



Certificate Number: 1018011-1

Date: 2016-10-06

UL CONDITIONS OF ACCEPTABILITY

Company Name: FUTURE DESIGN CONTROLS INC

File-CCN: E197216 - QUYX2

Product Description: Process Control Equipment, Electrical

Models: FDC-L91 Series f/b 4 or 5, f/b 1 thru 4, f/b 1, 2, 6, or C, f/b 0, 1, 2, 6, 7, 8, 9, A, B, C, D, E or F, f/b blank or AA thru ZZ

FDC-4300, f/b 4 or 5, f/b 1, f/b 0 thru 6 or C, f/b 0 thru 9 or C, f/b 0 or 1, f/b 0 or 1, f/b 0 thru 5, f/b blank, 0 or 1, f/b blank or AA thru ZZ.

FDC- 9300 Series f/b 4 or 5, f/b 1, f/b 0 thru 6 or C, f/b 0 thru 9 or C, f/b 0, 1 or 2, f/b 0 thru 5, f/b blank or AA thru ZZ, Suitable to be mounted on vertical position on a flat surface of Type 4X enclosure.

Conditions Of Acceptability: When installed in the final use equipment, etc., the following are among the considerations to be made:

1. The device shall be installed in compliance with the enclosure, mounting, spacing, and segregation requirements of the ultimate application. Device shall be installed so that only the face of the enclosure is exposed in the end product.
2. The spacings, ratings, etc., recorded herein shall be judged in the ultimate application.
3. The terminals are not acceptable for field connection. The acceptability of connections to these terminals, including temperature and secureness, shall be determined in the ultimate application.

Ratings: Electrical

Supply Input:	Minimum 90, Maximum 264 V ac, 47-63 Hz, 7 W maximum, or 15 VA maximum Minimum 11, Maximum 26 V ac or dc, SELV, Limited Energy, 7 W maximum, or 15 VA maximum
Control Sensor:	SELV, Limited Energy
Load Output:	See Designation System

Environmental:

Maximum operating temperature, 50°C

Nomenclature: FDC-L91

Last 2 digits codes 5 & 6 are for special faceplate only, Typically these last 2 digits are left blank

1 - Power Input

- 4 90-264 V ac, 50/60 Hz
- 5 11-26 Vac/Vdc

2 - Signal Input

- 1 Universal Input T/C, RTD mV
- 2 Voltage DC: 0-1, 0-5, 1-5
- 3 Voltage: 0-10 V
- 4 mA: 0-20, 4-20

3 - Output 1

- 1 Form C Relay (SPDT)
2 Amps @240VDC resistive (N.O.)
- 2 SSR drive 5V DC @30mA
- 6 Triac -1Amp @240Vac
- C SSR 14VDC @40mA

4 - Option

- 0 None
- 1 Form A Relay 2A@240 Vac resistive (N.O.)
- 2 SSR Drive 5VDC@30mA
- 6 Triac - 1Amp@240 Vac
- 7 Transmitter Power Supply 20Vdc/25 mA (isolated)
- 8 Transmitter Power Supply 12Vdc/40 mA (isolated)
- 9 Transmitter Power Supply 5Vdc/80mA (isolated)
- A RS-485 (Modbus RTU)
- B Remote Reset
- C SSR Drive, 14VDC @40mA
- D Retransmission: 0-20/4-20 mA
- E Retransmission: 0-5/1-5VDC,(isolated)
10k ohm load min
- F Retransmission: 0-10VDC, (isolated)
10k ohm load min

5 – Faceplate

- Blank: Standard logo on faceplate
- AA thru ZZ: Custom logo or no logo on faceplate

Nomenclature: FDC-4300

DESIGNATION SYSTEM:

Example:	Model FDC-4300 -	X	X	X	X	X	X	X	X	X
	I	II	III	IV	V	VI	VII	VIII	IV	X

[Last two-digit code (Option X) is for special faceplate only ; typically this is left blank.]

I - Basic System

FTC-4300

II - Power Input

- 4 90-264V ac, 50/60 Hz
- 5 11-26V ac/V dc

III - Signal Input

- 1 Standard Input
 - Input 1 - Universal
 - T/C, RTD or 4/20, 0-20 mA
 - 0-1V, 0-5V, 1-5V, 0-10V dc
 - Input 2 – CT and Analog input*
 - 4-20, 0-20 mA, 0-1V, 0-5V, 1-5V, 0-10V dc
 - Current Transformer : 0-50 Amp AC current transformer
 - Input 3 - Event Input**

IV - Output 1

- 0 None
- 1 Form A Relay rated 2A/240V ac resistive (N.O.)
- 2 SSR Drive 5 V dc @30 mA
- 3 4-20/0-20 mA linear, isolated, max load 500 ohms
- 4 1-5 V/0-5 V dc linear, isolated, min impedance
10K ohms
- 5 0-10 V dc linear, isolated, min impedance
10K ohms
- 6 Triac 1A/240 V ac
- C SSR Drive 14 V dc @40mA

V - Output 2

- 0 None
- 1 Form A Relay 2A/240 V ac resistive (N.O.)
- 2 SSR Drive 5 V dc @30 mA
- 3 4-20 mA/0-20 mA linear, isolated, max load 500 ohms
- 4 1-5 V/0-5 Vdc linear, isolated, min impedance
- 5 0-10 V dc linear, isolated, min impedance
10K ohms
- 6 Triac 1A/240 V ac
- 7 Transmitter Power Supply 20VDC/25 mA (isolated)
- 8 Transmitter Power Supply 12VDC/40 mA (isolated)
- 9 Transmitter Power Supply 5VDC/80 mA (isolated)

C SSR Drive 14VDC @40 mA

VI - Alarm 1

- 0 None
- 1 Form C Relay 2A/240 V ac resistive (SPDT)

VII - Alarm 2

- 0 None
- 1 Form A Relay 2A/240 V ac resistive (N.O.)

VIII - Communications

- 0 None
- 1 RS-485 Modbus RTU
- 2 RS-232 Modbus RTU
- 3 Retransmission: 0-20/4-20 mA, isolated, 500 ohm load min
- 4 Retransmission: 0-5 V/1-5 V dc, isolated, 10K ohm load min
- 5 Retransmission: 0-10 V dc

IV – Enclosure Options

- Blank: None
- 0: None
- 1: Nema 4X

X – Faceplate

- Blank: Standard logo on faceplate
- AA thru ZZ: Custom logo or no logo on faceplate

Nomenclature: BTC-9300

DESIGNATION SYSTEM:

Example:	Model BTC-9300 -	X	X	X	X	X	X
	I	II	III	IV	V	VI	VII

I - Basic System

II - Power Input

- 4 90-264 V ac, 47-63 Hz
- 5 11-26 V ac/V dc, SELV, Limited Energy

III - Signal Input

- 1 Standard Input
Input 1 - Universal Input
Thermocouple: J, K, T, E, B, R, S, N, L
RTD: PT100 DIN, PT100 JIS

Current: 4-20 mA, 0-20 mA
Voltage: 0-1V, 0-5 V, 1-5 V, 0-10 V
Input 2 - CT : 0-50 A
Voltage Input: 0-1 V, 0-5 V, 1-5 V, 0-10 V
Input 3 - Event Input (EI)

IV - Output 1

- 0 None
- 1 Relay rated 2 A/240 V ac
- 2 Pulse voltage to drive SSR, 5 V/30 mA
- 3 Isolated 4-20 mA/0-20 mA
- 4 Isolated 1-5 V/0-5 V
- 5 Isolated 0-10 V
- 6 Triac Output 1 A/240 V ac, SSR
- C Pulse voltage to drive SSR, 14 V/40 mA