# 6th-Generation IDEC SmartRelay

## BASE MODULE GENERAL SPECIFICATIONS

| Item | | Specifications | Standard |
|---|---|---|---|
| Operating Temperature | Horizontal Mounting | -20 to 55°C (no freezing) | Cold: IEC60068-2-1<br>Hot: IEC60068-2-2 |
| | Vertical Mounting | -20 to 55°C (no freezing) | |
| Storage/Transportation Temp. | | –40 to +70°C (no freezing) | — |
| Relative Humidity | | 10 to 95% (no condensation) | IEC60068-2-30 |
| Atmospheric Pressure | | 795 to 1080hPa | — |
| Operating Condition | | No corrosive gas | — |
| Degree of Protection | | IP20 | — |
| Vibration Resistance | | 5 to 8.4Hz, amplitude 3.5mm<br>8.4 to 150Hz, acceleration 9.8m/s² | IEC60068-2-6 |
| Shock Resistance | | 147m/s² | IEC60068-2-27 |
| Drop Test (packaged) | | 0.3m | IEC60068-2-32 |
| Emissions | | Limit class B Group 1 | EN55011/A<br>EN55022/B<br>EN50081-1 |
| Electrostatic Discharge Immunity | | 8kV air discharge<br>6kV contact discharge | IEC61000-4-2 |
| Radiation Field Immunity | | Field Strength:<br>1V/m and 10V/m | IEC61000-4-3 |
| Fast Transient Burst | | 2kV (power line)<br>2kV (I/O signal line) | IEC61000-4-4 |
| Surge Immunity[1]<br>(FL1F-H12RCC, FL1F-B12RCC only) | | 1kV (power line) normal<br>2kV (power line) common | IEC61000-4-5 |
| Communication Cable | | 2.5mm² (one wire)<br>1.5mm² (two wires) | — |
| Terminal Style | | Finger-safe type [2] | — |

1: For protection against surge noise on DC power supply types (FL1F-H12RCE/B12RCE, FL1F-H12SCD, FL1F-H12RCA/B12RCA), use surge absorbers, noise cut transformers or noise filters. Use of a surge protection device (DEHN + SÖHNE GmbH + Co, BVT AD 24 Part No. 918 402) is recommended.
2: Tightening torque 0.5 to 0.6N·m

## PRODUCT DESCRIPTION

In an ever-changing market with tough competition, you need an edge to stay ahead. The upgraded FL1F SmartRelay meets the demands of small-scale applications by offering advanced features that enhance performance, security, and efficiency.

## BASE MODULE HIGHLIGHTS

- MQTT: Real-time cloud communication.
- HTTPS Support: Secure web communication.
- Email/Web Server: Remote alerts and monitoring via browser.
- Web Page Editor: Customize web interface easily.
- Modbus TCP: Client/Server communication with devices.
- Batch Download: Program multiple devices at once.
- Excel Comm.: Direct data exchange with Excel.
- -20 to 55°C: Wide operating temperature range.



Downloaded from Arrow.com.

## BASE MODULE SPECIFICATIONS

| Base Module Type No. | | | FL1F-H12SCD | FL1F-H12RCE<br>FL1F-B12RCE | FL1F-H12RCA<br>FL1F-B12RCA | FL1F-H12RCC<br>FL1F-B12RCC |
|---|---|---|---|---|---|---|
| Power Supply | Rated Power Voltage | | 24V DC | 12/24V DC | 24V AC/DC | 100 to 240V AC/DC |
| | Allowable Voltage Range | | 20.4 to 28.8V DC | 10.8 to 28.8V DC | 20.4 to 26.4V AC<br>20.4 to 28.8V DC | 85 to 265V AC<br>100 to 253V DC |
| | Rated Frequency | | — | — | 47 to 63Hz | 47 to 63Hz |
| | Current Draw | | 15 to 50 mA (24V DC)<br>1.2A (with max. load on digital output) | 30 to 140 mA (12V DC)<br>15 to 90 mA (24V DC) | 15 to 150mA (12V DC)<br>15 to 130mA (24V DC) | 15 to 40mA (100V AC) 5 to 10mA (100V DC)<br>15 to 25mA (240V AC) 2 to 8mA (240V DC) |
| | Allowable Momentary Power Interruption | | — | 2ms Typ. (12V DC)<br>5ms Typ. (24V DC) | 5ms Typ. (24V AC/DC) | 10ms Typ. (100V AC/DC)<br>20ms Typ. (240V AC/DC) |
| | Power Consumption | | 1.2 W (24V DC) | 1.7W (12V DC)<br>2.2W (24V DC) | 3.6 W (24V AC)<br>3.2 W (24V DC) | 4.6W (100V AC) 1.2W (100V DC)<br>6.0W (240V AC) 2.0W (240V DC) |
| | Reverse Polarity Protection | | Yes | Yes | — | — |
| Clock | Backup Duration | | 20 days | 20 days | 20 days | 20 days |
| | Clock Accuracy | | ±2 sec/day (Typ.) | ±2 sec/day (Typ.) | ±2 sec/day (Typ.) | ±2 sec/day (Typ.) |
| Input | Input Signal | | DC | DC | AC/DC | AC/DC |
| | Input Points | | 8 (I1 to I8) | 8 (I1 to I8) | 8 (I1 to I8) | 8 (I1 to I8) |
| | High-speed Input[1] | | 4 (I3, I4, I5, I6), 5kHz maximum | 4 (I3, I4, I5, I6), 5kHz maximum | — | — |
| | Analog Input Points | | 4 (I1, I2, I7, I8) | 4 (I1, I2, I7, I8) | — | — |
| | Analog Input Range | | 0 to 10V DC (max. rated input: 28.8V DC) | 0 to 10V DC (max. rated input: 28.8V DC) | — | — |
| | Analog Input Error | | ±1.5 (of full scale) | ±1.5 (of full scale) | — | — |
| | Analog Input Resolution | | 10 bits (0 to 1000) | 10 bits (0 to 1000) | — | — |
| | Cycle time | | 300ms | 300ms | 300ms | 300ms |
| | Allowable Voltage Range | | 0 to 28.8V DC | 0 to 28.8V DC | 0 to 26.4V AC<br>0 to 28.8V DC | 0 to 265V AC<br>0 to 253V DC |
| | Input Impedance | Digital Input | 5.8kΩ | 5.8kΩ | 4.8kΩ | 610kΩ |
| | | Analog Input | 72kΩ | 72kΩ | — | — |
| | Isolation | | — | — | — | — |
| | Operating Range | OFF Voltage | < 5V DC | < 5V DC | < 5V AC/DC | < 40V AC<br>< 30V DC |
| | | ON Voltage | ≥ 12V DC | ≥ 8.5 V DC | ≥ 12V AC/DC | ≥ 79V AC ≥ 79V DC |
| | | OFF Current | < 0.9mA (I3 to I6) < 0.07mA (I1, I2, I7, I8) | < 0.88mA (I3 to I6) < 0.07mA (I1, I2, I7, I8) | < 1.2mA | < 0.05mA (AC) < 0.06mA (DC) |
| | | ON Current | ≥ 2.1mA (I3 to I6) ≥ 0.18mA (I1, I2, I7, I8) | ≥ 1.5mA (I3 to I6) ≥ 0.12mA (I1, I2, I7, I8) | ≥ 2.6mA | ≥ 0.08mA (AC) ≥ 0.13mA (DC) |
| | Turn ON Time | | 1.5ms (Typ.)<br>≤ 1.0ms (I3 to I6) | 1.5ms (Typ.)<br>≤ 1.0ms (I3 to I6) | 1.5ms (Typ.) | 100V AC: 40ms (Typ.)<br>240V AC: 30ms (Typ.)<br>100V DC: 25ms (Typ.)<br>240V DC: 20ms (Typ.) |
| | Turn OFF Time | | 1.5ms (Typ.)<br>≤ 1.0ms (I3 to I6) | 1.5ms (Typ.)<br>≤ 1.0ms (I3 to I6) | 15ms (Typ.) | 100V AC: 45ms (Typ.)<br>240V AC: 70ms (Typ.)<br>100V DC: 60ms (Typ.)<br>240V DC: 75ms (Typ.) |
| | Wire Length[2] | | 100m | 100m | 100m | 100m |
| Output | Output Signal | | Transistor source output | Relay output | Relay output | Relay output |
| | Output Points/ Contact Configuration | | 4 points (separate) | 4NO contacts | 4NO contacts | 4NO contacts |
| | Isolation | | — | Isolated | Isolated | Isolated |
| | Dielectric Strength (between power/input terminals and output terminals) | | — | 2500V AC, 1 minute<br>500V DC, 1 minute | 2500V AC, 1 minute<br>500V DC, 1 minute | 2500V AC, 1 minute<br>500V DC, 1 minute |
| | Output Voltage | | External power voltage | — | — | — |
| | Maximum Load Current | | 0.3A maximum | Resistive load<br>10A at 12/24V AC/DC<br>10A at 100/120V AC<br>10A at 230/240V AC<br>0.2A at 120V DC<br>0.1A at 240V DC<br>Inductive load<br>2A at 12/24V AC/DC<br>3A at 100/120V AC<br>3A at 230/240V AC<br>0.2A at 120V DC<br>0.1A at 240V DC | Resistive load<br>10A at 12/24V AC/DC<br>10A at 100/120V AC<br>10A at 230/240V AC<br>0.2A at 120V DC<br>0.1A at 240V DC<br>Inductive load<br>2A at 12/24V AC/DC<br>3A at 100/120V AC<br>3A at 230/240V AC<br>0.2A at 120V DC<br>0.1A at 240V DC | Resistive load<br>10A at 12/24V AC/DC<br>10A at 100/120V AC<br>10A at 230/240V AC<br>0.2A at 120V DC<br>0.1A at 240V DC<br>Inductive load<br>2A at 12/24V AC/DC<br>3A at 100/120V AC<br>3A at 230/240V AC<br>0.2A at 120V DC<br>0.1A at 240V DC |
| | Surge Current | | — | 30A maximum | 30A maximum | 30A maximum |
| | Short-circuit Protection | | Built-in current limiting resistor:<br>Approx. 1A | External fuse required:<br>16A maximum | External fuse required:<br>16A maximum | External fuse required:<br>16A maximum |
| | Minimum Switching Load | | — | 10mA, 12V DC (reference value) | 10mA, 12V DC (reference value) | 10mA, 12V DC (reference value) |
| | Initial Contact Resistance | | — | 100mΩ maximum<br>(at 1A, 24V DC) | 100mΩ maximum<br>(at 1A, 24V DC) | 100mΩ maximum<br>(at 1A, 24V DC) |
| | Mechanical Life | | — | 10 million operations<br>(no load, 10Hz) | 10 million operations<br>(no load, 10Hz) | 10 million operations<br>(no load, 10Hz) |
| | Electrical Life | | — | 100,000 operations<br>(rated resistive load)<br>1800 operations/hour | 100,000 operations<br>(rated resistive load)<br>1800 operations/hour | 100,000 operations<br>(rated resistive load)<br>1800 operations/hour |

1 When selecting frequency trigger function and up/down counter function.
2 10m when connected to analog input (twisted pair cable)
Initialization Time: After power-up, the FL1F takes a maximum of 9 seconds (when using a micro SD card) for initialization. When initialization is complete, the FL1F is automatically set to RUN mode.



Downloaded from Arrow.com.

## EXPANSION I/O MODULE SPECIFICATIONS

| | Expansion I/O Module Type No. | | FL1F-M08B1S2 | FL1F-M08B2R2 | FL1F-M08D2R2 | FL1F-M08C2R2 | FL1F-J2B2 | FL1F-K2BM2 |
|---|---|---|---|---|---|---|---|---|
| Power Supply | Rated Power Voltage | | 24V DC | 12/24V DC | 24V AC/DC | 100 to 240V AC/DC | 12/24V DC | 24V DC |
| | Allowable Voltage Range | | 20.4 to 28.8V DC | 10.8 to 28.8V DC | 20.4 to 26.4V AC<br>20.4 to 28.8V DC | 85 to 265V AC<br>100 to 253V DC | 10.8 to 28.8V DC | 20.4 to 28.8V DC |
| | Rated Frequency | | — | — | 50/60Hz (47 to 63Hz) | 50/60Hz (47 to 63Hz) | — | — |
| | Current Draw | | 15 to 40mA | 10 to 80mA (12V DC)<br>10 to 40mA (24V DC) | 20 to 100mA (24V AC)<br>8 to 50mA (24V DC) | 10 to 30mA (100V AC)<br>10 to 20mA (240V AC)<br>5 to 15mA (100V DC)<br>5 to 10mA (240V DC) | 15 to 30mA | 15 to 82mA |
| | Allowable Momentary Power Interruption | | — | 2 ms (typ.) (12V DC)<br>5 ms (typ.) (24V DC) | 5 ms (typ.) (24V AC/DC) | 10ms (typ) (100V AC/DC)<br>20ms (typ.) (240V AC/DC) | 10ms (typ.) (12/24V DC) | 10ms (typ.) |
| | Power Consumption | | 1.0W | 1.0W (12V DC)<br>1.0W (24V DC) | 2.4W (24V AC)<br>1.2W (24V DC) | 3.5W (100V AC) 1.8W (100V DC)<br>4.8W (240V AC) 2.4W (240V DC) | 0.4W (12V DC)<br>0.8W (24V DC) | 2.0W |
| | Reverse Polarity Protection | | Yes | Yes | — | — | Yes | Yes |
| Input | Input Signal | | DC input | DC input | AC/DC input | AC/DC input | Analog input | — |
| | Input Points | | 4 | 4 | 4 | 4 | — | — |
| | Isolation | | — | — | — | — | — | — |
| | Allowable Voltage Range | | 20.4 to 28.8V DC | 10.8 to 28.8V DC | 20.4 to 26.4V AC<br>20.4 to 28.8V DC | 85 to 265V AC<br>100 to 253V DC | — | — |
| | Operating Range | OFF Voltage | < 5V DC | < 5V DC | < 5V AC/DC | < 40V AC < 30V DC | — | — |
| | | ON Voltage | ≥ 12V DC | ≥ 8.5V DC | ≥ 12V AC/DC | ≥ 79V AC ≥ 79V DC | — | — |
| | | OFF Current | < 0.88mA | < 0.88mA | < 1.1mA | < 0.05mA (AC)<br>< 0.06mA (DC) | — | — |
| | | ON Current | ≥ 2.1mA | ≥ 1.5mA | ≥ 2.63mA | ≥ 0.08mA (AC)<br>≥ 0.13mA (DC) | — | — |
| | Turn ON Time | | 1.5ms (Typ.) | 1.5ms (typ.) | 1.5ms (typ.) | 100V AC: 40 ms (typ.)<br>240V AC: 30 ms (typ.)<br>100V DC: 25 ms (typ.)<br>240V DC: 20 ms (typ.) | — | — |
| | Turn OFF Time | | 1.5ms (Typ.) | 1.5ms (typ.) | 15ms (typ.) | 100V AC: 45 ms (typ.)<br>240V AC: 70 ms (typ.)<br>100V DC: 60 ms (typ.)<br>240V DC: 75 ms (typ.) | — | — |
| | Analog Input Points | | — | — | — | — | 2 | — |
| | Analog Input Range | | — | — | — | — | 0 to 10V<br>(max. rated input: 28.8V)<br>0 to 20mA<br>(max. rated input: 40mA) | — |
| | Digital Resolution | | — | — | — | — | 10 bits (0 to 1000) | — |
| | Input Error | | — | — | — | — | ±1.5% (of full scale) | — |
| | Input Impedance | | — | — | — | — | 76kΩ (0 to 10V)<br>250Ω (0 to 20mA) | — |
| | Sampling Cycle | | — | — | — | — | 50ms | — |
| Output | Wire Length | | 100m | 100m | 100m | 100m | 10m (twisted-pair shielded cable) | — |
| | Output Signal | | Transistor source output | Relay output | Relay output | Relay output | — | — |
| | Output Points/ Contact Configuration | | 4 points (separate) | 4NO contacts | 4NO contacts | 4NO contacts | — | — |
| | Isolation | | — | Isolated | Isolated | Isolated | — | — |
| | Dielectric Strength (between power/input terminals and output terminals) | | — | 2500V AC, 1 minute<br>500V DC, 1 minute | 2500V AC, 1 minute<br>500V DC, 1 minute | 2500V AC, 1 minute<br>500V DC, 1 minute | — | — |
| | Output Voltage | | External power voltage (20.4 to 28.8V DC) | — | — | — | — | — |
| | Maximum Load Current | | 0.3A maximum | Resistive load<br>5A at 12/24V AC/DC<br>5A at 100/120V AC<br>5A at 230/240V AC<br>0.2A at 120V DC<br>0.1A at 240V DC<br>Inductive load<br>2A at 12/24V AC/DC<br>3A at 100/120V AC<br>3A at 230/240V AC<br>0.2A at 120V DC<br>0.1A at 240V DC | Resistive load<br>5A at 12/24V AC/DC<br>5A at 100/120V AC<br>5A at 230/240V AC<br>0.2A at 120V DC<br>0.1A at 240V DC<br>Inductive load<br>2A at 12/24V AC/DC<br>3A at 100/120V AC<br>3A at 230/240V AC<br>0.2A at 120V DC<br>0.1A at 240V DC | Resistive load<br>5A at 12/24V AC/DC<br>5A at 100/120V AC<br>5A at 230/240V AC<br>0.2A at 120V DC<br>0.1A at 240V DC<br>Inductive load<br>2A at 12/24V AC/DC<br>3A at 100/120V AC<br>3A at 230/240V AC<br>0.2A at 120V DC<br>0.1A at 240V DC | — | — |
| | Short-circuit Protection | | Built-in current limiting resistor: Approx. 1A | External fuse required:<br>16A maximum | External fuse required:<br>16A maximum | External fuse required:<br>16A maximum | — | Yes |
| | Minimum Switching Load | | — | 10mA, 12V DC (reference value) | 10mA, 12V DC (reference value) | 10mA, 12V DC (reference value) | — | — |
| | Initial Contact Resistance | | — | 100mΩ maximum (at 1A, 24V DC) | 100mΩ maximum (at 1A, 24V DC) | 100 mΩ maximum (at 1A, 24V DC) | — | — |
| | Mechanical Life | | — | 10 million operations (no load, 10Hz) | 10 million operations (no load, 10Hz) | 10 million operations (no load, 10Hz) | — | — |
| | Electrical Life | | — | 100,000 operations (rated resistive load)<br>1800 operations/hour | 100,000 operations (rated resistive load)<br>1800 operations/hour | 100,000 operations (rated resistive load)<br>1800 operations/hour | — | — |
| | Analog Output Points | | — | — | — | — | — | 2 |
| | Analog Output Range | | — | — | — | — | — | Voltage: 0-10V DC<br>Current: 0-20, 4-20 mA |
| | Digital Resolution | | — | — | — | — | — | 10 bits (0 to 1000) |
| | Output Error (of full scale) | | — | — | — | — | — | Voltage output: ±2.5%<br>Current output: ±3% |
| | Output Impedance | | — | — | — | — | — | Voltage: 5kΩ min<br>Current: 250Ω max |
| | Analog Value Conversion Interval | | — | — | — | — | — | 50ms (typ.) |
| | Wire Length | | — | — | — | — | — | 10m (twisted-pair shielded cable) |



Downloaded from Arrow.com.

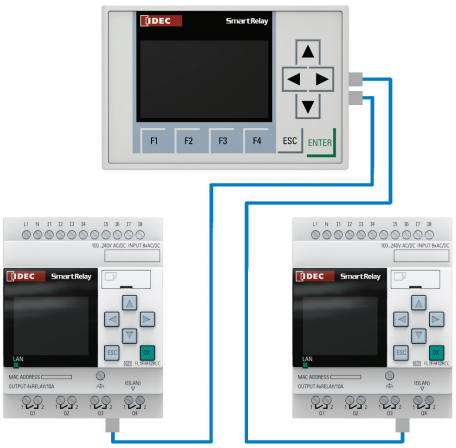
## TEXT DISPLAY PANEL HIGHLIGHTS:

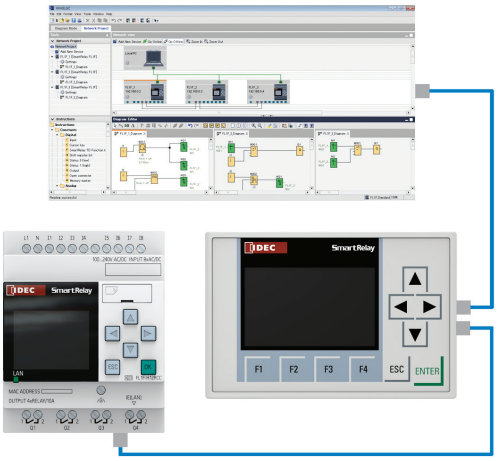
### New and improved LCD display

- Improved display with 6 lines and 20 characters per line, more than twice as many characters as before
- Selectable white, amber or red backlighting for optical emphasis on alarms and events

### Two RJ45 Ethernet ports

- Use a standard Ethernet cable to the connect FL1F base module to the Text Display Panel.  A special cable is not required.
- Provide different ways to connect




## TEXT DISPLAY SPECIFICATIONS

### Text Display General Specifications

| Item | | Specifications | Standard |
|---|---|---|---|
| Operating Temperature | Horizontal Mounting | 0 to 55°C (no freezing) | Cold: IEC60068-2-1<br>Hot: IEC60068-2-2 |
| | Vertical Mounting | 0 to 55°C (no freezing) | |
| Storage/Transportation Temp. | | –40 to +70°C (no freezing) | — |
| Relative Humidity | | 10 to 95% (no condensation) | IEC60068-2-30 |
| Atmospheric Pressure | | 795 to 1080hPa | — |
| Operating Condition | | No corrosive gas | — |
| Degree of Protection | | IP20 | — |
| Vibration Resistance | | 5 to 8.4Hz, amplitude 3.5mm<br>8.4 to 150Hz, acceleration 9.8m/s$^2$ | IEC60068-2-6 |
| Shock Resistance | | 147m/s$^2$ | IEC60068-2-27 |
| Drop Test (packaged) | | 0.3m | IEC60068-2-32 |
| Emissions | | Limit class B Group 1 | EN55011/A<br>EN55022/B<br>EN50081-1 |
| Electrostatic Discharge Immunity | | 8kV air discharge<br>6kV contact discharge | IEC61000-4-2 |
| Radiation Field Immunity | | Field Strength:<br>1V/m and 10V/m | IEC61000-4-3 |
| Fast Transient Burst | | 2kV (power line)<br>2kV (I/O signal line) | IEC61000-4-4 |
| Surge Immunity[1]<br>(FL1F-H12RCC, FL1F-B12RCC only) | | 1kV (power line) normal<br>2kV (power line) common | IEC61000-4-5 |
| Communication Cable | | 2.5mm$^2$ (one wire)<br>1.5mm$^2$ (two wires) | — |
| Terminal Style | | Finger-safe type[2] | — |

1 For protection against surge noise on DC power supply types (FL1F-H12RCE/B12RCE, FL1F-H12SCD, FL1F-H12RCA/B12RCA), use surge absorbers, noise cut transformers, or noise filters. Use of a surge protection device (DEHN + SÖHNE GmbH + Co, BVT AD 24 Part No. 918 402) is recommended.
2 Tightening torque 0.5 to 0.6N·m

### Text Display General Specifications Cont.

| | |
|---|---|
| Dimensions (W × H × D) | 128.2 × 86 × 38.7 mm |
| Weight (approx.) | 220g |
| Installation | Panel cut-out using mounting clips |
| Keyboard | Membrane keypad |
| Display | FSTN graphic display<br>(W × H: 160 × 96 dots)<br>LED backlight (White, Amber, Red) |
| Font type | English, Spanish, Russian, Chinese, Italian, Turkish, German, Dutch, French, Japanese |
| Displayable string | 1 screen 6 lines × 20 columns |

### Power Supply Specifications

| | |
|---|---|
| Power Voltage | 24V AC/DC<br>12V DC |
| Allowable Voltage Range | 20.4 to 26.4V AC<br>10.2 to 28.8V DC |
| Allowable Voltage Frequency | 47 to 63Hz |
| Power Consumption | 12V DC: 145mA (Typ.)<br>24V DC: 70mA (Typ.)<br>24V AC: 75mA (Typ.) |
| Data Transmission Rate | 10/100M full/half duplex data transmission rate |

### LCD Display / Backlight Specifications

| | |
|---|---|
| LCD Display Durability[3] | 50,000 hours |
| Backlight Durability[4] | 20,000 hours |

3 Display durability is calculated under ordinary operating and storage conditions: room temperature, normal humidity below 65% RH, and not subjected to direct sunlight.
4 Backlight durability is the number of hours taken for the light to become 50% of the original brightness.



Downloaded from Arrow.com.

## PART NUMBERS

### Base Module

| Rated Power Voltage | Input Signal | Output Signal | Display | Clock | I/O Points | Weight (approx.) | Part No. |
|---|---|---|---|---|---|---|---|
| **24V DC** | DC<br>I1, I2, I7 and I8 are used for digital/ analog inputs | Transistor | Yes | Yes | 8/4 points | 195g | FL1F-H12SCD |
| **12/24V DC** | | Relay | Yes | Yes | 8/4 points | 240g | FL1F-H12RCE |
| | | | — | | | 200g | FL1F-B12RCE |
| **24V AC/DC** | AC/DC[1] | Relay | Yes | Yes | 8/4 points | 240g | FL1F-H12RCA |
| | | | — | | | 200g | FL1F-B12RCA |
| **100 to 240V AC/DC** | AC/DC | Relay | Yes | Yes | 8/4 points | 240g | FL1F-H12RCC |
| | | | — | | | 200g | FL1F-B12RCC |

1 With NPN/PNP sensor input. For details, see Input Internal Circuits in the Specifications table.

### Expansion I/O Module

| Type | Rated Power Voltage | Input Signal | Output Signal | I/O Points | Weight (approx.) | Part No. |
|---|---|---|---|---|---|---|
| **Input/Output** | 24V DC | DC | Transistor | 4/4 points | 95g | FL1F-M08B1S2 |
| | 12/24VDC | DC | Relay | 4/4 points | 130g | FL1F-M08B2R2 |
| | 24V AC/DC[2] | AC/DC[2] | Relay | 4/4 points | 130g | FL1F-M08D2R2 |
| | 100 to 240V AC/DC | AC/DC | Relay | 4/4 points | 130g | FL1F-M08C2R2 |
| **Analog Input** | 12/24V DC | Analog | — | 2/0 points | 95g | FL1F-J2B2 |
| **Analog Output** | 24V DC | — | Analog | 0/2 points | 95g | FL1F-K2BM2 |

2 With NPN/PNP sensor input. For details, see Input Internal Circuits in the Specifications table.
I/O points within the maximum number of expandable I/O points can be used.
When using modules of the same power voltage, supply power to the base module and expansion I/O modules using one power supply.
When power is supplied to the modules from different power supplies, the fast transient burst is 1 kV (IEC61000-4-4).

### Text Display

| Rated Power Voltage | Weight (approx.) | Part Number | Remarks |
|---|---|---|---|
| 24V AC/DC<br>12V DC | 220g | FL1F-RD1 | Supplied with mounting clip and gasket |

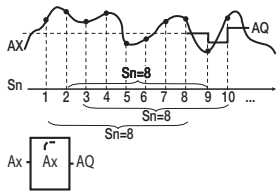
### Options

| Description | Part Number | Package Quantity | Remarks |
|---|---|---|---|
| **Application Software: WindLGC** | FL9Y-LP1CDW | 1 | DVD-ROM (incl. online help manual) |
| **Mounting Clip for Base Module** | FL1F-PSP1PN05 | 5 | Supplied with a module[3] |
| **Mounting Clip and Waterproof Gasket for Text Display** | FL1F-KW1 | 1 | Supplied with text display[4] |
| **IDEC SmartRelay User's Manual (English)** | FL9Y-B1789 | 1 | Downloadable from: http://www.idec.com/download |

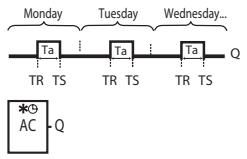
3 Supplied with a base module and an expansion module.
4 Supplied with a text display, it includes a gasket, four mounting clips, and a power supply connector.

## NEW FUNCTION BLOCKS

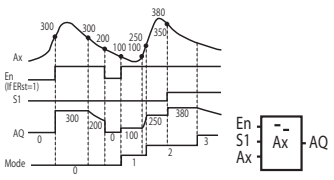
**NEW** Analog filter



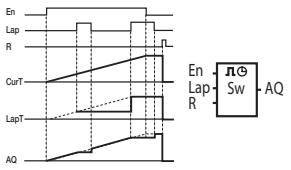

**NEW** Astronomical clock



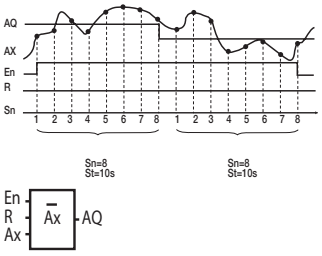

**NEW** Max/Min




**NEW** Stopwatch



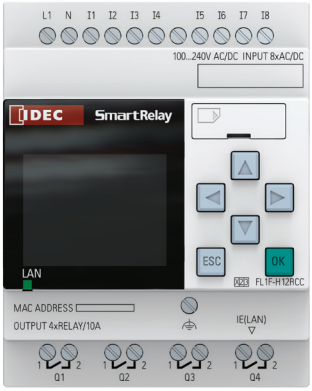

**NEW** Average value



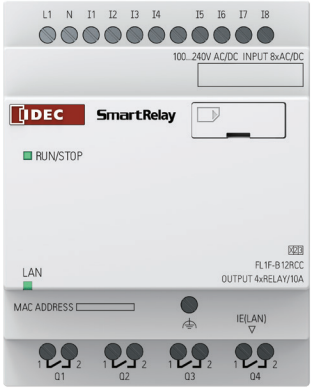



Downloaded from Arrow.com.

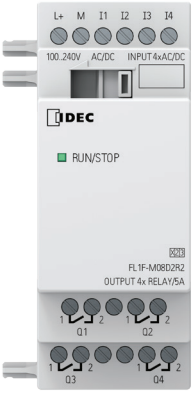
## DIMENSIONS (All dimensions in mm)




**Base Module (with Display)**

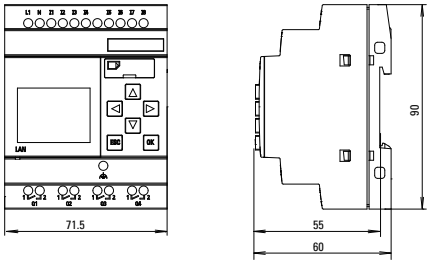



**Base Module (without Display)**

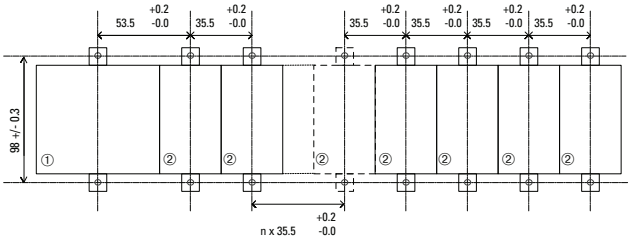



**Expansion I/O Module**

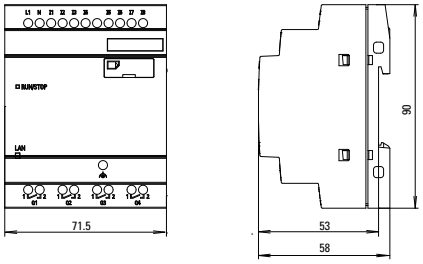
### Base Module (with Display)



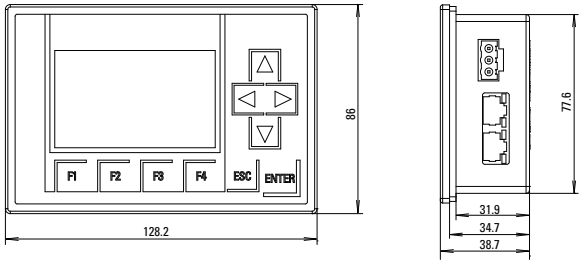

### Mounting Hole Layout (Using Mounting Slides)



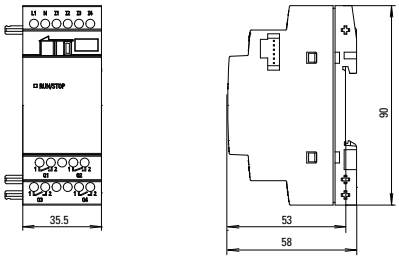

### Base Module (without Display)



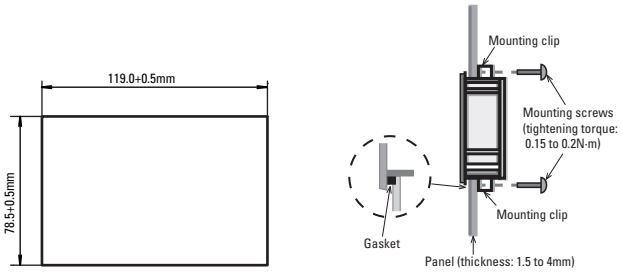

### Text Display




### Expansion I/O Module




### (Panel Cutout)




Note: Drawings are not to scale

IDEC Corporation • 1175 Elko Drive • Sunnyvale, CA 94089 • 800-262-IDEC (4332) • Fax: 408-745-5258 • https://us.idec.com
©2025 IDEC Corporation. All Rights Reserved. FL9Y-DS100-FL1F-SmartRelay-3 04/25 PDF Only

Downloaded from Arrow.com.