FATEK® The Brand You Can Rely on

FBs - Series
Programmable Logic Controller

- Cutting edge in PLC
- State of the art technology
- Compact & Powerful
- Extensive product range
- Reliable & Durable

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.....more than a decade of unsurpassed '

"Quality" and "Functionality"

Contents

Features

SoC-FATEK's Core Technology

The FBs-PLC's design incorporates a "System on Chips"(SoC) developed in-house by Fatek Corporation. The chip consists of over 120,000 gates which integrates powerful features such as a Central Processing Unit (CPU), Hardware Logic Solver (HLS), five high-speed communication ports, four sets of hardware high-speed counters / timers, four axes of high-speed pulse outputs for NC positioning control (with linear interpolation or dynamic tracking) 16 high-speed interrupts or captured inputs. The FBs represents high functionality and reliability with exceptional value compared to other PLC's in its class.

User friendly and powerful instruction sets

The FBs-PLC has more than 300 instructions which adopts a user friendly and readable multi-input/multi-output function structure, with multi-input instruction structure can derive many types of functionality which other brands of PLC's may require the use of many instructions to achieve this. Also the operation result can be directly sent to internal or external outputs. To increase the program readability, the inputs or outputs for each function instruction have their own mnemonic symbol attached and the content of each operand is also displayed. For high-end applications, such as PLC networking (LINK), PID control and NC positioning etc, the FBs-PLC provides dedicated convenient instructions to assist in program development.

Communication function (up to 5 ports including RS232, RS485, USB, Ethernet and GSM)

Via the five high-speed communication ports included in the SoC, the FBs-PLC's communication capability is outstanding with all five ports operating at a maximum speed of 921.6Kbps. Communications can be achieved using ASCII code or the double-speed binary code. Along with FATEK's standard protocol, Modbus ASCII/RTU/TCP or user-definable protocol are also available. The FBs.-PLC also provides the option of six different communication boards and eight different communication modules for various types of communication applications. With their high speed and functionality the FBs-PLC has the greatest number of communication ports than any other PLC in its class. Each communication port comes standard with LED indicators for transmission (TX) and reception (RX) to enable the user to monitor the operation.

Up to 4 sets of high-speed pulse width modulation (HSPWM) output

The SoC inside the FBs-PLC incorporates four sets of hardware high-speed pulse width modulation outputs with a maximum frequency of 184.32KHz and 18.432KHz with resolutions of 1% and 0.1%, respectively. Different from the PWM function operated by software alone in other brands of PLC, the hardware driven high-speed PWM in the FBs-PLC operates with high precision and stability which provides the user easy control with precise accuracy.

PLC & NC Control in one and Dedicated NC Positioning Language

NC Position Control is incorporated into the SoC of the FBs-PLC which integrates PLC+NC control into one unit in order for resources sharing and reducing the need of data exchange. The NC position control adopts special positioning command language, which allows programming by mechanical or electrical units and changing control parameters during execution. One single unit has up to four axes outputs with a maximum frequency of 200KHz (MC) or 920KHz (MN) and equipped with multi-axial linear interpolation and dynamic tracking. If combined with the four sets of built-in HHSC, it can achieve positioning control with closed loop precision.

Integrated high-speed counters with counting frequency up to 920 KHz

The FBs-PLC as standard has up to 4 sets of hardware high-speed counters (HHSC) and 4 sets of software high-speed counters (SHSC). The highest counting frequency of a HHSC is 200KHz (MC) or 920KHz (MN). Each HHSC also has a clear and mask function. There are 8 counting modes including U/D, U/Dx2, P/R, P/Rx2, A/B, A/Bx2, A/Bx3 and A/Bx4 which makes the HHSC very powerful and efficient. For example, if the encoder, running at 200 pulses per revolution, adopts A/Bx4 mode the FBs-PLC can achieve the same result that a 800 pulses per revolution encoder can provide. The counter is implemented in the hardware so as not to occupy CPU processing time.

High-speed timers (HST)

The FBs-PLC is the only PLC in this class providing 0.1mS high-speed timers (the FBs-PLC having one 16-bit and 4 sets of 32-bit HST). Currently, the fastest time base of high speed timers used in other brands of PLC's is 1mS. By incorporating the interrupt function of the FBs-PLC the accuracy of 0.1mS time base high-speed timer of FBs-PLC is further enhanced and can easily achieve more precise speed detection or can be used as a frequency meter. In most cases, expensive speed detection equipment can be replaced by the economical FBs-PLC.

FATEK's Powerful Communication Features

The five communication ports in FBs-PLC can simultaneously connect to various intelligent peripherals with available interfaces such as USB, RS232, RS485 and Ethernet. Besides adopting FATEK standard communication protocol or Modbus protocol or conducting communication through the FATEK communication server, the user also can use CLINK commands to define the dedicated protocol to actively or passively establish the connection with any intelligent peripherals.

Single unit with 16 points of high-speed interrupt

The FBs-PLC provides 16 points of external interrupts. The interrupt is edge driven and the user can define which edge triggers the interrupt and can be positive, negative or both edges. The interrupts can perform high speed, emergency processing which can withstand the time jilter caused by the delay and deviation of the scan time and can be used for precision high speed positioning, machine home and high speed RPM measurement applications.

Up to 36 points of captured input

The SoC in the FBs-PLC has a capture input function, which captures and stores the external pulse of an input shorter than the scanning time of the CPU. Compared to PLC's in this class that either lack this capability or require highly sophisticated interrupt functions (which increase the CPU processing time), the FBs-PLC can handle this task easily as a general input, easily configured with high efficiency and no detriment the CPU scan time.

Complete range of peripherals

In addition to the 204 models of main CPU units, the FBs-PLC also provides 65 models of expansion I/O for selection. The expansion I/O modules include basic DI/O and AI/O, 7/16-segment LED display module, 8 types (J,K,R,S,E,T,B,N) thermocouple, Pt100, Pt1000 RTD temperature measurement modules. The FBs-PLC also provides a FBs-DAP LCD data access panel which can be linked together with a single RS485 bus. The FBs-DAP can be a simple Timer/Counter editor or it can also be used as a simple human machine interface through the function of user definable keys and message display. The FBs-DAP can be equipped with a wireless RFID sensing module and can be applied to such applications as entrance control, parking equipment and elevator control amongst others.

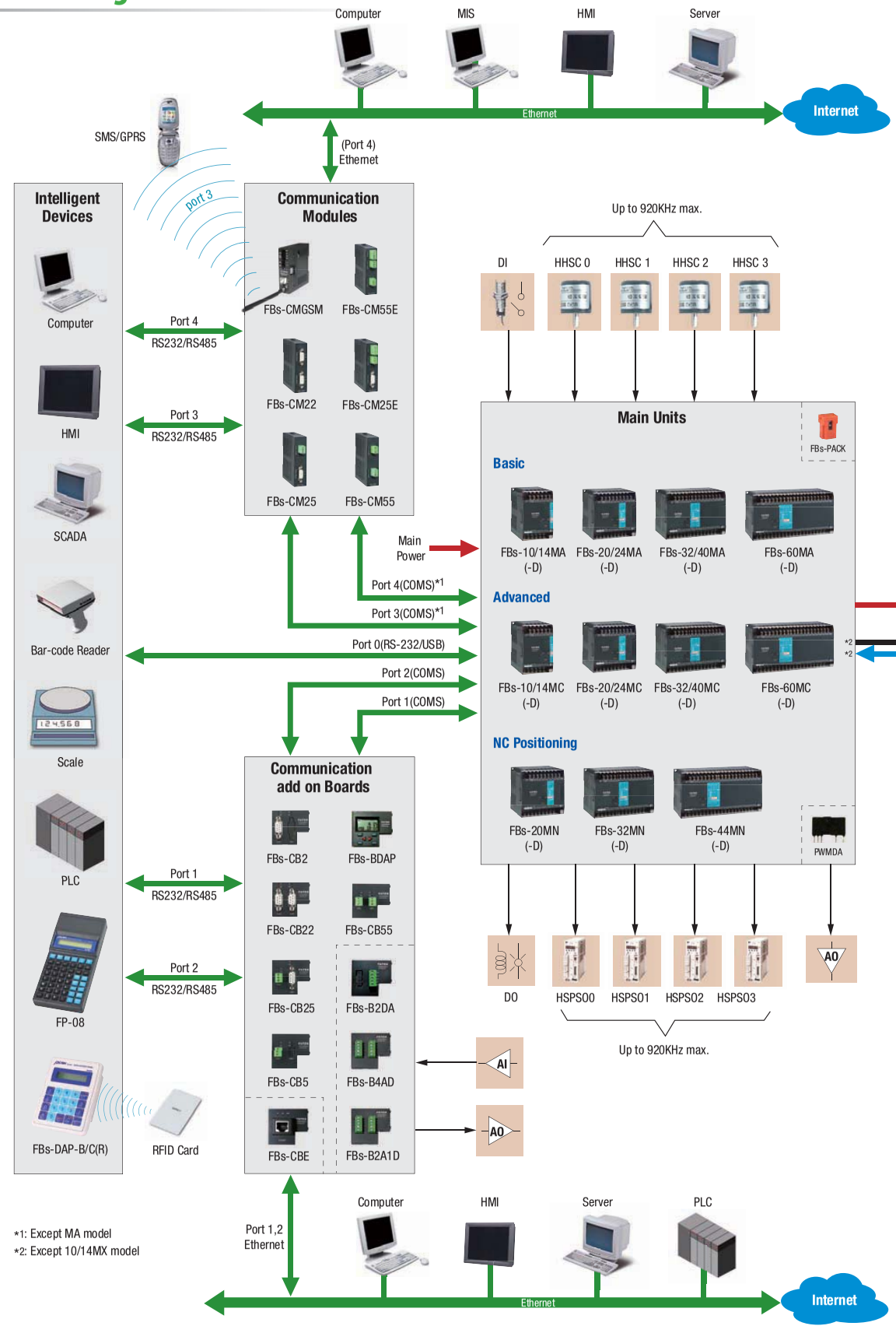
Open communication driver

The open communication protocol of the FBs-PLC is supported by all major brands of graphic supervisory software (SCADA) and leading brands of Human-Machine Interfaces (HMI) and can be directly connected with the FBs-PLC via serial and Ethernet interface. FATEK also provides Modbus protocol and FATEK DDE standard communication server or third-party OPC server for the user to easily connect the FBs-PLC to various control or supervisory systems.

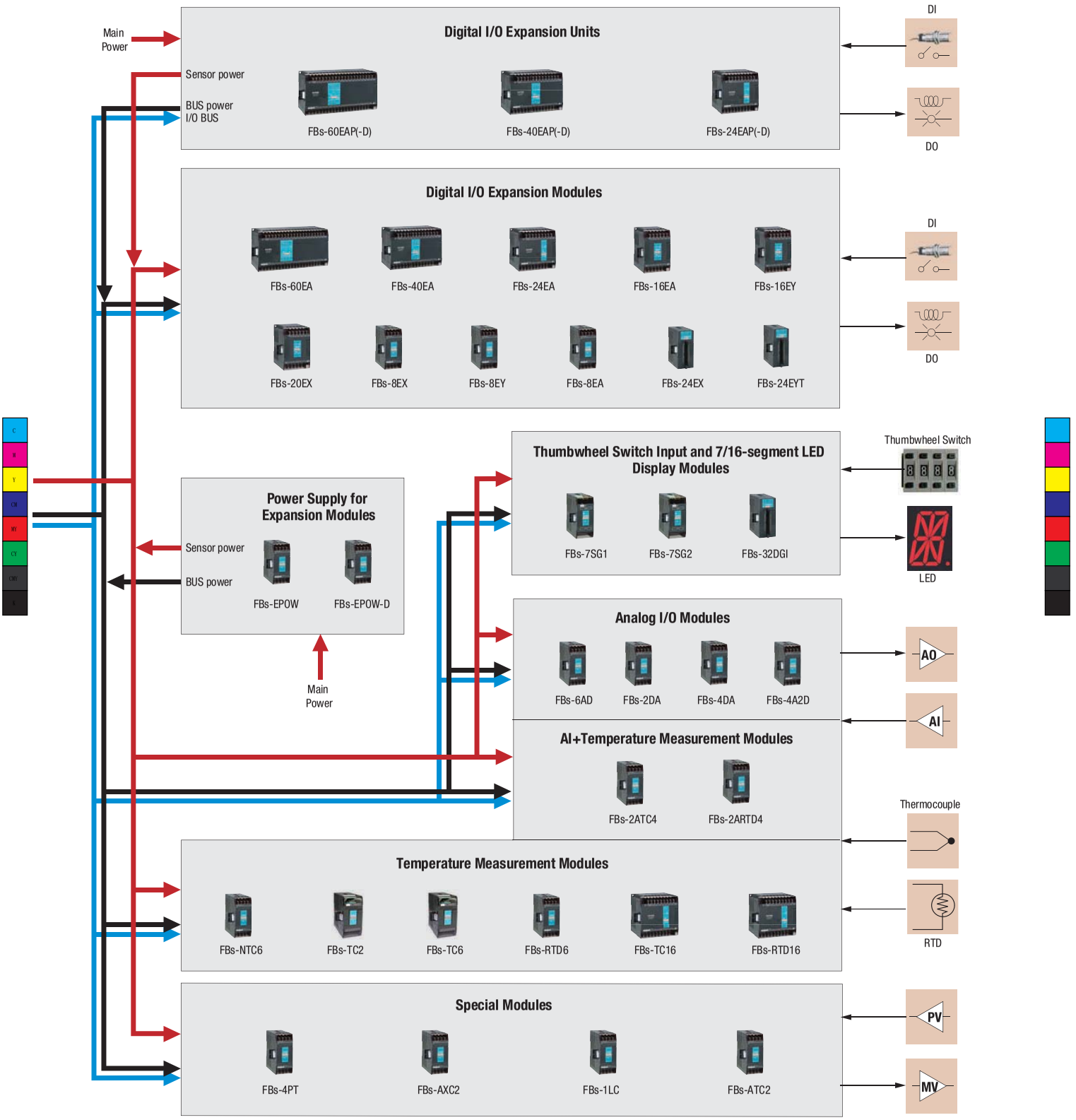
User-friendly operating environment

"WinProladder" is the Windows-based ladder diagram programming software for the FBs-PLC. It provides a user-friendly operating environment with editing, monitoring and debugging functions which allows the user to become familiar with the operation of the software in a very short time. The powerful editing function of WinProladder, assisted with keyboard, mouse and on-line help (of ladder instructions and operating guide) greatly reduces programming development time. Features which can displays the data registers directly in the ladder diagram and provide multiple status pages for monitoring gives the user the ability to monitor and debug easily.

System Configuration



*1: Except MA model
*2: Except 10/14MX model



Model Specifications

Basic main units (MA)

Spec. \ Model			FBs-10MA	FBs-10MAT	FBs-14MA	FBs-14MAT	FBs-20MA	FBs-20MAT	FBs-24MA	FBs-24MAT
Digital input	24VDC	Medium low speed (total 5KHz)	4 points							
		Low speed	2 points		4 points		8 points		10 points	
Digital output	Relay	AC/DC(2A)	4 points	—	6 points	—	8 points	—	10 points	—
	Transistor (5 ~ 30VDC)	Medium speed 10KHz (0.5A)	—	4 points	—	4 points	—	4 points	—	4 points
		Low speed (0.5A)	—	—	—	2 points	—	4 points	—	6 points
Comm. port	Built-in		1 port (Port0, USB or RS232)							
	Expandable		2 ports (Port1 ~ 2, RS485 or RS232 or Ethernet)							
Calendar			option							
Built-in power supply			POW-14(AC)/DPOW-10(DC)				POW-24(AC)/DPOW-16(DC)			
Wiring mechanism			7.62 mm terminal block							
Dimension			Figure 2				Figure 1			

Spec. \ Model			FBs-32MA	FBs-32MAT	FBs-40MA	FBs-40MAT	FBs-60MA	FBs-60MAT
Digital input	24VDC	Medium low speed (total 5KHz)	4 points					
		Low speed	16 points		20 points		32 points	
Digital output	Relay	AC/DC(2A)	12 points	—	16 points	—	24 points	—
	Transistor (5 ~ 30VDC)	Medium speed 10KHz (0.5A)	—	4 points	—	4 points	—	4 points
		Low speed (0.5A)	—	8 points	—	12 points	—	20 points
Comm. port	Built-in		1 port (Port0, USB or RS232)					
	Expandable		2 ports (Port1 ~ 2, RS485 or RS232 or Ethernet)					
Calendar			option					
Built-in power supply			POW-24(AC)/DPOW-16(DC)					
Wiring mechanism			7.62 mm terminal block					
Dimension			Figure 1					

Advanced main units (MC)

*: Default

Spec. \ Model			FBs-10MC	FBs-10MCT	FBs-14MC	FBs-14MCT	FBs-20MC	FBs-20MCT	FBs-24MC	FBs-24MCT
Digital input	24VDC	High speed (200KHz)	2*~4 points				2*~6 points		2*~8 points	
		Medium speed (20KHz)	2*~0 points				4*~0 points		6*~0 points	
		Medium low speed (total 5KHz)	2 points		4 points		6 points			
Digital output	Relay	AC/DC(2A)	4 points	—	6 points	—	8 points	—	10 points	—
	Transistor (5 ~ 30VDC)	High speed 200KHz (0.5A)	—	4 points	—	4*~6 points	—	4*~8 points	—	4*~8 points
		Medium speed 20KHz (0.5A)	—	—	—	2*~0 points	—	4*~0 points	—	4*~0 points
		Low speed (0.5A)	—	—	—	—	—	—	—	2 points
Comm. port	Built-in		1 port (Port0, USB or RS232)							
	Expandable		4 ports (Port1 ~ 4, RS485 or RS232 or Ethernet or GSM)							
Calendar			Built-in							
Built-in power supply			POW-14(AC)/DPOW-10(DC)				POW-24(AC)/DPOW-16(DC)			
Wiring mechanism			7.62 mm terminal block				7.62 mm detachable terminal block			
Dimension			Figure 2				Figure 1			

*: Default

Spec. \ Model			FBs-32MC	FBs-32MCT	FBs-40MC	FBs-40MCT	FBs-60MC	FBs-60MCT
Digital input	24VDC	High speed (200KHz)	2*~8 points					
		Medium speed (20KHz)	6*~0 points					
		Medium low speed (total 5KHz)	8 points					
		Low speed	4 points		8 points		20 points	
Digital output	Relay	AC/DC(2A)	12 points	—	16 points	—	24 points	—
	Transistor (5 ~ 30VDC)	High speed 200KHz (0.5A)	—	4*~8 points	—	4*~8 points	—	4*~8 points
		Medium speed 20KHz (0.5A)	—	4*~0 points	—	4*~0 points	—	4*~0 points
		Low speed (0.5A)	—	4 points	—	8 points	—	16 points
Comm. port	Built-in		1 port (Port0, USB or RS232)					
	Expandable		4 ports (Port1 ~ 4, RS485 or RS232, Ethernet or GSM)					
Calendar			Built-in					
Built-in power supply			POW-24(AC)/DPOW-16(DC)					
Wiring mechanism			7.62 mm detachable terminal block					
Dimension			Figure 1					

NC positioning main units (MN)

Spec. \ Model			FBs-20MN	FBs-20MNT	FBs-32MN	FBs-32MNT	FBs-44MN	FBs-44MNT
Digital input	5VDC	Ultra high speed (920KHz)	2 points (1 axis)		4 points (2 axes)		8 points (4 axes)	
	24VDC	Medium speed (20KHz)	4 points		4 points		—	
		Medium low speed (total 5KHz)	6 points		8 points			
		Low speed	—		4 points		12 points	
Digital output	Relay	AC/DC(2A)	6 points	—	8 points	—	8 points	—
	5VDC	Differential ultra high speed 920KHz	2 points (1axis)		4 points (2 axes)		8 points (4 axes)	
	Transistor (5 ~ 30VDC)	Medium speed 20KHz (0.5A)	—	6 points	—	4 points	—	—
		Low speed (0.5A)	—	—	—	4 points	—	8 points
Comm. port	Built-in		1 port (Port0, USB or RS232)					
	Expandable		4 ports (Port1 ~ 4, RS485 or RS232, Ethernet or GSM)					
Calendar			Built-in					
Built-in power supply			POW-24(AC)/DPOW-16(DC)					
Wiring mechanism			7.62 mm detachable terminal block					
Dimension			Figure 1					

Digital I/O expansion units

Spec. \ Model			FBs-24EAP	FBs-24EAPT	FBs-40EAP	FBs-40EAPT	FBs-60EAP	FBs-60EAPT
Digital input	24VDC	Low speed	14 points		24 points		36 points	
Digital output	Relay	AC/DC(2A)	10 points	—	16 points	—	24 points	—
	Transistor (5 ~ 30VDC)	Low speed (0.5A)	—	10 points	—	16 points	—	24 points
Built-in power supply			POW-24(AC)/DPOW-16(DC)					
Wiring mechanism			7.62 mm terminal block					
Dimension			Figure 1					

Model Specifications

Power supplies for expansion modules


Spec. \ Model		FBs-EPOW	FBs-EPOW-D
Capacity of output power	5VDC Bus power	400mA	400mA
	24VDC Bus power	250mA	165mA
	24VDC Sensor power	250mA	165mA
Max. power consumption		100 ~ 240VAC -15%/+10%, 21W	15VDC/24VDC -15%/+20%, 15W
Wiring mechanism		7.62 mm terminal block	
Dimension		Figure 4	

Digital I/O expansion modules








Spec. \ Model			FBs-8EA	FBs-8EAT	FBs-8EX	FBs-8EY	FBs-8EYT	FBs-16EA	FBs-16EAT	FBs-20EX
Digital input	24VDC	Low speed	4 points		8 points	—	—	8 points		20 points
Digital output	Relay	AC/DC(2A)	4 points	—	—	8 points	—	8 points	—	—
	Transistor (5~30VDC)	Low speed (0.5A)	—	4 points	—	—	8 points	—	8 points	—
Wiring mechanism			7.62 mm terminal block							
Dimension			Figure 4					Figure 3		






Spec. \ Model			FBs-16EY	FBs-16EYT	FBs-24EX	FBs-24EYT	FBs-24EA	FBs-24EAT
Digital input	24VDC	Low speed	—	—	24 points	—	14 points	
Digital output	Relay	AC/DC(2A)	16 points	—	—	—	10 points	—
	Transistor (5~30VDC)	High density Low speed (0.1A)	—	—	—	24 points	—	—
		Low speed (0.5A)	—	16 points	—	—	—	10 points
Wiring mechanism			7.62 mm terminal block		30 pins header with latch		7.62 mm terminal block	
Dimension			Figure 3		Figure 6		Figure 1	




Spec. \ Model			FBs-40EA	FBs-40EAT	FBs-60EA	FBs-60EAT
Digital input	24VDC	Low speed	24 points		36 points	
Digital output	Relay	AC/DC(2A)	16 points	—	24 points	—
	Transistor (5~30VDC)	Low speed (0.5A)	—	16 points	—	24 points
Wiring mechanism			7.62 mm terminal block			
Dimension			Figure 1			

Thumbwheel switch input module

Spec. \ Model	FBs-32DGI
Refresh time for input	10mS max.
Input capability	8 words (32 digits/128 individual points)
Input method	1/8 duty multiplexing input scan
Wiring mechanism	30 pins header with latch
Dimension	Figure 6

7/16-segment LED display modules

Spec. \ Model			FBs-7SG1	FBs-7SG2
Display mode	Decoding display		4 bits to represent a character. It can display 16 kinds of pre-decoded character including 0 ~ 9, –, H, E, c, t and all blank	
	Non-decoding display		Each segment controlled by 1 individual bit	
Display number of character or points of LED			8 (4*) characters or 64 points individual LED	16 (8*) characters or 128 points individual LED
Refresh time for display			10mS max.	
LED driving specification	Driving current		40mA /segment	
	Display method		1/8 duty multiplexing display	
	Driving voltage	Low voltage	5VDC (can be 10% up)	
		High voltage	7.5V, 10V, 12.5V selectable (can be 10% up)	
	Fine tune of voltage drop		0.6V, 1.2V, 1.8V selectable	
Over voltage driving indication			Each channel has individual Over Voltage (O.V.) driving LED indication	
Isolation method			Transformer (power) and photocouple (signal) isolation	
Power consumption			24VDC –15%/+20%,static consumption is 2VA max., dynamic current is increased according to display.	
Wiring mechanism			16 pins flat cable, 2.54mm header connector	
Dimension			Figure 4	

* : For 16-segment alphanumeric character

Analog input (AI) module

Spec. \ Model		FBs-6AD	
Input source		Voltage input	Current input
Number of input point		6 points / 14-bit	
Digital input value		-8192 ~ +8191 or 0 ~ 16383	
Input signal range	Bipolar	-10 ~ 10V or -5 ~ 5V	-20 ~ 20mA or -10 ~ 10mA
	Unipolar	0 ~ 10V or 0 ~ 5V	0 ~ 20mA or 0 ~ 10mA
Maximum resolution		0.3mV (5V/16384)	0.61μA (10mA/16384)
Accuracy		±1%	
Conversion time		Conversion once for each scan	
Maximum input signal		±15V	±30mA
Input impedance		63.2KΩ	250Ω
Isolation method		Transformer (power) and photocouple (signal) isolation	
Power consumption		24VDC –15%/+20%, 2VA max.	
Wiring mechanism		7.62 mm terminal block	
Dimension		Figure 4	

Model Specifications

Analog output (AO) modules


Spec. \ Model		FBs-2DA	FBs-4DA
Number of output point		2 points / 14-bit	4 points / 14-bit
Digital output value		-8192 ~ +8191 or 0 ~ 16383	
Output signal range	Bipolar	Voltage : -10 ~ 10V or -5 ~ 5V , Current : -20 ~ 20mA or -10 ~ 10mA	
	Unipolar	Voltage : 0 ~ 10V or 0 ~ 5V , Current : 0 ~ 20mA or 0 ~ 10mA	
Maximum Resolution		Voltage : 0.3mV (5V/16384) , Current : 0.61μA (10mA/16384)	
Accuracy		±1%	
Conversion time		Conversion once for each scan	
Allowable loading		Voltage : 500Ω ~ 1 MΩ : Current : 0Ω ~ 500Ω	
Isolation method		Transformer (power) and photocouple (signal) isolation	
Power consumption		24VDC –15%/+20%, 2VA max.	
Wiring mechanism		7.62 mm terminal block	
Dimension		Figure 4	

Temperature measurement modules






Spec. \ Model	FBs-TC2	FBs-TC6	FBs-TC16	FBs-RTD6	FBs-RTD16	FBs-NTC6
Number of input points	2 points	6 points	16 points	6 points	16 points	6 points
Sensor type and temperature measurement range	Thermocouple Sensor: J (-200～1200°C) E (-190～1000°C) K (-190～1300°C) T (-190～380°C) R (0～1800°C) B (350～1800°C) S (0～1700°C) N (-200～1000°C)			3-wire RTD sensor (JIS or DIN) Pt100(-200°C~850°C) Pt1000(-200°C~600°C)		NTC sensor 10 KΩ at 25°C, B optional -20°C ~ 100°C
Temperature compensation	Built-in cold junction compensation			—	—	—
Resolution	0.1°C					
Temperature refresh time	1 or 2 seconds	2 or 4 seconds	3 or 6 seconds	1 or 2 seconds	2 or 4 seconds	2 or 4 seconds
Overall Precision	± (1%+1°C)			± 1%		+/- 1 % of full scale at 25°C
Isolation method	Transformer (power) and photocouple (signal) isolation					
Power consumption	24VDC -15%/+20%,2VA max.					
Wiring mechanism	3.81 mm European terminal block		7.62 mm terminal block			
Dimension	Figure 4		Figure 1	Figure 4	Figure 1	Figure 4

AI/AO/Temperature combo modules



Spec. \ Model	FBs-4A2D	FBs-2ATC4	FBs-2ARTD4
Number of input/output point	4 points AI / 14-bit + 2 points AO / 14-bit	2 points AI / 14-bit + 4 points Temperature (TC)	2 points AI / 14-bit + 4 points Temperature (RTD)
Temperature input specification	—	Same as FBs-TC6	Same as FBs-RTD6
Analog input specification	Same as FBs-6AD	Same as FBs-6AD	Same as FBs-6AD
Analog output specification	Same as FBs-2DA / 4DA	—	—
Power consumption	24VDC -15%/+20%,2VA max.		
Wiring mechanism	7.62 mm terminal block		
Dimension	Figure 4		

Special modules




Spec. \ Model	FBs-4PT	FBs-ATC2	FBs-1LC	FBs-AXC2
Features	4 channels, 16-bit potential meter input module (Impedance range: 1K~10K Ω)	2 channels, auto. tuning temperature control module with 0.1°C resolution	1 channel, load cell module with 20-bit resolution	2 axes, with linear uncircular interpolation motion control module
Wiring mechanism	7.62 mm terminal block			
Dimension	Figure 4			

Communication modules (CM)





Spec. \ Model	FBs-CM22	FBs-CM55	FBs-CM25	FBs-CM25E	FBs-CM55E
Features	2 RS232 ports (Port3+Port4) with TX, RX indicators	2 RS485 ports (Port3+Port4) with TX, RX indicators	1 RS232 (Port3) + 1 RS485 (Port4) with TX, RX indicators	1 RS232 (Port3) + 1 RS485 (Port4) with Ethernet interface and RUN,LINK,TX, RX indicators	2 RS485 ports (Port3+Port4) with Ethernet interface and RUN,LINK,TX, RX indicators
Wiring mechanism	D-SuB female	3.81 mm European terminal block	D-SuB female 3.81 mm European terminal block		3.81 mm European terminal block
Dimension	Figure 5				




Spec. \ Model	FBs-CM25C	FBs-CM5R	FBs-CM5H	FBs-CMGSM
Features	General purpose optical isolation RS232↔ RS485/RS422 converter, with RX indicator	General purpose optical isolation RS485 repeater, with RX indicator	General purpose optical isolation 4 ports RS485 Hub, with ACT, COLLISION indicators	GPRS/GSM wireless communication module
Wiring mechanism	D-SuB female 3.81 mm European terminal block	3.81 mm European terminal block	7.62 mm terminal block	—
Dimension	Figure 5	Figure 5	Figure 4	Figure 5

Communication boards (CB)






Spec. \ Model	FBs-CB2	FBs-CB22	FBs-CB5	FBs-CB55	FBs-CB25	FBs-CBE
Features	1 port RS232 (Port 2) with TX, RX indicators	2 ports RS232 (Port 1+ Port 2) with TX, RX indicators	1 port RS485 (Port 2) with TX, RX indicators	2 ports RS485 (Port 1+ Port 2) with TX, RX indicators	1 port RS232 (Port 1) + 1 port RS485 (Port 2) with RX & TX indicators	1 port Ethernet with LINK, RX & TX indicators
Wiring mechanism	D-SuB female		3.81 mm European terminal block		D-SuB female 3.81 mm European terminal block	RJ-45

Analog I/O boards



Spec. \ Model	FBs-B2DA	FBs-B4AD	FBs-B2A1D
Features	2 channels, 12-bit analog output board (0~10V or 0~20mA)	4 channels, 12-bit analog input board (0~10V or 0~20mA)	2 channels, 12-bit analog input + 1 channel, 12-bit analog output combo analog board (0~10V or 0~20mA)
Wiring mechanism	3.81 mm European terminal block		

Model Specifications

Memory pack

Spec. \ Model	FBs-PACK
Memory	1M bits FLASH ROM
Memory capacity	20K words program + 20K words data
Write protection	DIP switch ON/OFF protection

PWMDA

Spec. \ Model	PWMDA
Output range	DC 0~10V
Output value	0~1000
Resolution	10mV(10V/1000)
Output impedance	1KΩ
Min. load(≥10V)	5.2KΩ
D/A conversion time	<50mS

RFID card

Spec. \ Model	CARD-H
Applicable DAP	FBs-DAP-BR/CR
Operated frequency	13.56MHz
Memory	64-bit with Cyclic Redundancy Check (CRC) on data
Working temperature	-25°C ~ 50°C (ISO7810)
Power source	Powered by RF
Receivable distance	10cm - 15cm
Writable times	at least 10000 times
Dimension(mm)	86 X 54 X 0.76
Weight	5g

FP-08 handheld programming panel

Easy to use and portable, with program editing, copying, status monitoring and debugging functions, most suitable for field maintenance.

Change working mode only by a single keystroke, without having tedious exit process from current working mode.

Spec. \ Model	FP-08
Power consumption	5V/100mA
Keyboard	48 silicon rubber keys
Display	16-character × 2, 5×7dot matrix LCD display, with LED backlighting
Communication port	RS232 serial communication port
Dimension	Figure 7

Data Access Panel

Spec. \ Model		FBs-DAP-B(R)	FBs-DAP-C(R)	FBs-BDAP
Display		16-character × 2, 5×7dot matrix LCD display, with LED backlighting		128 segments fixed-pattern LCD display
Key pads		20 (membrane)		6 (rubber)
Power consumption		24V,41mA (48mA) max.	5V,100mA (120mA) max.	5V,100mA max.
Communication Interface	Electric	RS485	RS232	Port1, CMOS
	Mechanism	5-pin European detachable terminal block	D-sub 9 pins male connector	—
	Number of linked station	Max. 16 stations	1	—
General features		Timer, counter, register, relay, access of contact in PLC		
Special features		Alarm, information display, user definable special quick keys		Station No. setup, Run/Stop Control Calendar* display and setup
Card access feature		Available only in -BR/-CR models, with maximum distance of 10 ~ 15 cm		—
Dimension		Figure 8		—

* The PLC main unit must be of calendar built-in type

Accessories

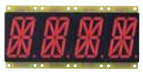



Spec. \ Model	LED.56R	LED.8R	LED2.3R	LED4.0R
Features	0.56" high-brightness, red color 7-segment LED display	0.8" high-brightness, red color 7-segment LED display	2.3" high-brightness, red color 7-segment LED display	4.0" high-brightness, red color 7-segment LED display




Spec. \ Model	LEDAN.8R	LEDAN2.3R	DB.56 (DB.56LEDR)	DB.8 (DB.8LEDR)
Features	0.8" high-brightness, red color 16-segment LED display	2.3" high-brightness, red color 16-segment LED display	0.56" 7-segment 8 digits LED display PCB (DB.56LEDR with LED installed)	0.8" 7-segment 8 digits LED display PCB (DB.8LEDR with LED installed)



Spec. \ Model	DB2.3 (DB2.3LEDR)	DB4.0 (DB4.0LEDR)	DBAN.8 (DBAN.8LEDR)	DBAN2.3 (DBAN2.3LEDR)
Features	2.3" 7-segment 8 digits LED display PCB (DB2.3LEDR with LED installed)	4.0" 7-segment 4 digits LED display PCB (DB4.0LEDR with LED installed)	0.8" 16-segment 4 digits LED display PCB (DBAN.8LEDR with LED installed)	2.3" 16-segment 4 digits LED display PCB (DBAN2.3LEDR with LED installed)




Spec. \ Model	FBs-232P0-9F-150	FBs-232P0-9M-400	FBs-USBP0-180	HD30-22AWG-200
Features	Dedicated communication cable for FBs main unit port 0 (RS232) to 9-pin D-sub female connector, length 150cm	Dedicated communication cable for FBs main unit port 0 (RS232) to 9-pin D-sub male connector, length 400cm	Communication cable for FBs main unit port 0 (USB) (commercial USB A↔B cable), length 180cm	22AWG I/O cable with 30pins socket, length 200cm (for FBs-24EX, 24EYT and 32DGI)