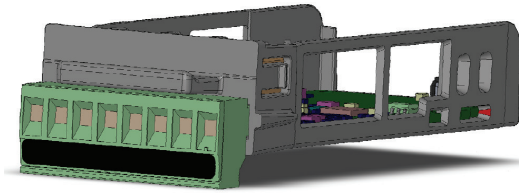


F4T Flex Module Quick Start Guide



Modbus® RTU Communications FMCA- [2]AAA-A _ _ _



1241 Bundy Boulevard., Winona, Minnesota USA 55987
Phone: +1 (507) 454-5300, Fax: +1 (507) 452-4507 <http://www.watlow.com/F4T.cfm>

0600-0095-0000 Rev. B
March 2015

Made in the U.S.A.

1 2
3 4

Installation and Wiring

To install the flex module:

1. Turn off power to the controller.
2. This module must be installed in slot 6. If replacing a module, remove the old module.
3. Affix slot number "6" labels (provided) to the module and to the removable screw terminal block.
5. With the component side of the module facing right (viewing the controller from the rear) insert the module in to the slot until it latches.
6. Remove the screw terminal block from the module.
7. Wire field bus to the appropriate terminals. Wiring details are provided below.
8. Reconnect the wired screw terminal block to the module. Be sure to reconnect the terminal block to the correct module.
9. Restore power to the controller.

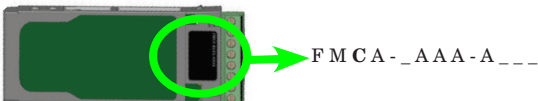
Note:

If the flex module is a replacement with the same part number the controller uses it immediately when powered up. Otherwise, use Composer software to configure the F4T to expect and use the module.

Module Characteristics

Description and Identification

Many of the modules appear to look alike at first glance, therefore, it is always recommended that the module part number be verified prior to plugging it into any of the available slots in a base. Each module is identified with a part number located on the back side of the assembly next to screw terminal block, as displayed in the graphic below.



Document Overview

The purpose of this Quick Start Guide (QSG) is to acquaint the user with the F4T communications Flex Modules and associated wiring.

Product Overview

F4T communications modules provide the necessary connections to various industrial fieldbus networks.

Available F4T Literature and Resources

All of the user documents listed below can be found on the Watlow website: <http://www.watlow.com/F4T.cfm>. The Watlow Support Tools DVD can be acquired by contacting Watlow customer service (507-494-5300).

Document Title and Part Number	Description
F4T Installation and Troubleshooting User Guide, part number: 0600-0092-0000	Provides detailed specifications and information regarding mounting the F4T base, flex module wiring and troubleshooting.
F4T Setup and Operations User Guide, part number: 0600-0093-0000	Explains how to configure the controller for an application with Composer software and how to operate the controller via its touchscreen interface. Includes detailed descriptions of all controller features and parameter settings as well as application examples.
F4T Specification Sheet	Describes F4T hardware options, features, benefits and technical specifications.
Watlow Support Tools DVD, part number: 0601-0001-0000	Contains all product related user documents and software (Composer), video tutorials, application notes and more.

Wiring

Note:

Wire size and torque for screw terminations:

- 0.0507 to 3.30 mm² (30 to 12 AWG) single-wire termination or two 1.31 mm² (16 AWG)
- 0.57 Nm (5.0 lb.-in.) torque

Note:

To prevent damage to the controller, do not connect wires to unused terminals.

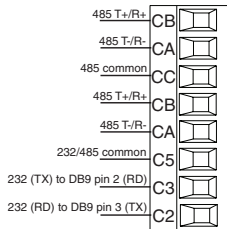
Note:

Modules IP10 when properly installed in base enclosure.

Wiring (cont.)

*EIA-232/485 Modbus RTU

FMCA - [2] A A A - A _ _ _



- Wire T-/R- to the A terminal of the EIA-485 port.
- Wire T+/R+ to the B terminal of the EIA-485 port.
- Wire common to the common terminal of the EIA-485 port.
- Do not route network wires with power wires.
- Connect network wires in daisy-chain fashion when connecting multiple devices in a network.
- A termination resistor may be required. Place a 120 Ω resistor across T+/R+ and T-/R- of last controller on network.
- Do not wire to both the EIA-485 and the EIA-232 pins at the same time.
- Two EIA-485 terminals of T/R are provided to assist in daisy-chain wiring.
- Do not connect more than one F4T controller on an EIA-232 network.
- Maximum number of controllers on a Modbus network is 247.
- Maximum EIA-232 network length: 15 meters (50 feet)
- Maximum EIA-485 network length: 1,200 meters (4,000 feet)
- 1/8th unit load on EIA-485 bus.

Modbus-IDA Terminal	EIA/TIA-485 Name	Watlow Terminal Label	Function
DO	A	CA or CD	T-/R-
D1	B	CB or CE	T+/R+
common	common	CC or CF	common

*Note:

This communications card must be inserted in slot 6.

Specifications

- EIA 232/485, Modbus® RTU (see vendor specifications: <http://www.modbus.org>)

Warranty

F4T Flex modules are manufactured by ISO 9001 registered processes and are backed by a three-year warranty to the first purchaser for use, providing that the modules have not been misapplied.

Technical Assistance

To get assistance from Watlow:

- Contact a local representative: see last page
- E-mail: wintechsupport@watlow.com
- Call: +1 (507) 494-5656 from 7 a.m. to 5 p.m. Central Standard Time (CST)

This F4T Quick Start Guide (QSG) is copyrighted by Watlow Electric Manufacturing Company, © March 2015 with all rights reserved.

5 6
7 8

Declaration of Conformity

Series EZ-ZONE® Flex Modules

WATLOW Electric Manufacturing Company
1241 Bundy Blvd.
Winona, MN 55987 USA

ISO 9001  since 1996.

Declares that the following products:

Designation: **Series EZ-ZONE® Flex Modules**
Model Numbers: FMMA-(LAJ, LCG, LEJ, MAJ, MCJ, MEJ, YEB)A-A(A', F', B', G')XX
FMMA-(R', P', C', E', F', K)(A', C', H, J, K)A-A(A', F', B', G')XX
FMMA-(R', P', C', E', F', K)(A', C', H, J, K)A-A(A', F', B', G')XX
Classification: FMCA, FMMA and FMHA are Process Control modules, FMCA are Communication modules; Modules are Integrated Controls in either **EZ-ZONE® CC or F4T Bases**; Modules are IP10 when properly installed.
Rated Voltage and Frequency: Relay, SSR or No-Arc Control outputs 24 - 240 Vac 50/60 Hz, Switched DC, Process and communications; low voltage SELV
Rated Power Consumption: At max 50°C, see manual for ratings at other ambient temperatures. No-arc relays 15A 1.C, Dual SSR module 1.C 10A each output, Mechanical relay 5A 125 VA, 25 VA at 24 Vac 1.B, Discreet SSR 1/2A 1.C 20VA, Quad SSR 1.C 0.7A 50 VA, Hex I/O 1.5A, all others SELV limited energy.

Flex Modules are considered components and have no function in and of themselves, it is only when installed in a **Watlow EZ-ZONE® CC or F4T Base** enclosure that they have useful function. Modules were tested as part of these systems for compliance with the following directives.

2004/108/EC Electromagnetic Compatibility Directive

EN 61326-1 2006 Electrical equipment for measurement, control and laboratory use – EMC requirements (Industrial Immunity, Class B Emissions).

2006/95/EC Low-Voltage Directive

EN 61010-1:2010 ED3 Safety Requirements of electrical equipment for measurement, control and laboratory use. Part 1: General requirements

EN 60730-1:2011


EN 60730-2:2010

Compliant output options.

When in EZ-ZONE® CC Base.

Automatic electrical controls for household and similar use – Particular requirements for temperature sensing controls. Only certain output options comply with 60730 spacing and dielectric requirements, see order information for compatible models.

Compliant with 2011/65/EC RoHS2 Directive

Per 2002/96/EC W.E.E Directive and 2006-66-EC Battery Directive  Please Recycle Properly.

See the Declarations of Conformity for **Watlow EZ-ZONE® CC and F4T** models for further details on standards used for compliance.

Joe Millanes
Name of Authorized Representative
Director of Operations
Title of Authorized Representative
Signature of Authorized Representative

Winona, Minnesota, USA
Place of Issue
July 2014
Date of Issue

How to Reach Us

Corporate Headquarters

Watlow Electric Manufacturing Company
12001 Lackland Road
St. Louis, MO 63146
Sales: 1-800-WATLOW2
Manufacturing Support: 1-800-4WATLOW
Email: info@watlow.com
Website: www.watlow.com
From outside the USA and Canada:
Tel: +1 (314) 878-4600
Fax: +1 (314) 878-6814

Latin America

Watlow de México S.A. de C.V.
Av. Fundación No. 5
Col. Parques Industriales
Querétaro, Qro. CP-76130
Mexico
Tel: +52 442 217-6235
Fax: +52 442 217-6403

Europe

Watlow France
Tour d'Asnières
4 Avenue Laurent Cély
92600 Asnières sur Seine
France
Tel: +33 (0)1 41 32 79 70
Télécopie: +33(0)1 47 33 36 57
Email: info@watlow.fr
Website: www.watlow.fr

Watlow GmbH
Postfach 11 65, Lauchwasenstr. 1
D-76709 Kronau
Germany
Tel: +49 (0) 7253 9400-0
Fax: +49 (0) 7253 9400-900
Email: info@watlow.de
Website: www.watlow.de

Watlow Italy S.r.l.
Viale Italia 52/54
20094 Corsico MI
Italy
Tel: +39 024588841
Fax: +39 0245869954
Email: italyinfo@watlow.com
Website: www.watlow.it

Watlow Ibérica, S.L.U.
C/Marte 12, Posterior, Local 9
E-28850 Torrejón de Ardoz
Madrid - Spain
T. +34 91 675 12 92
F. +34 91 648 73 80
Email: info@watlow.es
Website: www.watlow.es

Watlow UK Ltd.
Linby Industrial Estate
Linby, Nottingham, NG15 8AA
United Kingdom
Telephone: (0) 115 964 0777
Fax: (0) 115 964 0071
Email: info@watlow.co.uk
Website: www.watlow.co.uk
From outside The United Kingdom:
Tel: +44 115 964 0777
Fax: +44 115 964 0071

Asia and Pacific

Watlow Singapore Pte Ltd.
20 Kian Tech Lane 4th Floor
Singapore - 627854
Tel: +65 6773 9488 Fax: +65 6778 0323
Email: info@watlow.com.sg Website: www.watlow.com.sg

Watlow Australia Pty., Ltd.
4/57 Sharps Road
Tullamarine, VIC 3043
Australia
Tel: +61 3 9335 6449
Fax: +61 3 9330 3566
Website: www.watlow.com

Watlow Electric Manufacturing (Shanghai) Company
1118 Fanyuan Road, Anting Industrial Park, Jiading, Shanghai,
PRC 201203
People's Republic of China
Tel: +86 21 39509510
Fax: +86 21 5080-0906
Email: info@watlow.cn
Website: www.watlow.cn

ワトロー ジャパン株式会社
〒101-0047 東京都千代田区神田1-14-4
四国ビル別館9階
Tel: 03-3518-6630 Fax: 03-3518-6632
Email: info@watlow.com Website: www.watlow.co.jp

Watlow Japan Ltd.
1-14-4 Uchikanda, Chiyoda-Ku
Tokyo 101-0047
Japan
Tel: +81-3-3518-6630 Fax: +81-3-3518-6632
Email: info@watlow.com Website: www.watlow.co.jp

Watlow Korea Co., Ltd.
#2208, Hyundai KIC Building B, 70 Doosan-ro
Geumcheon-gu, Seoul
Republic of Korea
Tel: +82 (2) 2169-2600 Fax: +82 (2) 2169-2601
Website: www.watlow.co.kr

Watlow Malaysia Sdn Bhd
No. 14-3 Jalan 2/114
Kuchai Business Centre
Jalan Kuchai Lama
58200 Kuala Lumpur
Malaysia
Tel: +60 3 7980 7741 Fax: +60 3 7980 7739

瓦特能電機股份有限公司
No.143 高雄市府前金區七賢二路189號 10樓之1
電話: 07-2885168 傳真: 07-2885568

Watlow Electric Taiwan Corporation
10F-1 No.189 Chi-Shen 2nd Road Kaohsiung 80143
Taiwan
Tel: +886-7-2885168 Fax: +886-7-2885568

Your Authorized Watlow Distributor

