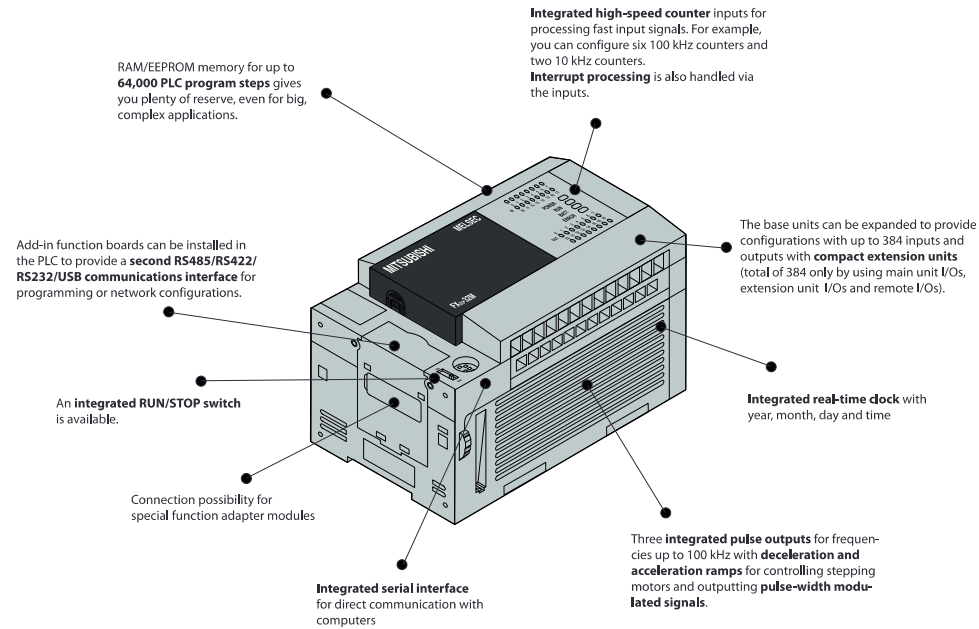
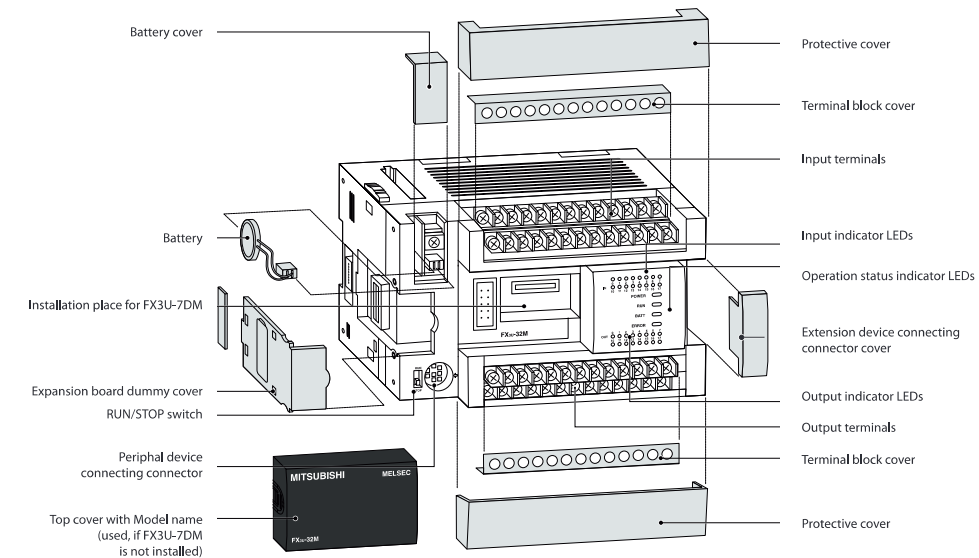


### The MELSEC FX3U series



2  
FX Base Units

### Description of the unit components

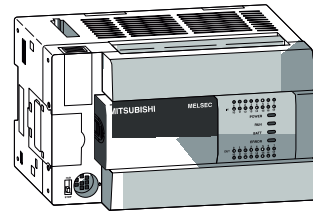


■ Base units

FX3S  FX3G  FX3GC  FX3GE  FX3U  FX3UC

2

FX Base Units



**Base units FX3U**

The FX3U series base units are available with 16, 32, 48, 64, 80 or 128 input/output points expandable to 384 points.

Models are available for selection with relay or transistor outputs.

- Integrated serial interface for communication between PCs and HMI
- Integrated positioning control
- Exchangeable interface modules for direct mounting into a base unit

- LEDs for indicating the input and output status
- Slot for memory cassettes
- Integrated real-time clock
- Expandable with digital I/O modules, special function modules and ADP modules
- User-friendly programming systems, including IEC 61131-3 (EN 61131-3) compatible programming software, HMIs and hand-held programming units

**Base units with 16 I/Os**

Specifications	FX3U-16 MR-DS	FX3U-16 MR/ES	FX3U-16 MT/DSS	FX3U-16 MT/ESS
Max. number inputs/outputs	16	16	16	16
Power supply	24 V DC	100–240 V AC	24 V DC	100–240 V AC
Integrated inputs	8	8	8	8
Integrated outputs	8	8	8	8
Output type	Relay	Relay	Transistor (source)	Transistor (source)
Power consumption	25 W	30 VA	25 W	30 VA
Weight	kg 0.6	0.6	0.6	0.6
Dimensions (WxHxD)	mm 130x90x86	130x90x86	130x90x86	130x90x86
<b>Order information</b>	Art. no. 231498	231486	231503	231492

**Base units with 32 I/Os**

Specifications	FX3U-32 MR/DS	FX3U-32 MR/ES	FX3U-32 MT/DSS	FX3U-32 MT/ESS
Max. number inputs/outputs	32	32	32	32
Power supply	24 V DC	100–240 V AC	24 V DC	100–240 V AC
Integrated inputs	16	16	16	16
Integrated outputs	16	16	16	16
Output type	Relay	Relay	Transistor (source)	Transistor (source)
Power consumption	30 W	35 VA	30 W	35 VA
Weight	kg 0.65	0.65	0.65	0.65
Dimensions (WxHxD)	mm 150x90x86	150x90x86	150x90x86	150x90x86
<b>Order information</b>	Art. no. 231499	231487	231504	231493

Note: Further special versions are available on request

## Base units with 48 I/Os

Specifications	FX3U-48 MR/DS	FX3U-48 MR/ES	FX3U-48 MT/ESS	FX3U-48 MT/DSS
Max. number inputs/outputs	48	48	48	48
Power supply	24 V DC	100–240 V AC	100–240 V AC	24 V DC
Integrated inputs	24	24	24	24
Integrated outputs	24	24	24	24
Output type	Relay	Relay	Transistor (source)	Transistor (source)
Power consumption	35 W	40 VA	40 VA	35 W
Weight	kg 0.85	0.85	0.85	0.85
Dimensions (WxHxD)	mm 182x90x86	182x90x86	182x90x86	182x90x86
<b>Order information</b>	Art. no. 231500	231488	231494	231505

## Base units with 64 I/Os

Specifications	FX3U-64 MR/DS	FX3U-64 MR/ES	FX3U-64 MT/ESS	FX3U-64 MT/DSS
Max. number inputs/outputs	64	64	64	64
Power supply	24 V DC	100–240 V AC	100–240 V AC	24 V DC
Integrated inputs	32	32	32	32
Integrated outputs	32	32	32	32
Output type	Relay	Relay	Transistor (source)	Transistor (source)
Power consumption	40 W	45 VA	45 VA	40 W
Weight	kg 1.0	1.0	1.0	1.0
Dimensions (WxHxD)	mm 220x90x86	220x90x86	220x90x86	220x90x86
<b>Order information</b>	Art. no. 231501	231489	231495	231506

## Base units with 80–128 I/Os

Specifications	FX3U-80 MR/DS	FX3U-80 MR/ES	FX3U-80 MT/DSS	FX3U-80 MT/ESS	FX3U-128 MR/ES	FX3U-128 MT/ESS
Max. number inputs/outputs	80	80	80	80	128	128
Power supply	24 V DC	100–240 V AC	24 V DC	100–240 V AC	100–240 V AC	100–240 V AC
Integrated inputs	40	40	40	40	64	64
Integrated outputs	40	40	40	40	64	64
Output type	Relay	Relay	Transistor (source)	Transistor (source)	Relay	Transistor (source)
Power consumption	45 W	50 VA	45 W	50 VA	65 VA	65 VA
Weight	kg 1.2	1.2	1.2	1.2	1.8	1.8
Dimensions (WxHxD)	mm 285x90x86	285x90x86	285x90x86	285x90x86	350x90x86	350x90x86
<b>Order information</b>	Art. no. 231502	231490	231507	231496	231491	231497

2

FX Base Units

■ Specifications □ FX3S □ FX3G □ FX3GC □ FX3GE  FX3U □ FX3UC

Environmental specifications

General specifications	Data
Ambient temperature	0–55 °C (storage temperature: –25–+75 °C)
Protection	IP10
Noise durability	1000 Vpp with noise generator; 1 μs at 30–100 Hz
Dielectric withstand voltage	AC PSU: 1500 V AC, 1 min./DC PSU: 500 V AC, 1 min.
Ambient relative humidity	5–95 % (non-condensing)
Shock resistance	Acc. to IEC 68-2-27: 15 g (3 times each in 3 directions for 11 ms)
Vibration resistance	Acc. to IEC 68-2-6: 1 g (resistance to vibrations from 57–150 Hz for 80 minutes along all 3 axes); 0.5 g for DIN rail mounting
Insulation resistance	5 MΩ, 500 V DC
Ground	Class D: Grounding resistance 100 Ω or less
Fuse rating	From FX3U-16M□ to FX3U-32M□: 3.15 A; from FX3U-48M□ to FX3U-128M□: 5 A
Environment	Avoid environments containing corrosive gases, install in a dust-free location.
Certifications	Please refer to pages 66–67

Electrical specifications

Power supply specifications	DC powered modules (FX3U-□M□/DS/DSS)	AC powered modules (FX3U-□MR/ES)	Output specifications	Relay-modules	Transistor-modules
Power supply	24 V DC (+20 %/-30 %)	100–240 V AC (+10 %/-15 %), 50/60 Hz	Switching voltage (max.)	V <240 V AC, <30 V DC	5–30 V DC
Inrush current at ON	—	30 A/<5 ms (at 100 V AC); 65 A/<5 ms (at 200 V AC)	Max. output current	A 2 – per output A 8 – per group*	0.5/0.3 <sup>Ⓢ</sup> 0.8/1.6 <sup>Ⓢ</sup>
Allowable momentary power failure time	5 ms	10 ms	Max. switching current	– inductive load 80 VA	12 W/7.2 W
Primary power supply	24 V DC	—	Response time	ms 10	<0.2 (Y0, Y1 <30 μs)
External power supply (24 V DC)	—	FX3U-16/32MR/ES: 400 mA/ FX3U-48–128MR/ES: 600 mA	Life of contacts (switching times) <sup>Ⓢ</sup>	3,000,000 at 20 VA; 1,000,000 at 35 VA; 200,000 at 80 VA	

<sup>Ⓢ</sup> or Y0 and Y1 = 0.3 A; all others 0.5 A Ⓢ 0.8 for 4 per group and 1.6 for 8 per group  
<sup>Ⓢ</sup> Not guaranteed by Mitsubishi Electric.  
 \* This limitation applies only per reference terminal for each group, 4 and 8 outputs for relays and 2 and 4 outputs for transistors. Please observe the terminal assignments for the group identification.

Programming specifications

System specifications	FX3U
<b>Program data</b>	
I/O points (addresses)	Max. total 384 (with remote I/O)
Address range	Max. 256 direct addressing and max. 256 network I/Os
Program memory	64,000 steps RAM (internal), exchangeable FLROM for easy program exchange
Cycle period	0.065 μs/basic instruction
Number of instructions	27 sequence instructions, 2 step ladder instructions, 209 applied instructions
Programming language	Step ladder, instruction list, SFC
Program execution	Cyclical execution, refresh mode processing
Program protection	Password protection with 3 protection levels*

\* Protection levels may only be changed with FX-10P/FX-20P/FX-30P.

System specifications	FX3U
<b>Operands</b>	
Internal relays	7,680
Special relays	512
Step ladder	4,096
Timer	512
Counter	235
High-speed counter	16
High-speed counter speed	1 phase, 8 points max: 100 kHz/6 points 10 kHz/2 points 2 phase, 2 points max: 50 kHz/2 points
Real-time clock	Year, month, day, hour, minute, second, weekday
Data register	8,000
Extension file register	32,768
Index register	16
Special register	512
Pointer	4,096
Nestings	8
Interrupt inputs	6
Constants	16 bits: K: –32768–+32767, hex: 0–FFFF 32 bits: K: 2147483648–+2147483647, hex: 0–FFFF FFFF