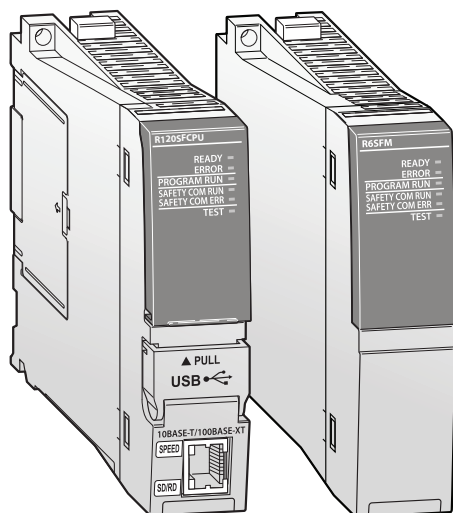# ■ Safety function module and safety CPU



## Safety function module

The safety function module must be mounted next to the iQ-R safety CPU module. It is included with the purchase of an iQ-R safety CPU set, and cannot be purchased independent from the set.

| Specifications | | R6SFM |
|---|---|---|
| I/O points | | 16 |
| Control method | | Stored program cyclic operation |
| Memory capacity Safety program | Program capacity | 40 k steps (160 kByte) |
| | Program memory | 160 kByte |
| | Device/label memory | 80 kByte |
| Buffer memory | | 4096 kByte |
| Max. compensation time at power failure | | Depends on power supply |
| Internal power consumption (5 V DC) | A | 0.67 |
| Weight | kg | 0.16 |
| Dimensions (WxHxD) | mm | 27.8x106x110 |

Note: This product ships as part of the R□SFCPU-SET.

## Generic and safety control in one CPU

The safety CPU module enables control of both generic and safety programs in the same module and is easily programmed utilizing the intuitive features of GX Works3. Compliant with internationally recognized safety standards, the safety CPU enables safety devices such as safety light curtains, emergency switches, and door switches to be connected via the CC-Link IE Field network without requiring a separate dedicated network line.

The safety CPU can be installed directly on the MELSEC iQ-R series base rack, and is easily integrated into an existing or new control system. Safety devices are connectable using the CC-Link IE Field network with safety communication integrated into the network protocol over a widely-available industrial Ethernet topology. The safety CPU is compliant with ISO 13849-1 PL e and IEC 61508 SIL 3 and is certified by TÜV Rheinland®.

## Common engineering platform:

Various useful features of GX Works3 are also available for safety programs similar to other control programs

| Specifications | | R08SFCPU-SET ① | R16SFCPU-SET ① | R32SFCPU-SET ① | R120SFCPU-SET ① |
|---|---|---|---|---|---|
| Safety integrity level (SIL) | | SIL 3 (IEC 61508) | | | |
| Performance level (PL) | | PL e (EN/ISO 13849-1) | | | |
| Control method | | Stored program cyclic operation | | | |
| I/O control mode | | Refresh mode (Direct access I/O is available by specifying direct access I/O (DX, DY).) | | | |
| Programming language | | Ladder diagram (LD), structured text (ST) ②, function block diagram (FBD) ② | | | |
| Extended programming language | | Function block (FB), label programming (system/local/global) | | | |
| Program execution type | | Initial ②, scan ②, fixed scan, interrupt ②, standby type ② | | | |
| Memory capacity | Program capacity | 80 k steps (40 k steps for safety programs) | 160 k steps (40 k steps for safety programs) | 320 k steps (40 k steps for safety programs) | 1200 k steps (40 k steps for safety programs) |
| | Program memory | 320 kByte | 640 kByte | 1280 kByte | 4800 kByte |
| | Device/label memory | 1178 kByte | 1710 kByte | 2306 kByte | 3370 kByte |
| | Data memory | 5 MByte | 10 MByte | 20 MByte | 40 MByte |
| USB Port | | USB2.0 high-speed (miniB) x 1 | | | |
| Integrated clock | | Year, month, day, minute, second, weekday (automatic leap year adjustment) | | | |
| Max. compensation time at power failure | | Depends on power supply | | | |
| Internal power consumption (5 V DC) | A | 0.76 | 0.76 | 0.76 | 0.76 |
| Weight | kg | 0.20 | 0.20 | 0.20 | 0.20 |
| Dimensions (WxHxD) | mm | 27.8x106x110 | 27.8x106x110 | 27.8x106x110 | 27.8x106x110 |
| **Order information** | Art. no. | 289989 | 290199 | 290200 | 290201 |

① Product package includes a safety CPU(R□SFCPU) and safety function module (R6SFM).
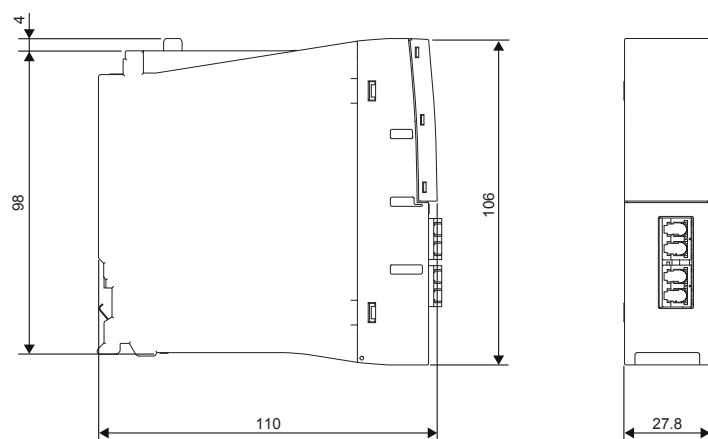② Only for executing control programs.

## ■ CPU modules
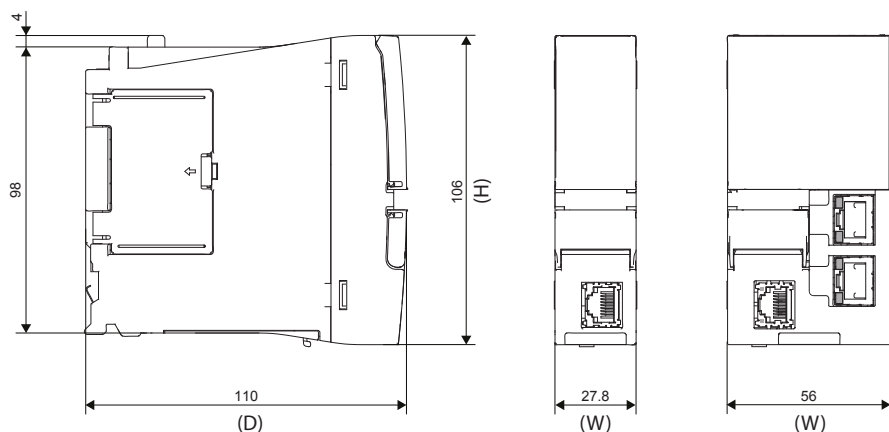


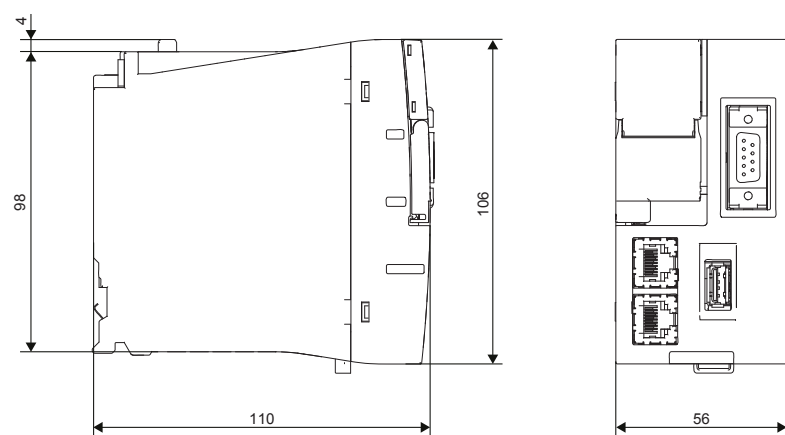| Type | W | H | D |
|---|---|---|---|
| R04CPU<br>R08CPU<br>R16CPU<br>R32CPU<br>R120CPU | 27.8 | 106 | 110 |
| R04ENCPU<br>R08ENCPU<br>R16ENCPU<br>R32ENCPU<br>R120ENCPU | 56 | 106 | 110 |

Unit: mm

## ■ Process CPU modules and redundant function module



Unit: mm

## ■ C Controller CPU



Unit: mm

**2**

MELSEC iQ-R series