                          | B1-16Y ◇☆         | 16 points relay or transistor output                                                                                                                                                                                                                                       |
|                              |                                          | B1-16XY ◇☆        | 8 points 24VDC digital input, 8 points relay or transistor output                                                                                                                                                                                                          |
|                              |                                          | B1-24XY ◇☆        | 14 points 24VDC digital input, 10 points relay or transistor output                                                                                                                                                                                                        |
|                              |                                          | B1-40XY ◇☆        | 24 points 24VDC digital input, 16 points relay or transistor output                                                                                                                                                                                                        |
| Left Side Expansion Modules  | AIO Modules                              | B1-L2DA ☆         | 2 channels, 12-bit analog output module (0~10V or 0~20mA)                                                                                                                                                                                                                  |
|                              |                                          | B1-L4AD ☆         | 4 channels, 12-bit analog input module (0~10V or 0~20mA)                                                                                                                                                                                                                   |
|                              |                                          | B1-L2A2D ☆        | 2 channels, 12-bit analog input + 2 channels, 12-bit analog output combo analog module (0~10V or 0~20mA)                                                                                                                                                                   |
|                              |                                          | B1-L4NTC ☆        | 4 channels, NTC temperature input module, 12-bit resolution, measuring range 100Ω~100KΩ                                                                                                                                                                                    |
|                              | Communication Modules                    | B1-CM2 ☆          | 1 port RS232 (Port 2) communication module                                                                                                                                                                                                                                 |
|                              |                                          | B1-CM5 ☆          | 1 port RS485 (Port 2) communication module                                                                                                                                                                                                                                 |
|                              |                                          | B1-CM22 ☆         | 2 ports RS232 communication module                                                                                                                                                                                                                                         |
|                              |                                          | B1-CM55 ☆         | 2 ports RS485 communication module                                                                                                                                                                                                                                         |
|                              |                                          | B1-CM25 ☆         | 1 port RS232 (Port1) + 1 port RS485 (Port2) communication module                                                                                                                                                                                                           |
|                              |                                          | B1-CM25E          | 1 port RS232 (Port1) + 1 port RS485 (Port2) + Ethernet network interface communication module                                                                                                                                                                              |
|                              |                                          | B1-CM55E          | 2 ports RS485 (Port1, Port2) + Ethernet network interface communication module                                                                                                                                                                                             |
|                              |                                          | B1-CMZB ☆         | ZigBee communication module                                                                                                                                                                                                                                                |
| FBs Compatible Peripheral    | Memory Pack                              | FBs-PACK          | B1/B1z/FBs-PLC program memory pack with 20K Words program, 20K Words register, write protection switch                                                                                                                                                                     |
|                              | PWMDA Module                             | PWMDA             | 10-bit single channel pulse width modulation (PWM) 0~10V analog output (AO) module                                                                                                                                                                                         |
|                              | Programming Devices                      | FP-08             | B1/B1z/FBs-Series PLC handheld programmer                                                                                                                                                                                                                                  |
|                              |                                          | Winproladder      | FATEK-PLC Winproladder programming software                                                                                                                                                                                                                                |
|                              | RFID Card                                | CARD-H            | Read/Write RFID card (for FBs-DAP-BR/CR and FBs-PEPR)                                                                                                                                                                                                                      |
|                              | Simple HMI                               | FBs-PEP/PEPR      | Multi-characters with graphics-based Parameter Entry Panel, built-in RFID Read/Write module with PEPR                                                                                                                                                                      |
|                              |                                          | FBs-DAP-B/BR      | 16 x 2 LCD character display, 20 keys keyboard, 24VDC power supply, RS485 comm. port, built-in RFID Read/Write module with BR                                                                                                                                              |
|                              |                                          | FBs-DAP-C/CR      | 16 x 2 LCD character display, 20 keys keyboard, 5VDC power supply, RS232 comm. port, built-in RFID Read/Write module with CR                                                                                                                                               |
|                              | General Purpose Communication Converters | FBs-CM25C         | General purpose RS232 to RS485/RS422 communication interface converter with optical isolation                                                                                                                                                                              |
|                              |                                          | FBs-CM5R          | General purpose RS485 repeater with optical isolation                                                                                                                                                                                                                      |
|                              |                                          | FBs-CM5H          | General purpose 4 ports RS485 HUB with optical isolation, RS485 can be connected as star connection                                                                                                                                                                        |
|                              |                                          | FBs-CMZBR         | ZigBee communication repeater                                                                                                                                                                                                                                              |
|                              |                                          | FBs-U2C-MD-180    | Communication converter cable with standard USB AM connector to RS232 Mini-DIN 4M connector (used in standard PC USB to FBs main unit Port0 RS232), length 180cm                                                                                                           |
|                              | Communication Cables                     | FBs-232P0-9F-150  | Mini-DIN 4M to DB9F communication cable (FBs main unit Port 0 RS232 connect to standard DB9M), length 150cm                                                                                                                                                                |
|                              |                                          | FBs-232P0-9M-400  | Mini-DIN 4M to DB9M communication cable (FBs main unit Port 0 RS232 connect to standard DB9F), length 400cm                                                                                                                                                                |
|                              |                                          | FBs-232P0-MD-200  | Mini-DIN 4M to Mini-DIN 4M communication cable (FBs main unit Port 0 RS232 connect to FBs-PEP/PEPR), length 200cm                                                                                                                                                          |
|                              |                                          | FBs-232P0-MDR-200 | Mini-DIN 4M to 90° Mini-DIN 4M communication cable(FBs main unit Port0 RS232 connect to FBs-PEP/PEPR), length 200cm                                                                                                                                                        |

- ◇ : R – Relay output, T. – Transistor SINK (NPN) output, J. – SOURCE (PNP) output
- △ : 2 – built-in 1 RS232 communication port,  
U – built-in 1 USB communication port, (special order) } left side of B1 main units can expand 1 analog module + 1 communication module (1 port) or 1 communication module (1 or 2 ports)  
25 – built-in 2 communication ports ( RS232 + RS485 ), only B1 main units provided, and left side is not expandable
- ◎ : AC – 100~240VAC power supply, D12—12VDC power supply, D24—24VDC power supply
- ☆ : Blank – Standard case, -S – Slim case (units with AC power supply has no slim case)

# **FATEK<sup>®</sup>** AUTOMATION CORPORATION

26FL., NO. 29, SEC. 2, JUNGJENG E. RD., DANSHUEI DIST.,  
NEW TAIPEI CITY 25170, TAIWAN, R.O.C.

TEL : +886-2-2808-2192

FAX : +886-2-2809-2618

E-mail : [sales@fatek.com](mailto:sales@fatek.com)  
          [tech@fatek.com](mailto:tech@fatek.com)

Website : [www.fatek.com](http://www.fatek.com)