Watlow’s F4T with INTUITION® Combines the Flexibility of a Modular I/O Controller with Best-in-Class Ease of Use

The F4T with INTUITION® temperature process controller from Watlow® offers a wide range of field removable I/O modules for maximum design flexibility. Configurations can be custom tailored to meet the scaling needs of a tremendous range of equipment and applications while providing exactly the hardware types required for compatibility. The F4T controller also features a 4.3 inch, color, graphical touch panel. Combining power, flexibility and functionality, this new controller offers unmatched versatility, and its best-in-class ease of use could very well make user manuals a thing of the past.

Features and Benefits

4.3-inch, color touch panel with high-resolution, graphical user-interface
- Shortens learning curve and reduces operator errors
- Allows channels, profiles, alarms, inputs and outputs to be personalized with user defined names

Temperature PID, data logger, trend chart, over/under-temperature limit, power switching, math, logic, timers and counters combined into an integrated system
- Lowers ownership costs
- Eliminates the need for separate discrete components
- Reduces complexity
- Simplifies design, ordering and installation
- Saves money

Robust algorithms for temperature, cascade, altitude, humidity and compressor
- Improves process control
- Offers one to four channels of control
- Provides multiple PID sets
- Enables TRU-TUNE®+ adaptive control algorithm
- Offers 40 ramp and soak profiles with real-time clock and battery backup

COMPOSER® graphical configuration PC software
- Speeds up and simplifies commissioning
- Archives and documents controller setup
- Connects with controller easily via Ethernet

Many communications options available including Ethernet Modbus® TCP and SCPI and EIA-232/485 Modbus® RTU
- Offers two USB host ports and one device port
- Simplifies file transfers
- Connects easily

Modular design
- Adapts quickly to evolving requirements
- Offers numerous types of field pluggable modules for maximum flexibility and easiest compatibility
- Features scalable and modular firmware functions
- Delivers scalable input/output quantities from 1 to 36

Agency certifications include UL®, FM, CE, RoHS, W.E.E., NEMA 4X/IP65
- Ensures high quality and reliability
- Verifies performance in installations worldwide

SERIES F4S/F4D/F4P backward compatible
- Provides easy retrofit with minimum pain and disruption
- Ensures proper fit in existing SERIES F4 panel cutout

Off-the-shelf solution
- Provides cost-effective “make versus buy”
- Offers preconfigured touch-panel screens
- Assures quicker time to market

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Key Features and Options

- 1 to 4 control loops with TRU-TUNE+ adaptive control algorithm for superior controllability
- 40 profiles for ramp and soak
- Ethernet Modbus® TCP connectivity
- Multiple high-speed USB host ports
- Over/under-temperature limits for safety shutdown
- Universal, thermistor and ac current measurement inputs
- Inputs and outputs expandable from 1 to 36
- SENSOR GUARD prevents unplanned process shutdowns and product loss by switching to a backup sensor if the primary sensor fails
- High current outputs for up to 10A heaters or other loads
- Programmable timers, counters, math and logic
- Temperature, cascade, altitude, relative humidity, compressor algorithms and Vaisala® humidity compensation
- Sequencer start-up and control
- Retransmit and remote set point
- USB configuration port
- Configuration settings can be stored and recalled
- Removable modules and connectors
- Front-panel mount and flush mounting options
- Right angle and front-screw terminal options
- UL® listed, CSA, CE, RoHS, W.E.E.E., FM

Common Specifications

Line Voltage/Power
- Data retention upon power failure via nonvolatile memory

Functional Operating Range
- Type J: -346 to 2192°F (-210 to 1200°C)
- Type K: -454 to 2500°F (-270 to 1371°C)
- Type T: -454 to 75°F (-270 to 400°C)
- Type E: -454 to 1832°F (-270 to 1000°C)
- Type N: -454 to 2372°F (-270 to 1300°C)
- Type C: 32 to 4200°F (0 to 2315°C)
- Type D: 32 to 4200°F (0 to 2315°C)
- Type E: 32 to 449°F (0 to 1343°C)
- Type R: -58 to 3214°F (-50 to 1767°C)
- Type S: -58 to 3214°F (-50 to 1767°C)
- Type B: 32 to 330°F (0 to 1816°C)
- RTD (DIN): -328 to 1472°F (-200 to 800°C)
- Process: -1999 to 9999 units

Calibration Accuracy
- Calibration accuracy and sensor conformity: ±0.1% of span, ±1°C at the calibrated ambient temperature and rated line voltage
  - Types R, S, B: ±0.2%
  - Type T below -50°C: ±0.2%
- Calibration ambient temperature at 77°F ±5°F (25°C ±3°C)
- Accuracy span: 1000°F (540°C) min.
- Temperature stability: Typical ±0.1°F/F°F (±0.1°C/C°) rise in ambient max.

Configuration Diagnostics
- Indicates if modules present match the expected configuration settings

USB Device Port (Coming soon, consult factory for availability.)
- Version: USB 2.0 full-speed
- Connector: USB Mini Type B, 5 position
- Recognized as a mass storage device/serial communications
- Driver for Microsoft® Windows® 7 and Windows® 8

USB Host Port
- Total of 2 available
- Version: USB 2.0 hi-speed
- Connector: USB Type A, high-retention
- Flash drive must be FAT32 file system
- Max. current 0.5A/port

System Configuration Requirements
- F4T has 6 slots for flex modules (FM)
- EIA-232/485 Modbus® RTU flex module, if used, must occupy slot 6 location
- A maximum of two 10A SSR FM modules can be used in the F4T and each will require space for 2 slots. Valid in slots 1, 2, 4 or 5

Wiring Termination—Touch-Safe Terminals
- Right-angle and front-screw terminal blocks for input, output and power supply connections
- Input, output and power terminals: touch safe, removable, 12 to 30 AWG

F4T Base Specifications

Line Voltage/Power
- High voltage option: 100 to 240VAC +10/-15%, 50/60Hz ±5%
- Low voltage option: 24 to 28VAC/VDC+10/-15%, 50/60Hz ±5%
- Power consumption: 23 W, 54VA

Environment
- NEMA 4X/IP65 front panel mount configuration only
- Operating temperature: 0 to 122°F (-18 to 50°C)
- Storage temperature: -40 to 185°F (-40 to 85°C)
- Relative humidity: 0 to 90%, non-condensing

Agency Approvals
- UL®/EN 61010 Listed, File E185611 QUXY
- UL® 508 Reviewed
- CSA CC.C#14, File 158031
- FM Class 3545 (configurations with limit modules)
- AMS 2750 E compliant: Analog input process values. Tip: Maximize field calibration accuracy and uniformity by using advanced F4T features such as Calibration Offset and Linearization Function Blocks. Refer to user manual for details.
- RoHS by design, China RoHS Level 2, W.E.E.E.
- CE
- Windows® Hardware Certification

User Interface
- 4.3 inch TFT PCAP color graphic touch screen
- LED backlife >50K hours
- 4 keys: Home, Main Menu, Back, Help

Control Loops
- 1 to 4 PID or ON-OFF control loops
- 0 to 6 Limit loops
- User-selectable action: heat, cool or heat/cool
- Auto-tune with TRU-TUNE+ adaptive control

Control Loops and Over-temperature Limits
- Input sampling: 10Hz
- Output update: 10Hz

Communications
- Ethernet Modbus® TCP
- Isolated communications

Profile Ramp and Soak Option
- Profile engine affects 1 to 4 loops in sync
- 40 profiles with 50 steps per profile

Data Logging
- User selectable parameters: Up to a maximum of 128 active parameters depending on configuration
- Logging interval: Programmable increments between 0.1 seconds and 60 minutes if logging to internal memory. Logging directly to USB; 1.0 seconds to 60 minutes
- File types: .CSV for standard data logging or proprietary format for encrypted data log option
- Storage: 80MB internal memory or to USB memory stick
- File transfer: Internal memory to USB host port or to Ethernet Modbus® TCP
- Transfer options: On demand by user or user programmable based on when a new data log file record is available. Utilizes TFTP and Samba protocols
- Record: Date and time stamped

Trending
- 4 user programmable charts
- 6 pens available per chart
- View analog sensors, process values, set points and power
Function Block Basic Set 1 Set 2
Alarm 6 8 14
Compare None 4 16
Counter None 4 16
Linearization 4 4 8
Logic None 12 24
Math None 12 24
Process Value 4 4 8
Special Output Function (including compressor) None 2 4
Timer None 6 16
Variable 4 12 24

Compare
- Greater than, less than, equal, not equal, greater than or equal, less than or equal

Counters
- Counts up or down, loads predetermined value on load signal

Real Time Clock with Battery Backup
- Accuracy (typical): +/-3ppm over -15 to 50°C
- Typical battery life: 10 years at 77°F (25°C)
- Field replaceable lithium battery

Number of Function Blocks by Ordering Option

<table>
<thead>
<tr>
<th>Function Block</th>
<th>Basic</th>
<th>Set 1</th>
<th>Set 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alarm</td>
<td>6</td>
<td>8</td>
<td>14</td>
</tr>
<tr>
<td>Compare</td>
<td>None</td>
<td>4</td>
<td>16</td>
</tr>
<tr>
<td>Counter</td>
<td>None</td>
<td>4</td>
<td>16</td>
</tr>
<tr>
<td>Linearization</td>
<td>4</td>
<td>4</td>
<td>8</td>
</tr>
<tr>
<td>Logic</td>
<td>None</td>
<td>12</td>
<td>24</td>
</tr>
<tr>
<td>Math</td>
<td>None</td>
<td>12</td>
<td>24</td>
</tr>
<tr>
<td>Process Value</td>
<td>4</td>
<td>4</td>
<td>8</td>
</tr>
<tr>
<td>Special Output Function (including compressor)</td>
<td>None</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Timer</td>
<td>None</td>
<td>6</td>
<td>16</td>
</tr>
<tr>
<td>Variable</td>
<td>4</td>
<td>12</td>
<td>24</td>
</tr>
</tbody>
</table>

Real Time Clock with Battery Backup
- Accuracy (typical): +/-3ppm over -15 to 50°C
- Typical battery life: 10 years at 77°F (25°C)
- Field replaceable lithium battery

Linearization
- Interpolated or stepped

Logic
- And, nand, or, nor, equal, not equal, latch, flip-flop

Math
- Average, process scale, switch over, deviation scale, differential (subtract), ratio (divide), add, multiply, absolute difference, minimum, maximum, square root, sample and hold, pressure-to-altitude and dew point

Process Value
- Sensor backup, average, crossover, wet bulb-dry bulb, switch over, differential (subtract), ratio (divide), add, multiply, absolute difference, minimum, maximum, square root, altitude, Vaisala® relative humidity and pressure-to-altitude

Special Output Function
- Compressor control (cool and/or dehumidify with single compressor), motorized valve, sequencer

Timers
- On pulse, delay, one shot or retentive

Variable
- User value for digital or analog variable

Panel Mount Dimensions

Flush Mount Dimensions
**F4T Base Ordering Information**

Base includes: 4.3 inch color graphical touch panel, 2 USB hosts, USB configuration port, standard bus, Ethernet Modbus® TCP. SCPI protocol and backwards compatible Modbus® for select key SERIES F4D/P/S parameters.

### Part Number

<table>
<thead>
<tr>
<th>①</th>
<th>②</th>
<th>③</th>
<th>④</th>
<th>⑤</th>
<th>⑥</th>
<th>⑦</th>
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<tbody>
<tr>
<td>F4</td>
<td>Base Type</td>
<td>T</td>
<td>Application Type</td>
<td></td>
<td>Power Supply Connector &amp; Voltage, Logo</td>
<td></td>
<td>Profiles &amp; Function Blocks</td>
<td></td>
<td>Future Options</td>
<td></td>
<td>Documentation, Accent Bar, Replacement Connector &amp; Custom</td>
<td></td>
<td>Control Algorithms</td>
<td></td>
</tr>
</tbody>
</table>

#### Base Type

T = Touch screen

#### Application Type

1 = Standard  
X = Custom options, contact factory

#### Data Logging and Graphic Trend Charts

A = None  
B = Graphical trend chart  
J = Data logging  
K = Data logging with encrypted files  
L = Data logging with graphic trend chart  
M = Data logging with encrypted files and graphical trend chart

#### Power Supply Connector & Voltage, Logo

<table>
<thead>
<tr>
<th>Power Supply</th>
<th>Power Supply Connector</th>
<th>Wattlow Logo</th>
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</thead>
<tbody>
<tr>
<td>100 to 240VAC</td>
<td>Right angle (standard)</td>
<td>Yes</td>
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<tr>
<td>100 to 240VAC</td>
<td>Front screw</td>
<td>Yes</td>
</tr>
<tr>
<td>24 to 28VAC or VDC</td>
<td>Right angle (standard)</td>
<td>No</td>
</tr>
<tr>
<td>24 to 28VAC or VDC</td>
<td>Front screw</td>
<td>Yes</td>
</tr>
</tbody>
</table>

#### Profiles & Function Blocks

<table>
<thead>
<tr>
<th>Profiles</th>
<th>Function Blocks</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>40 Profiles, Battery Backup and Real-Time Clock</td>
</tr>
<tr>
<td>A</td>
<td>X</td>
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<tr>
<td>B</td>
<td>X</td>
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<td>C</td>
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<td>D</td>
<td>X</td>
</tr>
<tr>
<td>E</td>
<td>X</td>
</tr>
<tr>
<td>F</td>
<td>X</td>
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</tbody>
</table>

Note: Refer to top of page 3 “Number of Function Blocks by Ordering Option” for quantities and types of functions blocks in each set.

#### Future Options

AA = Future Options

<table>
<thead>
<tr>
<th>Documentation DVD / QSG</th>
<th>Decorated Brush Aluminum Accent Bar</th>
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<tbody>
<tr>
<td>1A = Yes</td>
<td>X</td>
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<tr>
<td>1B = Yes</td>
<td>X</td>
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<tr>
<td>1C = Yes</td>
<td>X</td>
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<tr>
<td>1D = Yes</td>
<td>X</td>
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<tr>
<td>1E = No</td>
<td>X</td>
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<tr>
<td>1F = No</td>
<td>X</td>
</tr>
<tr>
<td>1G = No</td>
<td>X</td>
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<tr>
<td>1H = No</td>
<td>X</td>
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</tbody>
</table>

Note: Refer to top of page 3 “Number of Function Blocks by Ordering Option” for quantities and types of functions blocks in each set.

#### Control Algorithms

<table>
<thead>
<tr>
<th>Control Loop</th>
<th>Cascade Loop</th>
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<tbody>
<tr>
<td>1</td>
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</tr>
<tr>
<td>2</td>
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<tr>
<td>3</td>
<td>0</td>
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<td>A</td>
<td>2</td>
</tr>
<tr>
<td>B</td>
<td>2</td>
</tr>
<tr>
<td>C</td>
<td>2</td>
</tr>
</tbody>
</table>

Note: Each control loop algorithm requires 1 universal or thermistor input from a flex module.  
Note: Each cascade loop algorithm requires 2 universal or thermistor inputs from flex modules.

#### Populated Flex Modules

| AAA = No populated flex modules | XXX = Contact factory - Populated flex modules |

Note: If AAA is selected you will need to order Flex Modules (FM) next to account for input and output hardware.
Flex Modules—High Density I/O Specifications

Four Universal Inputs (Control Loops, Auxiliary Input)
• Thermocouple: grounded or ungrounded sensors, greater than 20MΩ input impedance, 2kΩ source resistance max.
• RTD: 2-wire, platinum, 100Ω and 10000Ω at 32°F (0°C) calibration to DIN curve (0.00385Ω/Ω/°C)
• Process: 0-20mA at 100Ω, or 0-10VDC, 0-50mVDC at 20kΩ input impedance; scalable
• Potentiometer: 0 to 1,200Ω
• Inverse scaling

Four Thermistor Inputs (Control Loops, Auxiliary Input)
• 0 to 40kΩ, 0 to 20kΩ, 0 to 10kΩ, 0 to 5kΩ
• 2.252kΩ and 10kΩ at 77°F (25°C)
• Preprogrammed Steinhart-Hart coefficients for Alpha Techniques (A curve 2.252k and 10k, C curve 10k), BetaTHERM (2.2K3A, 10K3A and 10K4A) and YSI (004, 016 and 006)
• User-settable Steinhart-Hart coefficients for other thermistors

Three Universal Process/Retransmit Outputs
• Output range selectable
• 0 to 10VDC ±15mV into a min. 4,000Ω load with 2.5mV nominal resolution
• 0 to 20mA ±30μA into max. 400Ω load with 5μA nominal resolution
• Temperature stability 100ppm/°C

Three Mechanical Relays
• 2 Form C relays, 1 Form A relay. Form A relay shares common with 1 Form C relay
• Each relay is 5A, 24 to 240VAC or 30VDC max., resistive load, 100,000 cycles at rated load. Requires a min. load of 20mA at 24V, 125VA pilot duty

Four Mechanical Relays
• Form A, 5A ea., 24 to 240VAC or 30VDC max., resistive load, 100,000 cycles at rated load. Requires a min. load of 20mA at 24V, 125VA pilot duty

Two Solid State Relays
• Form A, 10A max. each SSRs combined at 24VAC min., 264VAC max., opto-isolated, without contact suppression, max. resistive load 10A per output at 240VAC, max. 20A per card at 122°F (50°C), max.

Four Solid State Relays
• Two pairs of SSRs, each pair shares a common
• Form A, 24VAC min., 264VAC max., opto-isolated, without contact suppression, resistive load 2A per output at 240VAC, max. See table for max. current per output

Quad 2A SSR Card Derating Curves

Six Digital I/O
• Each independently configurable as input or output
• Dry contact input: update rate 10Hz, min. open resistance 10kΩ, max. closed resistance 50Ω, max. short circuit 13mA
• DC voltage input: update rate 10Hz, max. input 36V at 3mA, min. high state 3V at 0.25mA, max. low state
• Switched dc output: max. 5VDC at 130mA, or 19-22VDC at 80mA; field selectable
• Open collector output: 32VDC at 1.5A max., 8A max. per 6 outputs combined

F4T Flex Module—High Density I/O Ordering Information

Part Number

<table>
<thead>
<tr>
<th>Module ID Type</th>
<th>Future Option</th>
<th>Input and Output Hardware</th>
<th>Custom Options and Connectors</th>
<th>Custom Options - Firmware, Overlay, Preset Parameters, Locked Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>FM H</td>
<td>AAA</td>
<td></td>
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</table>

Notes:
- Input and Output hardware option K: 2 SSR’s 10A.
- The 2 SSR’s 10A FM module requires 2 F4T slots. Valid slot locations are 1, 2, 4 or 5.
- The F4T can support a maximum of two total of the K option FM module types (4 total SSR, 10A).
Flex Modules—Mixed and Limit I/O Specifications

Universal Input
- Thermocouple: grounded or ungrounded sensors, greater than 20MΩ input impedance, 2kΩ source resistance max.
- RTD: 2- or 3-wire, platinum, 100Ω and 1000Ω at 32°F (0°C) calibration to DIN curve (0.00385Ω/Ω/°C)
- Process: 0-20mA at 100Ω, or 0-10VDC, 0-50mVDC at 20kΩ input impedance; scalable
- Potentiometer: 0 to 1,200Ω
- Inverse scaling

Thermistor Input
- 0 to 40kΩ, 0 to 20kΩ, 0 to 10kΩ, 0 to 5kΩ
- 2.252kΩ and 10kΩ base at 77°F (25°C)
- Preprogrammed Steinhart-Hart coefficients for Alpha Techniques (A curve 2.252k and 10k, C curve 10k), BetaTHERM (2.2K3A, 10K3A and 10K4A) and YSI (004, 016 and 006)
- User-settable Steinhart-Hart coefficients for other thermistors

Temperature Input
- Thermocouple: grounded or ungrounded sensors, greater than 20MΩ input impedance, 2kΩ source resistance max.
- RTD: 2-wire, platinum, 100Ω and 1000Ω at 32°F (0°C) calibration to DIN curve (0.00385Ω/Ω/°C)

Digital Input
- Update rate: 10Hz
- DC voltage: max. input 36V at 3mA, min. high state 3V at 0.25mA, max. low state 2V
- Dry contact input: min. open resistance 10kΩ, max. closed resistance 50Ω, max. short circuit 13mA

Current Transformer Input
- Accepts 0-50mA signal (user programmable range)
- Displayed operating range and resolution can be scaled and are user programmable
- Current input range: 0 to 50mA ac, 100Ω input impedance
- Response time: 1 second max., accuracy ±1mA typical
- Use with current transformer (Watlow part number: 16-0246)

Switched DC Output
- Max. 32VDC open circuit
- Max. current 30mA per single output
- Max. current 40mA per pair

Open Collector Output
- Max. 30VDC at 100mA

Solid State Relay (SSR) Output
- Form A, 1A at 50°F (10°C) to 0.5A at 149°F (65°C), 0.5A at 24VAC min., 264VAC max., opto-isolated, without contact suppression

Form A Electromechanical Relay Output
- 5A, 24 to 240VAC or 30VDC max., resistive load, 100,000 cycles at rated load, requires a min. load of 20mA at 24V, 125VA pilot duty

Form C Electromechanical Relay Output
- 5A, 24 to 240VAC or 30VDC max., resistive load, 100,000 cycles at rated load, requires a min. load of 20mA at 24V, 125VA pilot duty

NO-ARC Relay Output
- Form A, 12A at 122°F (50°C), 85 to 264VAC, no VDC, resistive load, 2 million cycles at rated load

Universal Process/Retransmit Output
- Range selectable
- 0 to 10VDC ±15mV into a min. 1,000Ω load with 2.5mV nominal resolution
- 0 to 20mA ±30μA into max. 800Ω load with 5μA nominal resolution
- Temperature stability 100ppm/°C
### F4T Flex Module—Mixed I/O Ordering Information

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Module ID Type</th>
<th>Future Option</th>
<th>Input Hardware</th>
<th>Future Option</th>
<th>Output Hardware Options</th>
<th>Future Option</th>
<th>Custom Options and Connectors</th>
<th>Custom Options-Firmware, Overlay, Preset Parameters, Locked Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>FM</td>
<td>M</td>
<td>A</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Module ID Type**
- M = Mixed I/O

**Future Option**
- A = Future Option

**Input Hardware**
- A = None
- U = Universal input - T/C, RTD 2- or 3-wire, 0-10VDC, 0-20mA
- T = Thermistor input
- C = Current transformer input

*Note: If option C is ordered than the following options are NOT valid for Outputs 1 & 2: FA, FC, FJ and FK.*

**Output Hardware Options**
- AA = None
- AJ = None
- AK = None
- CA = Switched dc/open collector
- CH = Switched dc/open collector
- CJ = Switched dc/open collector
- CK = Switched dc/open collector
- EA = Mechanical relay 5A, Form C
- EH = Mechanical relay 5A, Form C
- EC = Mechanical relay 5A, Form C
- FJ = Universal process/retransmit
- FK = Universal process/retransmit
- KH = SSR Form A, 0.5A
- KK = SSR Form A, 0.5A

### F4T Flex Module—Limit Ordering Information

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Module ID Type</th>
<th>Future Option</th>
<th>Input and Output Hardware Options</th>
<th>Future Option</th>
<th>Custom Options and Connectors</th>
<th>Custom Options-Firmware, Overlay, Preset Parameters, Locked Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>FM</td>
<td>L</td>
<td>A</td>
<td>LC J = Limit control with universal input</td>
<td>A</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Module ID Type**
- L = Limit

**Future Option**
- A = Future Option

**Input and Output Hardware Options**
- LCJ = Limit control with universal input
- LEJ = Limit control with universal input
- LAJ = Limit control with universal input
- MC J = Limit control with thermistor input
- ME J = Limit control with thermistor input
- MAJ = Limit control with thermistor input
- YEB = Limit control with temperature input

**Notes:**
- Universal input = T/C, RTD 2- or 3-wire, 0-10VDC, 0-20mA
- Temperature input = T/C and RTD 2-wire only

**Future Option**
- A = Future Option

**Custom Options and Connectors**
- A = Right angle screw connector (standard)
- F = Front screw connector

**Custom Options - Firmware, Overlay, Preset Parameters, Locked Code**
- AA = Standard with quick start guide
- AB = Standard without quick start guide
- AC = Replacement connectors hardware only - for the entered model number
- XX = Custom
## F4T Flex Modules—Communication Ordering Information

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0830-0870-0000</td>
<td>Protective screen cover (2 per pack)</td>
</tr>
<tr>
<td>0822-0705-0000</td>
<td>F4T 1/4 DIN mounting collar - thru front panel mount</td>
</tr>
<tr>
<td>0216-1285-0000</td>
<td>Flush mount - mounting adapter plate</td>
</tr>
<tr>
<td>0847-0400-0000</td>
<td>USB 2.0 to RJ45 Ethernet adapter</td>
</tr>
<tr>
<td>0238-1245-ALUM</td>
<td>Accent bar (brushed aluminum gray)</td>
</tr>
<tr>
<td>0238-1245-REDD</td>
<td>Accent bar (brushed aluminum red)</td>
</tr>
<tr>
<td>0238-1245-BLUE</td>
<td>Accent bar (brushed aluminum blue)</td>
</tr>
<tr>
<td>16-0246</td>
<td>Current transformer</td>
</tr>
<tr>
<td>0804-0147-0000</td>
<td>RC supression - Quencharc®</td>
</tr>
<tr>
<td>0601-0001-0000</td>
<td>Controller support tools (DVD)</td>
</tr>
<tr>
<td>0830-0808-0001 (CAPUSB-MBS)</td>
<td>Rubber plug USB mini</td>
</tr>
<tr>
<td>0830-0808-0002 (CAPUSB-A)</td>
<td>Rubber plug USB host</td>
</tr>
<tr>
<td>0830-0858-0000</td>
<td>Replacement battery</td>
</tr>
<tr>
<td>0822-0769-0000</td>
<td>Module slot plug (for vacant F4T slots without flex modules)</td>
</tr>
</tbody>
</table>

## Accessories

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## Recommended Third-Party Components

<table>
<thead>
<tr>
<th>Mfg.</th>
<th>Mfg. Part Number</th>
<th>Description</th>
<th>Website</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amphenol</td>
<td>USBF 21N SCC</td>
<td>USB - A receptacle with self closing cap</td>
<td><a href="http://www.alliedelec.com">www.alliedelec.com</a></td>
</tr>
<tr>
<td>Amphenol</td>
<td>USBBF 21N SCC</td>
<td>USB - B receptacle with self closing cap</td>
<td><a href="http://www.alliedelec.com">www.alliedelec.com</a></td>
</tr>
<tr>
<td>Amphenol</td>
<td>RJF 21N SCC</td>
<td>RJ45 receptacle with self closing cap</td>
<td><a href="http://www.alliedelec.com">www.alliedelec.com</a></td>
</tr>
<tr>
<td>Molex</td>
<td>847290006</td>
<td>USB type A panel mount with 2 m cord</td>
<td><a href="http://www.alliedelec.com">www.alliedelec.com</a></td>
</tr>
<tr>
<td>Molex</td>
<td>84700-0003</td>
<td>Dust cover</td>
<td><a href="http://www.alliedelec.com">www.alliedelec.com</a></td>
</tr>
</tbody>
</table>

## Documentation

<table>
<thead>
<tr>
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<th>Description</th>
</tr>
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<tbody>
<tr>
<td>0600-0092-0000</td>
<td>Installation and Troubleshooting User Guide</td>
</tr>
<tr>
<td>0600-0093-0000</td>
<td>Setup and Operations User Guide</td>
</tr>
<tr>
<td>0600-0094-0000</td>
<td>F4T Controller Quick Start Guide</td>
</tr>
<tr>
<td>0600-0095-0000</td>
<td>Communications Flex Modules Quick Start Guide</td>
</tr>
<tr>
<td>0600-0096-0000</td>
<td>High Density Flex Modules Quick Start Guide</td>
</tr>
<tr>
<td>0600-0097-0000</td>
<td>Mixed I/O Flex Modules Quick Start Guide</td>
</tr>
</tbody>
</table>

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