

PRICE BOOK



P.O. Box 1196 · Bridgeview, IL 60455
888.751.5444 Sales · 888.307.8014 Fax
Technical Support: 866.342.5332
<http://www.futuredesigncontrols.com>

CONTENTS

Analog Temperature Controls	
DIN Controls: 1/6, 1/8, 1/4	3
Board Level Series 121/122	4
Series 8: (wall mount 20 amp relay)	5
Microprocessor Temperature & Process Controls	
FDC MCT4 1/4 DIN Multi Loop Control.....	6
FDC - C Series: C22/R22 1/32 DIN and DIN Rail.....	10
C62	11
C82/C83/C42.....	12
FDC 300 Series: 2500 1/32 DIN.....	13
9300 1/16 DIN	14
8300 1/8 DIN & 4300 1/4 DIN	15
FDC 100 Series: 9100 1/16, 8100 1/8 & 4100 1/4 DIN	16
C Series single display C21 1/32 & C91 1/16 DIN.....	17
B41 Board Level PID Control	18
FDC P Series Profile Control: P91 1/16 & P41 1/4 DIN.....	19
B42 Board Level PID.....	20
FDC 90 Series: 9090 1/16 DIN	21
FM Approved High Limit Controls	
FDC L91 High Limit: 1/16 DIN.....	22
FDC L41 High Limit: 1/4 DIN.....	23
FDC 7L High Limit: DIN rail or surface mount.....	24
Temperature & Process Recorders	
Circular Chart	
DR5000	25
Strip Chart	
CR06: 6 channel 100mm.....	26
Paperless Recorder VR Series	
PR30 Series.....	27
PR20 Series.....	28
PR10 Series.....	29
VR Series: VR06 & VR18 (up to 6 or 18 analog inputs).....	32
FDC IO Modules (Analog/Digital IO to Serial)	34
Gateways: Serial to Ethernet, Wireless Serial/Ethernet, RS232-485 Converter.....	35
Brainchild <i>Smartpanel</i>/HMI Operator Interfaces.....	36
Miscellaneous	
DRA: DIN Rail / Surface Mounting Adapter for 1/32 & 1/16 DIN controls	37
DIN Control Spare Parts	38-39
Accessories: LAN, FDC Set Loop Control PC Configuration Software.....	40
Warranty	42

BASE PRICING:

FDC - 401/901	\$110.00	FDC - 805	\$200.00
FDC - 402/902	\$120.00	FDC - 404	\$175.00
FDC - 905	\$200.00	FDC - 405	\$225.00

Analog Controllers



(1/16 DIN)	FDC - 901/902/905	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(1/8 DIN)	FDC - 805								
(1/4 DIN)	FDC - 401/402/404/405								

1 2 3 4 5 6 7 8

Schedule A

1. POWER INPUT

1:	100-130VAC, 50/60HZ (901/902 ONLY)	N/C
2:	200-230VAC, 50/60HZ (901/902 ONLY)	N/C
3:	100-130VAC/200-240VAC, 50/60HZ (401/402 ONLY)	N/C
4:	90-240VAC, 50/60HZ (404/405/805/905 ONLY)	N/C

2. SIGNAL INPUT

1:	Type J Thermocouple	N/C
2:	Type K thermocouple	N/C
3:	RTD/PT100 Ohm (DIN)	N/C
9:	Special Order	

3. TEMPERATURE RANGE

Models FDC-905-805-405	N/C
C: 0 to 299C	
E: 0 to 499C	
H: 0 to 999C	
V: 0 to 999F	

Models FDC-901/902/401/402/404	N/C
E: 50 to 850F	
5: 0 to 400C	
6: 0 to 600C	

Consult factory for additional temperature ranges. Ranges not shown above may require a minimum quantity

4. CONTROL TYPE

1:	On-Off	N/C
2:	Proportional	N/C

5. OUTPUT 1 TYPE

0:	None	N/C
1:	Relay rated 5 amps @ 240VAC resistive, (N.O./N.C.) SPDT	N/C
2:	SSR Drive 3-32 VDC rated at 20mA @ 240VDC	N/C
3:	4-20mA linear, isolated, max load 500 ohms	\$28.00
4:	0-20mA linear, isolated, max load 500 ohms	\$28.00
5:	0-10VDC linear, isolated, max impedance 500K ohms	\$28.00
9:	Special Order	

6. OUTPUT 2 TYPE

0:	None	N/C
----	------	-----

7. ALARM OUTPUT

0:	NONE (use for models 901/902/905/401/402)	N/C
1:	Relay 2 amps @ 240VAC Resistive (N.O./N.C.) SPDT	\$18.00

Relay is for deviation alarm only on models 404/405/805

8. OPTIONS

0:	None	N/C
----	------	-----

Notes:

Proportional Control Output:

When specified with proportional control output note that "P" only control is available; Integral & Derivative are not offered [full PID]. If full PID and/or Auto Tune features are required refer to the Microprocessor based control [300](#), [100](#) and/or [C](#) Series.

Manual Reset Adjustment for Proportional Control Output:

A reset pot for adjusting proportional band is provided on all controls regardless if control is ordered as On-Off or Proportional; exceptions are the Models 901/902 & 401/402. A manual reset pot is only provided on these controls when ordered with Proportional control output.

On-Off and Proportional Control Output:

Controls ordered with Relay output may be field configured for On-Off or Time Proportioning Output [requires soldering]

Controls ordered with Relay output may have hardware modified to change Relay to Linear Proportional Outputs. [requires soldering output module or relay to replace original components.]

Differences — 901/401 and 902/402:

The 902/402 offer High/Low deviation LED indicators. When PV is within "x" % of Range of SP, LED operation is as follows:

PV within 1-5% of range of SP both LEDs ON
PV within 1% of range of SP both LEDs OFF
PV greater than 5% of range of SP, both LEDs will flash.



Models: 901, 902, 404, 405, 805: #E197216

Models: 404,805: #207210



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DIN Rail Mount Adapter for 1/16 DIN controls:
Model DRA-16 refer to page 37

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BASE PRICING:

FDC - 121 \$70.00
 FDC - 122 \$80.00



(Thermistor Input) **FDC - 121**
 (Thermocouple Input) **FDC - 122**

Schedule A

1	2	3	4	5	6	7	8	

1. POWER INPUT

1: 115VAC N/C
 2: 230VAC N/C
 3: 115/230VAC (FIELD SELECTABLE) \$12.00
 4: 24VAC \$10.00
 9: Special Order

2. SIGNAL INPUT

TH: THERMISTOR (FDC-121) N/C
 JT: "J" T/C (FDC-122) N/C
 KT: "K" T/C (FDC-122) N/C
 TT: "T" T/C (FDC-122) N/C
 ET: "E" T/C (FDC-122) N/C

3. INPUT RANGE

<u>THERMISTOR</u>		<u>THERMOCOUPLE</u>
21: 60 to 250°F	25: 150 to 350°F	01: 0 to 250°F
22: 200 to 400°F	26: 50 to 160°F	02: 0 to 500°F
23: 200 to 550°F	27: 0 to 100°F	03: 0 to 1000°F
24: 150 to 450°F	28: 70 to 140°F	04: 0 to 2000°F

4. SETPOINT ADJUST

A. Local SP adjust pot N/C
 B. Local SP adjust with graduated dial (122 ONLY) \$10.00
 C. Remote setpoint adjust pot \$15.00
 D. Remote setpoint adjust with graduated dial \$25.00
 9: Special Order

5. CONTROL TYPE

1: On/Off heating N/C
 2: On/Off cooling N/C
 3: Time proportional heating \$10.00
 4: Time proportional cooling \$10.00

6. OUTPUT TYPE / RATING

1: 20 AMP relay SPST (N.O.) N/C
 2: 20 AMP relay SPDT (N.O./N.C.) \$5.00
 3: SSR drive 24VDC @ 30MA N/C
 9: Special Order

7. DISPLAY

0: None N/C
 9: Special Order

8. OPTIONS

T: Snap track mtg. \$5.00
 9: Special Order

Consult Factory for additional power, voltage inputs & temperature ranges.
 Refer to Series 121/122 Sales brochure for specifications.

Notes:

Minimum order quantity of 25 units of the same part# per release is required.

Model with on/off SPST 30 Amp Relay Control Output:

- Hysteresis fixed approx. 2 to 3 degrees F.
- Control Action:
 - Standard open on Rise [heating]
 - Optional Close on Rise [cooling]

Models with Proportional Time Proportioning Output:

- Proportional Band is fixed at 2% of span.
- Time Proportioning Cycle Time is fixed at 15 seconds
- Consult factory for custom Proportional Band and/or Cycle times.



File#: E197958 RoHS Compliant

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SERIES 8

**SURFACE MOUNTING
LIMIT / CONTROL**

BASE PRICING:

FDC-8 \$170.00



FDC - 8	
Schedule A	1

1. INPUT RANGE

Z089:	Latching or on/off,	115/230VAC,	"K" T/C	0 TO 2000°F (-20 TO 110°C),	20A Relay, DIN rail
Z090:	Prop cont.,	115/230VAC,	"J" T/C	0 TO 1000°F (-20 TO 540°C),	20A Relay, DIN rail
Z093:	Latching or on/off,	115/230VAC,	"J" T/C	0 TO 1000°F (-20 TO 540°C),	20A Relay, DIN rail

Consult Factory for additional power, voltage inputs & temperature ranges.
Refer to Series 8 Sales brochure & manual for specifications.

Notes:

Models with Latching or on/off output (20 Amp Relay output [SPDT]):

- Hysteresis is 0.5% of range
- Output is latching as standard.
- Output is non-latching [on/off] when terminals 12 & 13 are shorted.

Models with Proportional Time Proportioning Output (20 Amp Relay output [SPDT]):

- Proportional Band is fixed at 2.5% of span.
- Time Proportioning Cycle Time is fixed at 20 seconds
- Consult factory for custom Proportional Band and/or Cycle times.

New Temperature Ranges have a NRE charge of \$150.00 net.

Minimum order for unit with a new Order Code is 25 units. A new Order Code is required for:

- New temperature range
- Existing range with a different input type
- Input Power change for existing range & input type.

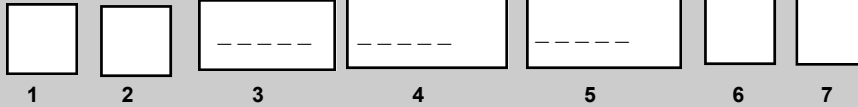
BASE PRICING:

MCT4 base price \$660.00

* A \$34.00 NET SURCHARGE PER DISPLAY WILL BE IN EFFECT FOR PRODUCT DELIVERED FEBRUARY 1ST THROUGH AUGUST 2023. THIS SURCHARGE IS TO COVER SHORT TERM COMPONENT PREMIUMS TO MAINTAIN PRODUCT FABRICATION STARTING JANUARY THROUGH JULY 2023



MCT4



1. Software Type

01: FDC MCT4 N/C
 YY: Special Order Code TBD

2. Power Input

4: 90-264VAC 50/60 HZ N/C
 5: 11-26VAC/VDC \$60.00

3. Module Type Slot 1

0: None N/C
 Pxxxx: Process Control Module **

**Refer to the PCM order matrix to complete part number above and module slot 1 price

4. Module Type Slot 2

0: None N/C
 Pxxxx: Process Control Module (Refer to PCM order matrix) **
 Hxxx: High Limit Module (Refer to HLM order matrix) **

**Refer to the PCM or HLM order matrix to complete part number above and module slot 2 price

5. Module Type Slot 3

0: None N/C
 Pxxxx: Process Control Module (pg x price book - 0 only if HLM in slot 2) **
 Hxxx: High Limit Module (pgx price book - 0 only if HLM in slot 2) **

**Refer to the PCM or HLM order matrix to complete part number above and module slot 3 price

6. Documentation

0: None N/C
 C: CD \$25.00
 U: USB memory stick \$25.00
 P: Printed Manual \$50.00

7. SPECIAL ORDER

00: None
 XX: Special Order Code

MCT4 part number and pricing example:

MCT4-01-4-P1111-P1111-H111-000
 MCT4 with 2 process control modules and a high limit Module. Standard software. 90-250VAC 50/60 HZ.

Slot #1 and #2 has PCM Modules is equipped with 4 relay outputs.
 Slot #3 has a HLM Module with 2 relay outputs.
 No special order code.

MCT4-01-4 BASE = \$660.00 (p.6)
PCM #1: P1111 = \$231.00 (p.7)
PCM #2: P1111 = \$231.00 (p.7)
HLM : H111 = \$187.00 (p.8)
Total : \$1,309.00

Additional Options (ordered separately):

SIO Analog Input Module:
 SIO-8AIU: Universal Analog Input, T/C-mA/VDC/mV \$600.00
 -Requires 24VDC Power Input

IO-Expander:
 FDC630TA-DC: 16 DI, 14 DO \$250.00
 -Requires 24VDC Power Input

Power Supply:
 PS5R-VB24: 24VDC, 15W \$35.00
 PS5R-VD24: 24VDC, 60W \$55.00



File#: E197216



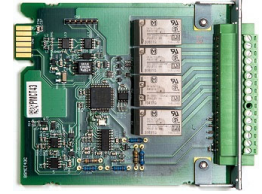
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6-7-2021 Corrected IO-Expander Price
 6-8-2021 Corrected Power Input Price, and Additional options
 3-30-2022 Updated SIO price
 4-26-22 Updated MCT base price

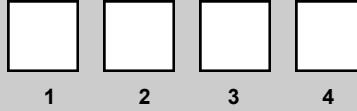
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BASE PRICING:

PCM base price \$165.00



P



PCM modules can be installed in slots 1, 2 or 3

1. Output 1

0:	None	N/C
1:	Relay 2A/240VAC (Form A)	N/C
2:	Pulsed voltage to drive SSR, 5V/30mA	N/C
3:	0-20mA/4-20mA isolated output (OM99-3)	\$28.00
4:	0-10VDC isolated output (OM99-5)	\$28.00
C:	Pulse voltage to drive SSR, 14V/40ma (OM99-7)	\$28.00

2. Output 2

0:	None	N/C
1:	Relay 2A/240VAC (Form A)	\$22.00
2:	Pulsed voltage to drive SSR, 5V/30mA	\$12.00
3:	0-20mA/4-20mA isolated output (OM99-3)	\$33.00
4:	0-10VDC isolated output (OM99-5)	\$33.00
7:	Transmitter power supply 20VDC/25mA (DC99-1)	\$33.00
8:	Transmitter power supply 12VDC/40mA (DC99-2)	\$33.00
A:	Transmitter power supply 5VDC/80mA (DC99-3)	\$33.00
C:	Pulse voltage to SSR, 14V/40mA (OM99-7)	\$28.00

3. OUTPUT 3

0:	None	N/C
1:	Relay 2A/240VAC (Form A)	\$22.00
2:	Pulsed voltage to drive SSR, 5V/30mA	\$12.00
7:	Transmitter power supply 20VDC/25mA (DC99-1)	\$33.00
8:	Transmitter power supply 12VDC/40mA (DC99-2)	\$33.00
A:	Transmitter power supply 5VDC/80mA (DC99-3)	\$33.00
C:	Pulse voltage to SSR, 14V/40mA (OM99-7)	\$28.00

4. OUTPUT 4

0:	None	N/C
1:	Relay 2A/240VAC (Form A)	\$22.00
2:	Pulsed voltage to drive SSR, 5V/30mA	\$12.00
3:	Retransmit 0-20mA/4-20mA isolated output (OM99-3)	\$33.00
4:	Retransmit 0-10VDC isolated output (OM99-5)	\$33.00
7:	Transmitter power supply 20VDC/25mA (DC99-1)	\$33.00
8:	Transmitter power supply 12VDC/40mA (DC99-2)	\$33.00
A:	Transmitter power supply 5VDC/80mA (DC99-3)	\$33.00
C:	Pulse voltage to SSR, 14V/40mA (OM99-7)	\$28.00

PCM part number and pricing example:

P1111

PCM BASE:	= \$165.00
Output #1 Relay:	= \$0.00
Output #2 Relay:	= \$22.00
Output #3 Relay:	= \$22.00
Output #4 Relay:	= \$22.00
Total :	\$231.00

P3110

PCM BASE:	= \$165.00
Output #1 mA Out:	= \$28.00
Output #2 Relay:	= \$22.00
Output #3 Relay:	= \$22.00
Output #4 None:	= \$0.00
Total :	\$237.00

PCM Modules support Universal Analog Signal Inputs T/C-RTD, mA and VDC.

Hardware configuration is via board DIP switch. Default hardware configuration is T/C-RTD.



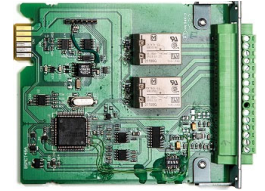
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BASE PRICING:

HLM base price \$165.00



H



HLM modules can be installed in:
 -slot 2 with 2-loop system
 -slot 3 with 3-loop system

1 2 3

1. Signal Input*

- | | |
|---|-----|
| 1: Thermocouple: J, K, T, E,
B, R, S, N, L, C, P, PT100, JIS, 0-60mV | N/C |
| 2: Voltage 0-1VDC | N/C |
| 3: Voltage 0-10VDC | N/C |
| 4: Current 0-20mA (4-20mA) | N/C |
| 5: Voltage 0-5V (1-5VDC) | N/C |

2. Output 1

- | | |
|---|---------|
| 0: None | N/C |
| 1: Relay 2A/240VAC (Form C) | N/C |
| 2: Pulsed Voltage to drive SSR, 5V/30mA | N/C |
| 3: Pulsed Voltage to drive SSR, 14V/40mA (OM99-7) | \$28.00 |

3. OUTPUT 2

- | | |
|---|---------|
| 0: None | N/C |
| 1: Relay 2A/240VAC (Form C) | \$22.00 |
| 2: Pulsed voltage to drive SSR 5V/30mA | \$12.00 |
| 7: Transmitter power supply 20VDC/25mA (DC99-1) | \$33.00 |
| 8: Transmitter power supply 12VDC/40mA (DC99-2) | \$33.00 |
| A: Transmitter power supply 5VDC/80mA (DC99-3) | \$33.00 |
| C: Pulse voltage to SSR, 14V/40mA (OM99-7) | \$28.00 |

HLM part number and pricing example:

H111

HLM BASE: = \$165.00
 Signal Input: = \$0.00
 Output #1 Relay: = \$0.00
 Output #2 Relay: = \$22.00
 Total : \$187.00

HLM signal input order code #1 supports analog input types T/ C-RTD, mA, 0-10 VDC, 4-20/0-20mA.
 Hardware configuration for each input type is via DIP switch.



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MCT Control Module Parts Pricing

PCM & HLM Output Components

Output Type	PCM Out #1, #2, #3 & #4 HLM Out #1 & #2	Cost
Relay 2A/240VAC (Form A)	R70417Q	\$22.00
0-20mA/4-20mA isolated	OM99-3	\$33.00
0-10VDC isolated	OM99-5	\$33.00
SSRD 5V/30mA Kit:	SSRD-5V/30mA	\$11.00
Pulse voltage to SSR 14V/40mA	OM99-7	\$28.00

Misc. Hardware and Mounting Screws

SD card holding clamp	10451-MTMCT45B-00	\$6.00
SD card mounting screw	10483-00300600701	\$6.00
Screws used to hold PCM, HLM, SD Mounting screw and the right / left end slots into enclosure (common to all) Part #: 10483-00300400701(package of 12) \$6.00		

PCM & HLM Transmitter Power Supply Components

Transmitter Power Supply

PCM Output #2, #3 and #4 /HLM Output #2		Cost
20VDC/25mA Supply	DC99-1	\$33.00
12VDC/40mA Supply	DC99-2	\$33.00
5VDC/80mA Supply	DC99-3	\$33.00

SIO Analog Input Module*

SIO-8AIU: Universal Analog Input, T/C-mA/VDC/mV	\$600.00
-Requires 24VDC Power Input	

IO- Expander*

FDC630TA-DC: 16 DI, 14 DO	\$250.00
-Requires 24VDC Power Input	

Terminal Blocks for MCT4 Enclosure, PCM & HLM

Terminal Blocks

Power Input :		
Part #: 10343-1203A-01-10		\$6.00
Comms :		
Part #: 10343-1202B-10-00		\$5.00
PCM :		
Part #: 10343-1216B-03-00		\$22.00
HLM :		
Part #: 10343-1216B-10-00		\$22.00

Note: the terminal block mounting screw used to hold the plug to the header is attached with Plug.

Power Supply

PS5R-VB24: 24VDC, 15W	\$35.00
PS5R-VD24: 24VDC, 60W	\$55.00

Documentation

MCT4-UserManual-CD	\$25.00
MCT4-UserManual-USB	\$25.00
MCT4-UserPrinted-Manual	\$50.00

Optional Components

UDF115 (8GB): 8GB Memory Stick	\$15.00
SD-4MA: 8GB SD (MCT Firmware Installed)	\$50.00

6-7-2021 Corrected IO-Expander Price
6-8-2021 Updated SIO and IO descriptions
3-30-2022 Updated SIO price

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BASE PRICING:

FDC - C22 \$140.00
FDC - R22 \$170.00



(1/32 DIN) FDC - C22
(DIN Rail) FDC - R22



Schedule A

1 2 3 4 5 6

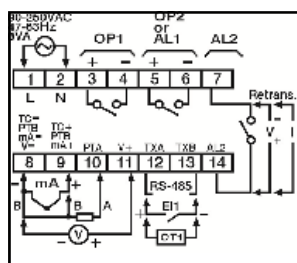
1. POWER INPUT

4: 90-264VAC 50/60 HZ N/C
5: 11-40 VDC / 20-28 VAC, 47-63Hz \$15.00

2. OUTPUT 1

1: Form A Relay* N/C
2: SSR Drive 5VDC @30 mA N/C
3: Isolated 4-20 mA/0-20 mA (OM98-3) \$33.00
5: Isolated 0-10VDC (OM98-5) \$33.00
C: SSR Drive 14VDC @40 mA (OM94-7) \$28.00

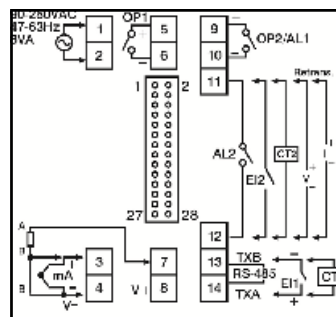
C22 Terminal Connection



3. OUTPUT 2 /ALARM 1

0: None N/C
1: Form A Relay* \$12.00
2: SSRD 5VDC @30 mA \$12.00
3: Isolated 4-20/0-20 mA (OM98-3) \$33.00
5: Isolated 0-10VDC (OM98-5) \$33.00
C: SSR Drive 14VDC @ 40 mA (OM94-7) \$28.00

R22 Terminal Connection



4. OPTION 1

0: None N/C
1: RS-485 (Modbus) \$55.00
2: 1 Event Input (EI1) \$12.00
3: 1 CT Input (CT1) \$12.00

5. OPTION 2

0: None N/C
1: Retransmission 4-20mA/0-20mA (OM98-3) \$55.00
2: Retransmission 0-10VDC (OM98-5) \$55.00
3: Alarm 2 (Form A Relay)* \$12.00
4: 1 Event Input (EI2 only for R22) \$12.00
5: 1 CT Input (CT2 only for R22) \$12.00

*Form A Relay 2A/240 VAC resistive

CT Sensor 50 amp (0-5vdc out)
CT98-1 \$35.00

DIN Rail Mount Adapter (C22 only) model DRA-32 refer to page 37

6. SPECIAL

00: None N/C



File#: E197216



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FDC-C Series FDC C62

1/16 DIN CONTROLLER

BASE PRICING:

FDC - C62 \$155.00



FDC-C62

Schedule A																			
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20

1. POWER INPUT

- 4: 90 - 264VAC, 50/60 Hz N/C
- 5: 11-40 VDC / 20-28 VAC, 47-63Hz \$15.00

2. OUTPUT 1

- 1: Form A Relay* N/C
- 2: SSR Drive 5VDC @30 mA N/C
- 3: Isolated 4-20 mA/0-20 mA (OM98-3) \$33.00
- 5: Isolated 0-10VDC (OM98-5) \$33.00
- C: SSR Drive 14VDC @40 mA (OM94-7) \$28.00

3. OUTPUT 2 / ALARM 1

- 0: None N/C
- 1: Form A Relay* \$12.00
- 2: SSRD 5VDC @30 mA \$12.00
- 3: Isolated 4-20/0-20 mA (OM98-3) \$33.00
- 5: Isolated 0-10VDC (OM98-5) \$33.00
- C: SSR Drive 14VDC @ 40 mA (OM94-7) \$28.00

4. ALARM 2

- 0: None N/C
- 1: Form A Relay* \$12.00

5. OPTION1

- 0: None N/C
- 1: RS-485(Modbus) \$55.00

6. OPTION 2

- 0: None N/C
- 1: 2 Event Inputs \$12.00
- 2: 1 Event Input and 1 CT Input \$25.00
- 3: 2 CT Input \$25.00

7. OPTION 3

- 0: NONE N/C
- 1: Retransmission 4-20mA/0-20mA (OM98-3) \$55.00
- 2: Retransmission 0-10VDC (OM98-5) \$55.00
- 3: Alarm 3 (Form A Relay)* \$12.00

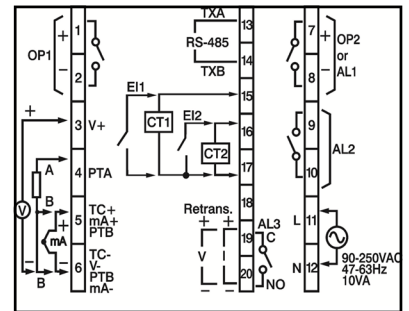
8. OPTION 4

- 0: None N/C
- 1: Terminal Cover \$10.00

9. SPECIAL ORDER

- 00: None N/C

C62 Terminal Connection



*Form A Relay 2A/240 VAC resistive

CT Sensor 50 amp (0-5vdc out)
 CT94-1 \$35.00

DIN Rail Mount Adapter model DRA-16 refer to page 37



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<http://www.futuredesigncontrols.com>

BASE PRICING:

FDC - C82	\$199.00
FDC - C83	\$199.00
FDC - C42	\$199.00

Profile option has 16 steps
1, 2 or 4 profiles have 16, 8 or 4 steps each



(1/8 DIN Vertical)	FDC - C82
(1/8 DIN Horizontal)	FDC - C83
(1/4 DIN)	FDC - C42

Schedule A



1. POWER INPUT

4: 90 - 264VAC, 50/60 Hz	N/C
5: 11-40 VDC / 20-28 VAC, 47-63Hz	\$15.00

2. OUTPUT 1

1: Form A Relay*	N/C
2: SSR Drive 5VDC @30 mA	N/C
3: Isolated 4-20 mA/0-20 mA (OM98-3)	\$33.00
5: Isolated 0-10VDC (OM98-5)	\$33.00
C: SSR Drive 14VDC @40 mA (OM94-7)	\$28.00

3. OUTPUT 2 / ALARM 1

0: None	N/C
1: Form A Relay*	\$12.00
2: SSRD 5VDC @30 mA	\$12.00
3: Isolated 4-20/0-20 mA (OM98-3)	\$33.00
5: Isolated 0-10VDC (OM98-5)	\$33.00
C: SSR Drive 14VDC @ 40 mA (OM94-7)	\$28.00

4. ALARM 2 to 3

0: None	N/C
1: Form A Relay* on Alarm 2	\$12.00
2: Form A Relay* on Alarm 2 to 3	\$24.00

5. EVENT INPUTS

0: None	N/C
1: 6 Event Inputs	\$12.00

6. OPTION 1

0: None	N/C
1: RS-485 (Modbus) and Remote Setpoint	\$55.00

7. OPTION 2

0: None	N/C
1: 1CT Inputs and Remote Setpoint	\$24.00
2: 2CT Inputs and Remote Setpoint	\$36.00

8. OPTION 3

0: NONE	N/C
1: Retransmission 4-20mA/0-20mA (CM98-3) and Remote Setpoint	\$55.00
2: Retransmission 0-10VDC (CM98-5) and Remote Setpoint	\$55.00
3: Alarm 4 Form A Relay* and Remote Setpoint	\$12.00
4: Alarm 4, Form A Relay*, Remote Setpoint #1 and 4-20mA/0-20mA Retrains (CM98-3)	\$67.00
5: Alarm 4, Form A Relay*, Remote Setpoint #1 and 0-10VDC Retrains (CM98-5)	\$67.00

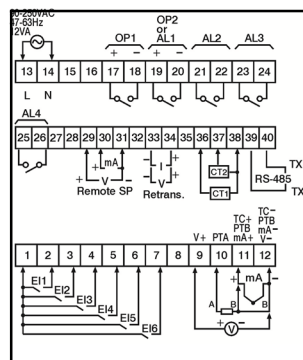
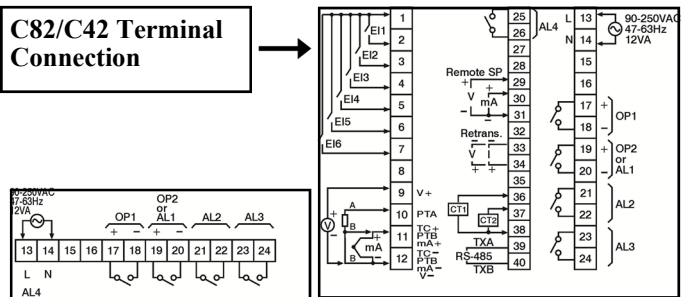
9. OPTION 4

0: None	
1: Terminal Cover	\$10.00
2: Ramp & Soak Profiler	\$35.00
3: Terminal cover and Ramp & Soak Profiler	\$45.00

10. SPECIAL

00: None	N/C
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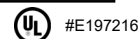
C82/C42 Terminal Connection



C83 Terminal Connection

*Form A Relay 2A/240 VAC resistive

* CT Sensor 50 amp (0-5vdc out)
CT98-1 \$35.00



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BASE PRICING:

FDC - 2500 \$225.00



FDC-2500

1	2	3	4	5	6	7	

Schedule A

1. POWER INPUT

- 4: 90 - 264VAC, 50/60 Hz N/C
- 5: 11 - 26VAC/VDC \$15.00
- 9: Special Order

2. SIGNAL INPUT

- 1: Input 1—Universal N/C
T/C, RTD or 4-20, 0-20mA
0-1V, 0-5V, 1-5V, 0-10VDC
- Input 2—CT/Analog Input/Event Input
CT: 0-50 Amp AC current transformer*
4/20, 0-20mA, 0-1V, 1-5V, 0-10VDC
(mA inputs require 250 OHM resistor)
- Event Input
- 9: Special Order

3. OUTPUT 1

- 0: None N/C
- 1: Relay 2A/240VAC resistive (SPST) N/C
- 2: SSR Drive 5VDC @30mA N/C
- 3: 4-20 / 0-20VDC linear, max load 500 ohms \$28.00
- 4: 1-5 / 0-5VDC linear, min impedance 10K ohms \$28.00
- 5: 0-10VDC linear, min impedance 10K ohms \$28.00
- 6: Triac 1A/240VAC \$28.00
- C: SSR Drive 14VDC @40mA \$28.00
- 9: Special Order

4. OUTPUT 2 / ALARM 2 (control out is PID Cool only)

- 0: None N/C
- 1: Form A Relay 2A/240VAC resistive (N.O.) \$12.00
- 2: SSR Drive 5VDC @30mA \$12.00
- 3: 4-20 / 0-20mA linear, max load 500 ohms \$28.00
- 4: 1-5 / 0-5VDC linear, min impedance 10K ohms \$28.00
- 5: 0-10VDC linear, min impedance 10K ohms \$28.00
- 6: Triac 1A/240VAC \$28.00
- 7: Transmitter Power Supply 20VDC/25mA (isolated) \$28.00
- 8: Transmitter Power Supply 12VDC/40mA (isolated) \$28.00
- 9: Transmitter Power Supply 5VDC/80mA (isolated) \$28.00
- C: SSR Drive 14VDC @40mA \$28.00
- A: Special Order

5. ALARM 1

- 1: Logic Output, 5V/100 mA N/C

6. COMMUNICATIONS

- 0: None N/C
- 1: RS-485 \$75.00
- 2: RS-232** \$75.00
- 3: Retransmission: 0-20/4-20mA, isolated,
500 ohm load min \$90.00
- 4: Retransmission: i0-5/1-5 VDC, isolated,
10K ohm load min \$90.00
- 5: Retransmission: 0-10 VDC isolated,
10K ohm load min \$90.00
- 9: Special Order

7. SPECIAL ORDER

Leave Blank unless assigned a specific 2-character Special Order Code

Note: The last digit (code 7) is typically left blank

*Order CT94-1 if heater break function is required.
CT-94 0-50AMP CT - \$35.00

**Alternative between RS-232 and Input 2.

Output 2: Configurable for PID cool (requires output #1 to be PID):
PID cool outputs: Relay, SSR or mA/VDC.
Configurable as Alarm #2: Relay & SSR output

DIN Rail Mount Adapter model DRA-32 refer to page 37

BASE PRICING:

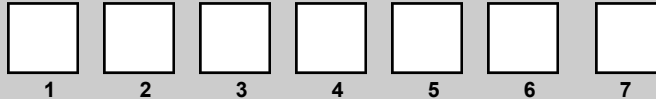
FDC - 9300 \$245.00

FDC-9300



(1/16 DIN) FDC-9300

Schedule A



1. POWER INPUT

- 4: 90-264VAC 50/60 HZ N/C
- 5: 11-26VAC/VDC \$15.00
- 9: Special Order

2. SIGNAL INPUT

- 1: *Input 1 - Universal* N/C
 T/C, RTD or 4/20, 0-20 mA
 0-1V, 0-5V, 1-5V, 0-10VDC
- Input 2—CT and Analog input ** N/C
 4-20, 0-20 mA, 0-1V, 0-5V, 1-5V, 0-10VDC
 CT: 0-50 Amp AC current transformer
- Input 3—Event Input *** N/C
- 9: Special Order

3. OUTPUT 1

- 0: None N/C
- 1: Form A Relay 2A/240VAC resistive (N.O.) N/C
- 2: SSR Drive 5VDC @30 mA N/C
- 3: 4-20/0-20 mA linear, isolated, max load 500 ohms \$28.00
- 4: 1-5/0-5VDC linear, isolated, min impedance8
 10K ohms \$28.00
- 5: 0-10VDC linear, isolated, min impedance
 10K ohms \$28.00
- 6: Triac 1A/240VAC \$28.00
- C: SSR Drive 14VDC @40 mA \$28.00
- 9: Special Order

4. OUTPUT 2 / Alarm 2 (control out is PID Cool only)

- 0: None N/C
- 1: Form A Relay 2A/240VAC resistive (N.O.) \$12.00
- 2: SSR Drive 5VDC @30 mA \$12.00
- 3: 4-20/0-20 mA linear, isolated, max load 500 ohms \$28.00
- 4: 1-5/0-5VDC linear, isolated, min impedance
 10K ohms \$28.00
- 5: 0-10VDC linear, isolated, min impedance
 10K ohms \$28.00
- 6: Triac 1A/240VAC \$28.00
- 7: Transmitter Power Supply 20VDC/25 mA (isolated) \$28.00
- 8: Transmitter Power Supply 12VDC/40 mA (isolated) \$28.00
- 9: Transmitter Power Supply 5VDC/80 mA (isolated) \$28.00
- C: SSR Drive 14VDC @40 mA \$28.00
- A: Special Order

5. ALARM 1

- 0: None N/C
- 1: Form A Relay 2A/240VAC resistive (N.O.) \$12.00
- 2: Form B Relay 2A/240VAC resistive (N.C.) \$12.00
- 9: Special Order

6. COMMUNICATIONS

- 0: NONE N/C
- 1: RS-485 Modbus RTU \$75.00
- 2: RS-232 Modbus RTU \$75.00
- 3: Retransmission: 0-20/4-20 mA, isolated,
 500 ohm load min \$90.00
- 4: Retransmission: 0-5/1-5 VDC, isolated,
 10K ohm load min \$90.00
- 5: Retransmission: 0-10 VDC, isolated,
 10K ohm load min \$90.00
- 9: Special Order

7. SPECIAL ORDER

Leave Blank unless assigned a specific 2-character
 Special Order Code

Note: The last digit (code 7) is typically left blank

*** CT Sensor 50 amp (0-5vdc out)**

CT94-1 \$35.00

** Alternative between RS-232 and Event Input

Output 2: Configurable for PID cool (requires output #1 to be PID):
 PID cool outputs: Relay, SSR or mA/VDC.
 Configurable as Alarm #2: Relay & SSR output

DIN Rail Mount Adapter model DRA-16 refer to page 37



File#: E197216



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<http://www.futuredesigncontrols.com>



BASE PRICING:

FDC - 8300	\$300.00
FDC - 4300	\$360.00

(1/8 DIN)	FDC - 8300	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(1/4 DIN)	FDC - 4300	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Schedule A

1 2 3 4 5 6 7 8 9

1. POWER INPUT

4:	90-264VAC 50/60 HZ	N/C
5:	11-26VAC/VDC	\$15.00
9:	Special Order	

2. SIGNAL INPUT

1:	Input 1 - Universal T/C, RTD or 4/20, 0-20 mA 0-1V, 0-5V, 1-5V, 0-10VDC	N/C
	Input 2—CT and Analog input * 4-20, 0-20 mA, 0-1V, 0-5V, 1-5V, 0-10VDC CT: 0-50 Amp AC current transformer	N/C
	Input 3—Event Input	N/C
9:	Special Order	

3. OUTPUT 1

0:	None	N/C
1:	Form A Relay 2A/240VAC resistive (N.O.)	N/C
2:	SSR Drive 5VDC @30 mA	N/C
3:	4-20/0-20 mA linear, isolated, max load 500 ohms	\$28.00
4:	1-5/0-5VDC linear, isolated, min impedance 10K ohms	\$28.00
5:	0-10VDC linear, isolated, min impedance 10K ohms	\$28.00
6:	Triac 1A/240VAC	\$28.00
C:	SSR Drive 14VDC @40 mA	\$28.00
9:	Special Order	

4. OUTPUT 2 (control PID Cool only)

0:	None	N/C
1:	Form A Relay 2A/240VAC resistive (N.O.)	\$12.00
2:	SSR Drive 5VDC @30 mA	\$12.00
3:	4-20/0-20 mA linear, isolated, max load 500 ohms	\$28.00
4:	1-5/0-5VDC linear, isolated, min impedance 10K ohms	\$28.00
5:	0-10VDC linear, isolated, min impedance 10K ohms	\$28.00
6:	Triac 1A/240VAC	\$28.00
7:	Transmitter Power Supply 20VDC/25 mA (isolated)	\$28.00
8:	Transmitter Power Supply 12VDC/40 mA (isolated)	\$28.00
9:	Transmitter Power Supply 5VDC/80 mA (isolated)	\$28.00
C:	SSR Drive 14VDC @40 mA	\$28.00
A:	Special Order	

5. ALARM 1

0:	None	N/C
1:	Form C Relay 2A/240VAC resistive***	\$12.00
9:	Special Order	

6. ALARM 2

0:	None	N/C
1:	Form A Relay 2A/240VAC resistive (N.O.)	\$12.00
9:	Special Order	

7. COMMUNICATIONS

0:	NONE	N/C
1:	RS-485 Modbus RTU	\$75.00
2:	RS-232 Modbus RTU	\$75.00
3:	Retransmission: 0-20/4-20 mA, isolated, 500 ohm load min	\$90.00
4:	Retransmission: 0-5/1-5 VDC, isolated, 10K ohm load min	\$90.00
5:	Retransmission: 0-10 VDC, isolated, 10K ohm load min	\$90.00
9:	Special Order	

8. ENCLOSURE OPTIONS

0:	IP50 Standard	N/A
1:	IP65 (Nema 4X)	\$10.00

9. SPECIAL ORDER

Leave Blank unless assigned a specific 2-character
 Special Order Code

Note: The last digit (code 9) is typically left blank

* CT Sensor 50 amp (0-5vdc out)
 CT94-1 \$35.00

Output 2: Configurable for PID cool (requires output #1 to be PID):
 PID cool outputs: Relay, SSR or mA/VDC.



File#: E197216



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BASE PRICING:

FDC - 9100	\$175.00
FDC - 8100	\$220.00
FDC - 4100	\$220.00



(1/16 DIN)	FDC - 9100	<input type="checkbox"/>
(1/8 DIN)	FDC - 8100	<input type="checkbox"/>
(1/4 DIN)	FDC - 4100	<input type="checkbox"/>



Schedule A

1 2 3 4 5 6 7 8

1. POWER INPUT

4:	90-250VAC 50/60 HZ	N/C
5:	11-26VAC/VDC	\$15.00
9:	Special Order	

2. SIGNAL INPUT

1:	Thermocouple: J,K,T,E,B,R,S,N,L RTD: PT100DIN & JIS	N/C
3:	0-1VDC	\$15.00
4:	0-5VDC	\$15.00
5:	1-5VDC	\$15.00
6:	4-20mA	\$15.00
7:	0-20mA	\$15.00
8:	0-10VDC	\$15.00

3. OUTPUT 1

0:	None	N/C
1:	Relay 2A/240VAC resistive (SPST)	N/C
2:	SSR Drive 5VDC @ 30mA	N/C
3:	4-20/0-20mA linear, isolated, max load 500 ohms	\$28.00
4:	1-5/0-5VDC linear, isolated, min impedance, 10K ohms	\$28.00
5:	0-10 VDC linear, isolated min impedance 10K ohms	\$28.00
6:	Triac 1A/240VAC	\$28.00
C:	SSR Drive 14VDC @40mA	\$28.00
9:	Special Order	

4. OUTPUT 2 / ALARM 2 (control PID Cool only)

0:	None	N/C
1:	Form A Relay 2A/240VAC resistive (SPST)	\$12.00
2:	SSR Drive 5VDC @30mA	\$12.00
3:	4-20/0-20mA linear, isolated, max load 500 ohms	\$28.00
4:	1-5/0-5VDC linear, isolated, min impedance 10K ohms	\$28.00
5:	0-10VDC linear, isolated, min impedance 10K ohms	\$28.00
6:	Triac 1A/240VAC	\$28.00
7:	Transmitter Power Supply 20VDC/25mA (isolated)	\$28.00
8:	Transmitter Power Supply 12VDC/40mA (isolated)	\$28.00
9:	Transmitter Power Supply 5VDC/80mA (isolated)	\$28.00
C:	SSR Drive 14VDC @40mA	\$28.00
A:	Special Order	

5. ALARM 1

0:	None	N/C
1:	Form C Relay 2A/240VAC resistive (SPDT)	\$12.00
9:	Special Order	

6. COMMUNICATIONS

0:	None	N/C
1:	RS-485 Modbus RTU	\$75.00
2:	RS-232 Modbus RTU	\$75.00
3:	Retransmission: 0-20/4-20mA isolated, 500 ohm load min	\$90.00
4:	Retransmission: 0-5/1-5 VDC, isolated, 10K ohm load min	\$90.00
5:	Retransmission: 0-10 VDC, isolated, 10K ohm load min	\$90.00
9:	Special Order	

7. PROTECTIVE CLASS

0:	IP50 Standard	N/C
1:	IP65 (Nema 4X)	\$10.00
2:	DIN Rail Mount w/IP50 (FDC-9100 only)	\$10.00
3:	DIN Rail Mount w/IP65 (FDC-9100 only)	\$20.00
9:	Special Order	

8. SPECIAL ORDER

Leave Blank unless assigned a specific 2-character Special Order Code

Note: The last digit (code 8) is typically left blank

Output 2: Configurable for PID cool (requires output #1 to be PID);
PID cool outputs: Relay, SSR or mA/VDC.

FDC-9100 DIN Rail Mount Adapter model DRA-16 refer to page 37



#209463



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BASE PRICING:

FDC - C91	\$155.00
FDC - C21	\$155.00

(1/16 DIN)	FDC - C91	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(1/32 DIN)	FDC - C21	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Schedule A

1 2 3 4 5 6 7

1. POWER INPUT

4:	90-250VAC 50/60 HZ	N/C
5:	11-26VAC/VDC	\$15.00
9:	Special Order	

2. SIGNAL INPUT

1:	Thermocouple: J,K,T,E,B,R,S,N,L RTD: PT100DIN & JIS	N/C
3:	0-1VDC	\$15.00
4:	0-5VDC	\$15.00
5:	1-5VDC	\$15.00
6:	4-20mA	\$15.00
7:	0-20mA	\$15.00
8:	0-10VDC	\$15.00

3. OUTPUT 1

0:	None	N/C
1:	Relay 2A/240VAC resistive (SPST)	N/C
2:	SSR Drive 5VDC @30mA	N/C
3:	4-20/0-20mA linear, isolated, max load 500 ohms	\$28.00
4:	1-5/0-5VDC linear, isolated, min impedance 10K ohms	\$28.00
5:	0-10VDC linear, isolated, min impedance 10K ohms	\$28.00
6:	Triac 1A/240VAC	\$28.00
C:	SSR Drive 14VDC @40mA	\$28.00
9:	Special Order	

4. OUTPUT 2 / Alarm (control PID Cool only)

0:	None	N/C
1:	Form A Relay 2A/240VAC resistive (SPST)	\$12.00
2:	SSR Drive 5VDC @30mA	\$12.00
3:	4-20/0-20mA linear, isolated, max load 500 ohms	\$28.00
4:	1-5/0-5VDC linear, isolated, min impedance 10K ohms	\$28.00
5:	0-10VDC linear, isolated, min impedance 10K ohms	\$28.00
6:	Triac 1A/240VAC	\$28.00
7:	Transmitter Power Supply 20VDC/25mA (isolated)	\$28.00
8:	Transmitter Power Supply 12VDC/40mA (isolated)	\$28.00
9:	Transmitter Power Supply 5VDC/80mA (isolated)	\$28.00
A:	RS485 Modbus RTU (C91 only)	\$75.00
C:	SSR Drive 14VDC @40mA	\$28.00
D:	Retransmission 0-20/4-20mA (C91 only), isolated, 500 ohm load	\$90.00
E:	Retransmission 0-5/1-5VDC (C91 only), isolated, 10k ohm load	\$90.00
F:	Retransmission 0-10VDC (C91 only), isolated, 10k ohm load	\$90.00
B:	Special Order	

5. COMMUNICATIONS

0:	None	N/C
1:	RS-485 Modbus RTU	\$75.00
2:	RS-232 Modbus RTU	\$75.00
3:	Retransmission: 0-20/4-20mA, isolated, 500 ohm load min	\$90.00
4:	Retransmission: 0-5/1-5VDC, isolated, 10K ohm load min	\$90.00
5:	Retransmission: 0-10VDC, isolated, 10K ohm load min	\$90.00
9:	Special Order	

6. DISPLAY COLOR

0:	Red	N/C
1:	Green	N/C

7. SPECIAL ORDER

Leave Blank unless assigned a specific 2-character Special Order Code

Note: The last digit (code 7) is typically left blank.

Output 2: Configurable for PID cool (requires output #1 to be PID):
PID cool outputs: Relay, SSR or mA/VDC.

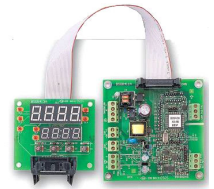
DIN Rail Mount Adapter models DRA-16 & 32 refer to page 37



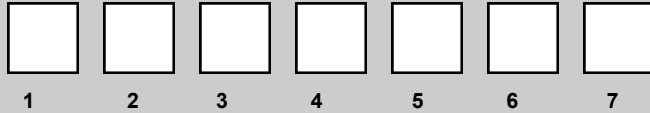
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BASE PRICING:

FDC - B41 \$165.00



Schedule A



1. POWER INPUT

- 4: 90-250VAC 50/60 HZ N/C
- 5: 11-26VAC/VDC \$15.00
- 9: Special Order

2. SIGNAL INPUT

- 1: Thermocouple: J,K,T,E,B,R,S,N,L N/C
RTD: PT100DIN & PT100 JIS
- 9: Other: (refer to manual for matrix codes for mA, VDC & mV)

3. OUTPUT 1

- 0: None N/C
- 1: Relay 2A/240VAC resistive (SPST) N/C
- 2: SSR Drive 5VDC @ 30mA N/C
- 3: 4-20/0-20mA linear, isolated, max load 500 ohms \$28.00
- 4: 1-5/0-5VDC linear, isolated, min impedance
10K ohms \$28.00
- 5: 0-10 VDC linear, isolated, min impedance
10K ohms \$28.00
- 6: Triac 1A/240VAC \$28.00
- C: SSR Drive 14VDC @ 40mA \$28.00
- 9: Special Order

4. OUTPUT 2 / Alarm 2 (control PID Cool only)

- 0: None N/C
- 1: Form A Relay 2A/240VAC resistive (SPST) \$12.00
- 2: SSR Drive 5VDC @ 30mA \$12.00
- 3: 4-20/0-20mA linear, isolated, max load 500 ohms \$28.00
- 4: 1-5/0-5VDC linear, isolated, min impedance
10K ohms \$28.00
- 5: 0-10VDC linear, isolated, min impedance
10K ohms \$28.00
- 6: Triac 1A/240VAC resistive \$28.00
- 7: Transmitter Power Supply 20VDC/25mA (isolated) \$28.00
- 8: Transmitter Power Supply 12VDC/40mA (isolated) \$28.00
- 9: Transmitter Power Supply 5VDC/80mA (isolated) \$28.00
- C: SSR Drive rated at 40mA/14VDC \$28.00
- A: Special Order

5. ALARM 1

- 0: None N/C
- 1: Form C Relay 2A/240VAC resistive (SPDT) \$12.00
- 9: Special Order

6. COMMUNICATIONS

- 0: None N/C
- 1: RS-485 Modbus RTU \$75.00
- 2: RS-232 Modbus RTU \$75.00
- 3: Retransmission: 0-20/4-20mA, isolated,
500 ohm load min \$90.00
- 4: Retransmission: 0-5/1-5VDC, isolated,
10K ohm load ,min \$90.00
- 5: Retransmission: 0-10VDC, isolated, 10K ohm load \$90.00
- 9: Special Order

**7. LENGTH OF FLAT CONNECTING CABLE:
CONTROL TO DISPLAY**

- 0: No Display Board N/C
- 3: Display Board with 300 mm connecting cable \$39.00
- 9: Special Order

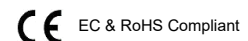
Note: Display board and 300mm cable may be ordered as separate components

Part Number:	Description	Price
3020B41-00300B-00	display board	\$35.00
10353-20301-00-00	300mm cable	\$4.00

Output 2: Configurable for PID cool (requires output #1 to be PID):
PID cool outputs: Relay, SSR or mA/VDC.



#209463



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<http://www.futuredesigncontrols.com>

BASE PRICING:

FDC-P91 \$245.00
FDC-P41 \$360.00

Number of Profiles: 9
 Number of Segments per Profile:
 Programs 1-4: up to 16 segments
 Programs 5-7: up to 32 segments
 Programs 8-9: up to 64 segments

Up to 5 Outputs
 PID control outputs; max 2
 Alarm or event outputs; max 3
 Retransmission PV/SP; max 2
 Serial Modbus RS485; max 1

Segment PID Selection, Event Outputs, Holdback, Jump/Cycle and more
 Event Input for remote profile functions
 Configurable Power Recovery options, Delayed Start and more.



Enter a number into each box which corresponds to the specifications you want when ordering either a P41 or P91.

FDC-P41 -
 FDC-P91 -

<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text" value="0"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
1	2	3	4	5	6	7	8	9

Schedule A

1. POWER INPUT

- 4: 90-250VAC, 47-63 HZ N/C
- 5: 11-26 VAC or VDC \$15.00
- 9: Special Order

2. SIGNAL INPUT*

- 1. Thermocouple: J,K,T,E,B,R,S,N,L,C,P N/C
 RTD: PT100 DIN & JIS
 Voltage: 0-60mV
- 5. Voltage: 0-10VDC, 0-5VDC, 1-5VDC \$15.00
- 6: mA: 0-20/4-20mA \$15.00

3. OUTPUT 1

- 0. None N/C
- 1. Relay 2A/240VAC (SPST) N/C
- 2. SSR Drive 5VDC @30mA N/C
- 3. 4-20/0-20mA linear, isolated, max load 500 ohm load \$28.00
- 4. 1-5/0-5/0-10VDC linear, isolated, min 10K ohm load \$28.00
- 6. Triac 1A/240VAC \$28.00
- C. SSR Drive 14VDC @40mA \$28.00

4. OUTPUT 2

- 0. None N/C
- 1. Relay 2A/240VAC (SPST) \$12.00
- 2. SSR Drive 5VDC @30mA \$12.00
- 3. 4-20/0-20mA linear, isolated, max load 500 ohm load \$28.00
- 4. 1-5/0-5/0-10VDC linear, isolated, min 10K ohm load \$28.00
- 6. Triac 1A/240VAC \$28.00
- 7. Transmitter power supply 20VDC @25mA, isolated \$28.00
- 8. Transmitter power supply 12VDC @40mA, isolated \$28.00
- A. Transmitter power supply 5VDC @80mA, isolated \$28.00
- C. SSR Drive 14VDC @40mA \$28.00

5. OUTPUT 3

- 0. None N/C
- 1. Relay 2A/240VAC (P41 SPDT/ P91 SPST) \$12.00
- 2. SSR Drive 5VDC @30mA \$12.00
- 6. Triac 1A/240VAC \$28.00
- 7. Transmitter power supply 20VDC @25mA, isolated \$28.00
- 8. Transmitter power supply 12VDC @40mA, isolated \$28.00
- A. Transmitter power supply 5VDC @80mA, isolated \$28.00
- C. SSR Drive 14VDC @40mA \$28.00

6. Output 4 (Options apply only to P41)

- 0. None (required for P91) N/C
- 1. Relay 2A/240VAC (SPST) \$12.00
- 2. SSR Drive 5VDC @30mA \$12.00
- 3. Retransmission 4-20/0-20mA, isolated, max load 500 ohm load \$90.00
- 4. Retransmission 1-5/0-5/0-10VDC, isolated, min 10K ohm load \$90.00
- 6. Triac 1A/240VAC \$28.00
- 7. Transmitter power supply 20VDC @25mA, isolated \$28.00
- 8. Transmitter power supply 12VDC @40mA, isolated \$28.00
- A. Transmitter power supply 5VDC @80mA, isolated \$28.00
- C. SSR Drive 14VDC @40mA \$28.00

7. Output 5

- 0. None N/C
- 3. Retransmission 4-20/0-20mA, isolated, max load 500 ohm load \$90.00
- 4. Retransmission 1-5/0-5/0-10VDC, isolated, min 10K ohm load \$90.00
- 7. Transmitter power supply 20VDC @25mA, isolated \$28.00
- 8. Transmitter power supply 12VDC @40mA, isolated \$28.00
- A. Transmitter power supply 5VDC @80mA, isolated \$28.00
- D. RS-485 Modbus RTU (isolated) \$75.00
- E. RS-232 Modbus RTU (isolated) \$75.00

8. OPTIONS

- 0. Panel Mount IP50 standard N/C
- 1. Panel Mount IP65 (Nema 4X) \$10.00
- 2. DIN Rail Mount with IP50 (P91 only) \$10.00
- 3. DIN Rail Mount with IP65 (P91 only, Nema 4X) \$20.00

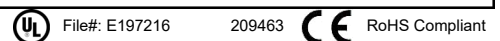
9. SPECIAL ORDER

Leave Blank unless assigned a specific 2-character Special Order Code

Note: The last digit (codes 9) is typically left blank

Output 2: When configured as control output PID cool only (requires output #1 to be PID)
 cool outputs: Relay, SSR or mA/VDC.

FDC-P91 DIN Rail Mount Adapter model DRA-16 refer to page 37



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Technical Support: 866.342.5332
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* An Event Input is standard; configurable for Profile Run, Profile Hold, Profile Abort, Profile Advance Segment, PID#2, Manual Mode, Failure Transfer Mode or Off (all control outputs off).

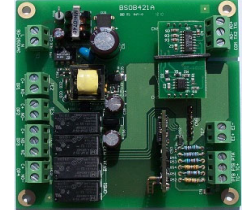
BASE PRICING:

FDC-B42 \$150.00

Number of Profiles: 9
 Number of Segments per Profile:
 Programs 1-4: up to 16 segments
 Programs 5-7: up to 32 segments
 Programs 8-9: up to 64 segments

Up to 5 Outputs
 PID control outputs; max 2
 Alarm or event outputs; max 3
 Retransmission PV/SP; max 2
 Serial Modbus RS485; max 1

Segment PID Selection, Event Outputs, Holdback, Jump/Cycle and more
 Event Input for remote profile functions
 Configurable Power Recovery options, Delayed Start and more.



Schedule C



1. POWER INPUT

- 4: 90-250VAC, 47-63 HZ N/C
- 5: 11-26 VAC or VDC \$13.00
- 9: Special Order

2. SIGNAL INPUT

- 1. Thermocouple: J,K,T,E,B,R,S,N,L,C,P N/C
 RTD: PT100 DIN & JIS
 Voltage: 0-60mV
- 5. Voltage: 0-10VDC, 0-5VDC, 1-5VDC N/C
- 6: mA: 0-20/4-20mA N/C
- 9. Special Order

3. OUTPUT 1

- 0. None N/C
- 1. Relay 2A/240VAC (SPST) N/C
- 2. SSR Drive 5VDC @30mA N/C
- 3. 4-20/0-20mA linear, isolated \$22.00
- 4. 1-5/0-5/0-10VDC linear, isolated, \$22.00
- 6. Triac 1A/240VAC \$22.00
- C. SSR Drive 14VDC @40mA \$22.00
- 9. Special Order

4. OUTPUT 2

- 0. None N/C
- 1. Relay 2A/240VAC (SPST) \$11.00
- 2. SSR Drive 5VDC @30mA \$11.00
- 3. 4-20/0-20mA linear, isolated, \$22.00
- 4. 1-5/0-5/0-10VDC linear, isolated, \$22.00
- 6. Triac 1A/240VAC \$22.00
- 7. Transmitter power supply 20VDC /25mA, isolated \$22.00
- 8. Transmitter power supply 12VDC/40mA, isolated \$22.00
- A. Transmitter power supply 5VDC /80mA, isolated \$22.00
- C. SSR Drive 14VDC @40mA \$22.00
- 9. Special Order

5. OUTPUT 3

- 0. None
- 1. Relay 2A/240VAC (P41 SPDT/ P91 SPST) \$11.00
- 2. SSR Drive 5VDC @30mA \$11.00
- 6. Triac 1A/240VAC \$22.00
- 7. Transmitter power supply 20VDC @25mA, isolated \$22.00
- 8. Transmitter power supply 12VDC @40mA, isolated \$22.00
- A. Transmitter power supply 5VDC @80mA, isolated \$22.00
- C. SSR Drive 14VDC @40mA \$22.00
- 9. Special Order

6. OUTPUT 4

- 0. None N/C
- 1. Relay 2A/240VAC (SPST) \$11.00
- 2. SSR Drive 5VDC @30mA \$11.00
- 3. Retransmission 4-20/0-20mA, isolated, \$60.00
- 4. Retransmission 1-5/0-5/0-10VDC, isolated \$60.00
- 6. Triac 1A/240VAC \$22.00
- 7. Transmitter power supply 20VDC /25mA, isolated \$22.00
- 8. Transmitter power supply 12VDC /40mA, isolated \$22.00
- A. Transmitter power supply 5VDC /80mA, isolated \$22.00
- C. SSR Drive 14VDC @40mA \$22.00
- 9. Special Order

7. OUTPUT 5

- 0. None N/C
- 3. Retransmission 4-20/0-20mA, isolated \$60.00
- 4. Retransmission 1-5/0-5/0-10VDC, isolated \$60.00
- 7. Transmitter power supply 20VDC /25mA, isolated \$22.00
- 8. Transmitter power supply 12VDC /40mA, isolated \$22.00
- A. Transmitter power supply 5VDC /80mA, isolated \$22.00
- D. RS-485 Modbus RTU (isolated) N/C
- E. RS-232 Modbus RTU (isolated) \$75.00

8. Display Board and Cable

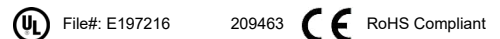
- 0. None N/C
- 3. Display Board with 300mm connection cable \$100.00
- 4. Display Board with 1000mm connection cable \$100.00

9. Modbus Addressing: (if blank factory default is Modbus Address #1)

- CA: Modbus Comm Address #1
- CB: Modbus Comm Address #2
- CC: Modbus Comm Address #3

*Note that field configuration of Comm address requires the optional Display

**Display Board and Cable may be ordered separately:
 PN: 3020B42-00300A-00 with 3020B42-00400A-00 \$100.00



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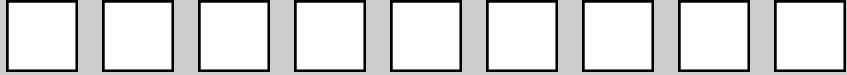
BASE PRICING:

FDC - 9090 \$200.00

FDC-9090



(1/16 DIN) **FDC - 9090**



Schedule A

1. POWER INPUT

- 4: 90-264VAC N/C
- 5: 20-32VAC/VDC \$15.00
- 9: Special Order

2. SIGNAL INPUT

- 5: Configurable* N/C
- 9: Special Order

*Hardware configuration for T/C input is standard
 Minor hardware change (solder bridge removal) is required to utilize RTD sensors.
 See Order Code 9 to specify hardware configuration for RTD input.

3. RANGE CODE

- 1: Configurable N/C
- 9: Other

4. CONTROL MODE

- 3: PID/On-Off N/C

5. OUTPUT 1 OPTION

- 0: None N/C
- 1: Relay form C (SPDT) 3A/240VAC resistive N/C
- 2: SSR Drive 24VDC @20mA N/C
- 3: 4-20mA linear, max load 500 ohms \$28.00
- 4: 0-20mA linear, max load 500 ohms \$28.00
- 5: 0-10VDC linear, min impedance 500K ohms \$28.00
- 9: Other

6. OUTPUT 2 OPTION

- 0: None N/C

7. ALARM OUTPUT

- 0: NONE N/C
- 1: Relay 2A/240VAC resistive \$17.00
- 9: Special Order

8. COMMUNICATIONS

- 0: None N/C

9. SPECIAL ORDER *

- Blank: Standard Factory Default T/C (type J) / °F
- TC: T/C input (type J) / °C
- RF: RTD input / °F
- RK: RTD input / °C
- BF: Blank Face gold outlined T/C input (type J) / °F
- BC: Blank Face gold outlined T/C input (type J) / °C
- RB: Blank Face gold outlined RTD input / °F
- RC: Blank Face gold outlined RTD input / °C

***Special Order Notes:**

The last digit (code 9) is typically left blank (Factory Default)
 -Factory default hardware is for T/C input
 -Hardware defines input type: T/C and RTD input
 -Factory default is for T/C input (type J)
 -Input type may be changed between T/C and RTD by opening or closing a solder bridge (consult factory)

Factory default software configuration remains as Type J T/C °F and must be changed to the appropriate RTD input and/or °C as appropriate

DIN Rail Mount Adapter model DRA-16 refer to page 37



209463




RoHS Compliant

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BASE PRICING:

FDC - L91	\$198.00
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FDC - L91

Schedule A	1	2	3	4	5
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1. POWER INPUT

- 4: 90-264 VAC 50/60 HZ N/C
- 5: 11-26VAC/VDC \$15.00
- 9: Special Order

2. SIGNAL INPUT

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

3. OUTPUT 1

- 1: Form C Relay (SPDT) -
2 Amps @ 240VDC resistive (N.O.) N/C
- 2: SSR drive 5VDC @30 mA N/C
- 6: Triac - 1 Amp @ 240VAC \$28.00
- C: SSR 14VDC @40mA \$28.00
- 9: Special Order

4. OPTIONS

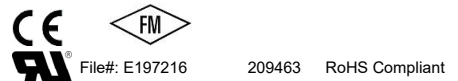
- 0: None N/C
- 1: Form A Relay - 2A@240 VAC resistive (N.O.) \$12.00
- 2: SSR Drive 5 VDC @30 mA \$12.00
- 6: Triac - 1 Amp @ 240VAC \$28.00
- 7: Transmitter Power Supply 20VDC/25mA (isolated) \$28.00
- 8: Transmitter Power Supply 12VDC/40mA (isolated) \$28.00
- 9: Transmitter Power Supply 5VDC/80mA (isolated) \$28.00
- A: RS - 485 (Modbus RTU) \$75.00
- B: Remote Reset \$15.00
- C: SSR Drive 14VDC @40mA \$28.00
- D: Retransmission: 0-20/4-20mA , isolated,
500 ohm load min \$90.00
- E: Retransmission: 0-5/1-5VDC, isolated,
10k ohm load min \$90.00
- F: Retransmission: 0-10VDC, isolated,
10k ohm load min \$90.00
- H: Special Order

FDC-L91 DIN Rail Mount Adapter model DRA-16 refer to page 37

5. SPECIAL ORDER

Leave Blank unless assigned a specific 2-character Special Order Code


Note: The last digit (codes 5) is typically left blank



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BASE PRICING:

FDC - L41	\$330.00
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FDC - L41

	□	□	□	□	□	□	□
Schedule A	1	2	3	4	5	6	7

1. POWER INPUT

- 4: 90-250 VAC 50/60 HZ N/C
- 5: 11-26VAC/VDC \$15.00
- 9: Special Order

2. SIGNAL INPUT - see note at bottom right on FM Approval & VDC/mA inputs

- 1: Universal Input T/C, RTD, mV (0-60mV) N/C
- 2: Voltage DC: 0-1* N/C*
- 3: Voltage DC: 0-10* N/C*
- 4: mA: 4-20, 0-20* N/C*
- 5: Voltage DC: 1-5, 0-5* N/C*
- 9: Special Order*

3. OUTPUT 1

- 1: Form C Relay (SPDT) - 2 Amps @ 240VAC resistive N/C
- 2: SSR drive 5 VDC @30 mA N/C
- 6: Triac - 1 Amp @ 240VAC solid state relay \$28.00
- C: SSR drive 14 VDC @40 mA \$28.00
- 9: Special Order

4. OUTPUT 2

- 0: None N/C
- 1: Form C Relay - 2A@240 VAC resistive (SPDT) \$12.00
- 2: SSR Drive 5 VDC @30 mA \$12.00
- 6: Triac - 1 Amp @ 240VAC solid state relay \$28.00
- 7: Transmitter Power Supply 20VDC/25mA (isolated) \$28.00
- 8: Transmitter Power Supply 12VDC/40mA (isolated) \$28.00
- 9: Transmitter Power Supply 5VDC/80mA (isolated) \$28.00
- C: SSR Drive 14VDC @40mA \$28.00
- H: Special Order

5. COMMUNICATIONS

- 0: None N/C
- 1: RS-485 Modbus RTU \$75.00
- 2: RS-232 Modbus RTU \$75.00
- 3: Retransmission: 0-20/4-20mA, isolated, 500 ohm load min \$90.00
- 4: Retransmission: 0-5/1-5VDC, isolated, 10k ohm load min \$90.00
- 5: Retransmission: 0-10VDC, isolated, 10k ohm load min \$90.00
- 9: Special Order

6. Protective Class

- 0: IP50 Standard N/C
- 1: IP65 (Nema 4X) \$10.00

7. SPECIAL ORDER

Leave Blank unless assigned a specific 2-character Special Order Code

Note: The last digit (codes 7) is typically left blank



File#: E197216



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SERIES 7L

FM HIGH LIMIT

BASE PRICING:

FDC-7L \$149.00

DIN Rail or Surface Mount



Schedule A

FDC - 7L-



1. INPUT RANGE

Order Code	Description	Power	Input Type	Temperature Range	Relay		Price
Z259	Limit Control	115VAC	"J" T/C	0 TO 1400°F / 0 to 800°C	5A Relay	FM approved	\$149.00
Z260	Limit Control	115VAC	"K" T/C	0 TO 2300°F / 0 to 1200°C	5A Relay	FM approved	\$149.00
Z261	Limit Control	115VAC	"J" T/C	0 TO 600°F / 0 to 300°C	5A Relay	FM approved	\$149.00
Z275	Limit Control	24VDC	"J" T/C	0 TO 600°F / 0 to 300°C	5A Relay	FM approved	\$149.00
Z289	Limit Control	115VAC	"T" T/C	-100 TO 500°F / -70 to 260°C	5A Relay	FM approved	\$149.00
Z338	Limit Control	115VAC	"RTD"	32 to 210°F / 0 to 100°C	5A Relay	FM Approved	\$149.00
Z396	Limit Control	24VDC	"T" T/C	-100 TO 500°F / -70 to 260°C	5A Relay	FM Approved	\$149.00
Z408	Limit Control	24VDC	"K" T/C	0 TO 2300°F / 0 to 1200°C	5A Relay	FM Approved	\$149.00
Z409	Limit Control	240VAC	"K" T/C	0 TO 2300°F / 0 to 1200°C	5A Relay	FM approved	\$149.00

Consult Factory for additional power, voltage inputs & temperature ranges.

Product Notes:

- Limit Control Output [5A SPDT Relay]:
- Setpoint Accuracy typically +/- 3.0% of scale
 - Hysteresis is 0.5% of range
 - Latching output is standard
 - Remote Reset is standard

New Temperature Ranges have a NRE charge of \$150.00 net.
 Minimum order for unit with a new Order Code is 25 units. A new Order Code is required for:

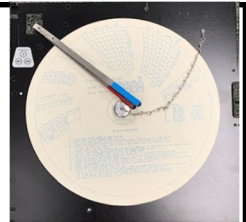
- New temperature range
- Existing range with a different input type
- Input Power change for existing range & input type.

Refer to sales brochure & manual for specifications

BASE PRICING:

DR5000 \$750.00

CIRCLE CHART PLATEN ASSEMBLY ONLY



FDC - DR5000

1	 	0	0	1	0	0
1	2	3	4	5	6	7

Schedule B

1. POWER INPUT

1: 110/220VAC 50/60 HZ Selectable N/C

2. RECORDING STYLE

1: 1 Pen Ink N/C
 2: 2 Pen Ink (see note) \$200.00

3. OUTPUTS

0: Fixed Character* N/C

4. DISPLAY OPTIONS

0: Fixed Character* N/C

5. CHART OPTIONS

1: 10" Counterclockwise Rotation (standard) N/C

6. ENCLOSURE OPTIONS

0: Fixed Character* N/C

7. SPECIAL OPTIONS

0: NONE N/C

Ink Style Recorder Charts

Standard Charts:
 Contact Customer Service for available chart ranges & rotations: [DR Available Chart Listing.pdf](#)

Notes:

-Inputs #1 & 2 for both the ink recorder models share a common ground; isolated sensors are required (t/c inputs use ungrounded junctions)

* -Selection Box 2 Recorder Style previously offered Thermal Recorder, obsoleted December 2018

-Selection Box 3 Fixed Character previously was Alarm Outputs were obsoleted September 2020

-Selection Box 4 Fixed Character previously was Display Option was obsoleted September 2020

-Selection Box 6 Fixed Character previously was Enclosure Option was obsoleted March 2022

Pricing: Charts and replacement ink cartridges-Schedule D

Red pens #R25-2 (package of 6 pens)	\$45.00	
Blue pens #R25-3 (package of 6 pens)	\$60.00	
Thermal Chart Paper (#00218001)	\$75.00	50 per box
Ink Type Chart Paper	\$38.00	100 per box
Ink Type Setup Chart (#R18-270 CCW)	\$38.00	3 per box
Ink Type Setup Chart (#R18-272 CW)	\$38.00	3 per box

NOTE: Red pens are for Pen #1 only; Blue pens for Pen #2.

Replacement Keypad (schedule D)

R24-12 \$90.00

R24-12 Old (old style keypad) \$90.00

4-6-20 updated keypad price
 9-25-20 updated matrix
 3-2022 updated matrix - platen only
 9-2022 updated chart price

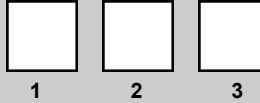
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BASE PRICING:

FDC - CR06 \$1,700.00



FDC - CR06



Schedule C

1. COMMUNICATION

- 0: Standard RS-232C N/C
- 1: RS-485 (includes 6-relay output option) \$700.00

2. DI/DO (digital input/output)

- 0: None N/C
- 1: 6 Relay output \$425.00
- 2: 3 DI \$360.00
- 3: 3DI + 6 relay output \$750.00

3. OUT-OF-PAPER SENSOR

- 0: None N/C
- 1: Yes \$650.00

Note:
 Out-of-Paper Sensor includes 6 Digital Output relay option.
 Relay #1 will close when recorder nears out-of-paper.
 Relay #1 may be configured for two functions, out-of-paper and other alarm option.

ACCESSORIES– Schedule D

- Chart paper: P/N HZCGA0105EL001 \$117.00
 (16M Z-Fold paper 10-pack)
- Ribbon cassette: P/N WPSR188A000001A \$70.00
 (6 color: Purple, Red, Green, Blue, Brown, Black)
- RS 485 Module: P/N 910063655A02 \$600.00
- 6 Relay Output Card: P/N 910063655A01 \$425.00
- CR06 Manual: Instruction Manual \$25.00

The following options cannot be field installed:
 Digital Input Board (3DI)
 Out-of-Paper Sensor

SPARE PARTS– Schedule D

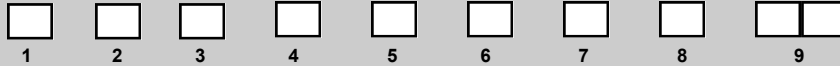
- Case: P/N HMSU3697A \$160.00
- IP65 Ring P/N H4H14900 \$30.00
- Mounting Bracket Set P/N H4H14175 \$70.00
- Cover Door w/Card P/N H2H14730 \$50.00
- Display Board: P/N HMSU3651A \$160.00
- Display Back Cover: P/N H3H14732 \$30.00
- FPC Cable for Display P/N H3H14851 \$70.00
- Cover Door & Display P/N HMSU3701A \$185.00
 (Cover & Display assembly)

BASE PRICING:

FDC - PR3006 (6 analog inputs) \$3,900.00	FDC - PR3030 (30 analog inputs) \$6,700.00
FDC - PR3012 (12 analog inputs) \$4,600.00	FDC - PR3036 (36 analog inputs) \$7,400.00
FDC - PR3018 (18 analog inputs) \$5,300.00	FDC - PR3042 (42 analog inputs) \$8,100.00
FDC - PR3024 (24 analog inputs) \$6,000.00	FDC - PR3048 (48 analog inputs) \$8,800.00



FDC - PR3006	FDC - PR3030								
FDC - PR3012	FDC - PR3036								
FDC - PR3018	FDC - PR3042	-							
FDC - PR3024	FDC - PR3048								



1. RELAY OUTPUTS

0: None	N/C
1: 6 Relays	\$220.00
2: 12 Relays	\$440.00
3: 18 Relays	\$660.00
4: 24 Relays	\$880.00

2. DIGITAL INPUT

0: None	N/C
1: 6 channel	\$220.00
2: 12 channel	\$440.00
3: 18 channel	\$660.00

3. ANALOG OUTPUT

0: None	N/C
1: 6 Channels	\$440.00
2: 12 Channels	\$880.00

4. POWER

A: 90-250 VAC, 50/60Hz	N/C
D: 11-36VDC	\$175.00

5. COMMUNICATION

0: Ethernet interface (standard)	N/C
1: Ethernet interface plus RS-232	\$140.00
2: Ethernet interface plus RS-422/485	\$140.00

6. FIRMWARE

0: Standard includes Mathematics, Counter & Totalizer	N/C
1: Plus version 1: including external Channels, batch data log & FDA 21 CFR part 11	\$220.00
2: Plus version 2: custom display capability via Panel Studio editing software	\$135.00
3: Plus version 3: combine Plus version 1 & 2	\$355.00

7. PC SOFTWARE

1: Observer Basic Software; Historical Viewer & Configuration	N/C
2: PR-Data Acquisition Studio Software; Data Acquisition Studio Software, (Real Time Viewer + Data Acquisition + Observer Software)	\$220.00

8. CASE/MOUNTING/POWER CORD/SWITCH

0: Panel mount - no power cord, no switch	N/C
1: Panel mount - no power cord, power switch	N/C
2: Portable - UL & CSA power cord, power switch	\$165.00
3: Portable - VDE power cord, power switch	\$165.00
4: Portable - SAA power cord, power switch	\$165.00
5: Portable - BS power cord, power switch	\$165.00

9. SPECIAL OPTION

00: None	N/C
S1: 16GB SD Card	\$30.00
S2: 32 GB SD Card	\$40.00

PR30 Panel Mount Adapters (Replace Legacy Panel Mounted Chart Recorders):
PR30-MTG-ABB-HW-MRC \$TBD
 - ABB, Honeywell, Partlow MRC5000 Recorders
PR30-MTG-MRC7 \$TBD
 - Partlow MRC7000 Recorders

PR Series IO Expansion Slots:
 PR Series expansion slots will accept input or output card combinations based upon the model part number matrix. Below is description of each module type that may be inserted into a PR expansion slot.

- AI = 3 or 6 Analog Input
- DI = 8-Digital Input*
- RO = 9-Relay Output*
- AO = 6-Analog Output (PV Retransmission)
- PC201 PID Control Board

* A combination DI/DO module is available with 3-DI & 3-DO each but for this document is not specified as an RO type.

PR30 has 16-slots.

- AI modules may be inserted into slots 1-8 supporting up to 48 AI-channels (6AI/module).
- DI/RO/AO modules may be inserted after AI cards in any open slots ranging from 2-16.
- PC201 PID Modules: PR30 supports up to 8 PC201 modules inserted into Any open slot.
 PC201 is ordered separately, refer to page 30 [PC201 PID Part-Price page.pdf](#)

PR30 Maximum Power 39 Watt and Options Power Requirements

Below are the power consumption (Watts) for various options with the total part number not to exceed 39 watts.

Option:	Watts
Base Unit:	15
USB (2 avail):	5W / port (when used)
Analog Input::	1.2W / card
Relay Output:	2.6W / card
Digital Input:	0.6W / card
Analog output:	0.6W / card
PC201:	2.2 W / card

Excel Worksheet to Calculate Watts by Part #:
[PR30 power consumption calculator_06-2020.zip](#)
[PR30 power consumption calculator_06-2020.xlsx](#)

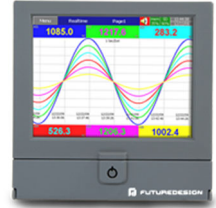


RoHS Compliant

Updated base price 4-20-22

BASE PRICING:

FDC - PR2003 (3 analog inputs)	\$1,750.00
FDC - PR2006 (6 analog inputs)	\$2,1000.00
FDC - PR2012 (12 analog inputs)	\$2,900.00
FDC - PR2018 (18 analog inputs)	\$3,600.00
FDC - PR2024 (24 analog inputs)	\$4,300.00



FDC - PR2003							
FDC - PR2006							
FDC - PR2012							
FDC - PR2018							
FDC - PR2024	Schedule C	1	2	3	4	5	6

1. Other Inputs and Outputs

PR2003 (3 analog inputs):

0: None	N/C
6: 3 relay outputs + 3 digital inputs	\$220.00
C: 3 relay outputs + 3 digital inputs + 6 analog outputs	\$660.00

PR2006 (6 analog inputs):

0: None	N/C
1: 6 relay outputs	\$220.00
3: 6 digital inputs	\$220.00
5: 6 analog outputs	\$440.00
6: 3 relay outputs + 3 digital inputs	\$220.00
7: 6 relay outputs + 6 digital inputs	\$440.00
A: 6 relay outputs + 6 analog outputs	\$660.00
B: 6 digital inputs + 6 analog outputs	\$660.00
D: 6 relay outputs + 6 digital inputs + 6 analog outputs	\$880.00

PR2012 (12 analog inputs):

0: None	N/C
1: 6 relay outputs	\$220.00
2: 12 relay outputs	\$440.00
3: 6 digital inputs	\$220.00
4: 12 digital inputs	\$440.00
5: 6 analog outputs	\$440.00
6: 3 relay outputs + 3 digital inputs	\$220.00
7: 6 relay outputs + 6 digital inputs	\$440.00
8: 9 relay outputs + 3 digital inputs	\$440.00
9: 3 relay outputs + 9 digital inputs	\$440.00
A: 6 relay outputs + 6 analog outputs	\$660.00
B: 6 digital inputs + 6 analog outputs	\$660.00
C: 3 relay outputs + 3 digital inputs + 6 analog output	\$660.00

PR2018 (18 analog inputs):

0: None	N/C
1: 6 relay outputs	\$220.00
3: 6 digital inputs	\$220.00
5: 6 analog outputs	\$440.00
6: 3 relay outputs + 3 digital inputs	\$220.00

PR2024 (24 analog inputs):

0: None	N/C
---------	-----

4. Firmware

0: Standard includes Mathematics, Counter & Totalizer	N/C
1: Plus version 1: including external Channels, batch data log & FDA 21 CFR part 11	\$220.00
2: Plus version 2: custom display capability via Panel Studio editing software	\$135.00
3: Plus version 3: combine Plus version 1 & 2	\$355.00

5. PC SOFTWARE

1: Observer Basic Software; Historical Viewer & Configuration	N/C
2: PR-Data Acquisition Studio Software; Data Acquisition Studio Software, (Real Time Viewer + Data Acquisition + Observer Software)	\$220.00

6. CASE/MOUNTING/POWER CORD/SWITCH

0: Panel mount - no power cord, no switch	N/C
1: Panel mount - no power cord, power switch	N/C
2: Portable - UL & CSA power cord, power switch	\$165.00
3: Portable - VDE power cord, power switch	\$165.00
4: Portable - SAA power cord, power switch	\$165.00
5: Portable - BS power cord, power switch	\$165.00

7. SPECIAL OPTION

00: None	N/C
S1: 16GB SD Card	\$30.00
S2: 32 GB SD Card	\$40.00
10: Process Control Card	\$
11: Process Control Card + 16GB SD card	\$
12: Process Control Card + 32GB SD card	\$

Process control card ordering code needs to be chosen after Special options 10, 11, 12 been selected. See page 30 for Process Control Card pricing
[PC201 PID Part-Price page.pdf](#)
 When Process control card is specified PR20 is not UL, cUL

2. Power

A. 90-250 VAC, 50/60 Hz	N/C
D. 11-36 VDC	\$75.00

3. Communication

0: Standard Ethernet	N/C
1: Ethernet + RS-232	\$140.00
2: Ethernet + RS-422/485	\$140.00

PR Series IO Expansion Slots:
 PR Series expansion slots will accept input or output card combinations based upon the model part number matrix. Below is description of each module type that may be inserted into a PR expansion slot.
 -AI = 3 or 6 Analog Input
 -DI = 8-Digital Input*
 -RO = 9-Relay Output*
 -AO = 6-Analog Output (PV Retransmission)
 * A combination DI/RO module is available with 3-DI & 3-RO each but for this document is not specified as an RO type.
PR20 has 4 slots:
 Depending upon the number of AI specified in the matrix
 - Slots 1, 2, 3, & 4 may be used in sequential order for combinations of 3, 6, 12, 18 & 24 AI with the latter consuming all 4-slots.
 - Any remaining open slots may be used for DI, RO, AO or PC201 PID modules.

BASE PRICING:

FDC - PR1003	\$1,300.00
FDC - PR1006	\$1,650.00



FDC - PR1003 or PR1006
Schedule C



1. Other Inputs and Outputs

PR1003 (3 analog inputs):

0: None	N/C
6: 3 relay outputs + 3 digital inputs	\$220.00

PR1006 (6 analog inputs):

0: None	N/C
1: 6 relay outputs	\$220.00
3: 6 digital inputs	\$220.00
6: 3 relay outputs + 3 digital inputs	\$220.00
7: 6 relay outputs + 6 digital inputs	\$440.00

2. Power

A. 90-250 VAC, 50/60 Hz	N/C
D. 11-36 VDC	\$75.00

3. COMMUNICATION

0: Standard Ethernet	N/C
1: Ethernet + RS-232	\$140.00
2: Ethernet + RS-422/485	\$140.00

4. FIRMWARE

0: Standard included Mathematics, Counter & Totalizer	N/C
1: Plus version 1: including external Channels, batch data log & FDA 21 CFR part 11	\$220.00
2: Plus version 2: custom display capability via Panel Studio editing software	\$135.00
3: Plus version 3: combine Plus version 1 & 2	\$355.00

5. PC Software

1: Observer Basic Software; Historical Viewer & Configuration	N/C
2: PR-Data Acquisition Studio Software; Data Acquisition Studio Software, (Real Time Viewer + Data Acquisition + Observer Software)	\$220.00

6. CASE/MOUNTING/POWER CORD/SWITCH

0: Panel mount - no power cord, no switch	N/C
1: Panel mount - no power cord, power switch	N/C
2: Portable - UL & CSA power cord, power switch	\$165.00
3: Portable - VDE power cord, power switch	\$165.00
4: Portable - SAA power cord, power switch	\$165.00
5: Portable - BS power cord, power switch	\$165.00

7. SPECIAL OPTION

00: None	N/C
S1: 16GB SD Card	\$30.00
S2: 32 GB SD Card	\$40.00
10: Process control card	\$
11: Process control card + 16GB SD card	\$
12: Process control card + 32GB SD card	\$

Process control card ordering code needs to be chosen after Special options 10, 11, 12 been selected. See page 30 for Process Control Card pricing. [PC201 PID Part-Price page.pdf](#)

When Process control card is specified PR20 is not UL, cUL

PR Series IO Expansion Slots

PR Series expansion slots will accept input or output card combinations based upon the model part number matrix. Below is description of each module type that may be inserted into a PR expansion slot.

- AI = 3 or 6 Analog Input
- DI = 8-Digital Input*
- RO = 9-Relay Output*
- AO = 6-Analog Output (PV Retransmission)

* A combination DI/RO module is available with 3-DI & 3-RO each but for this document is not specified as an IO type.

PR10 has 4 slots:

- Slot 1 accepts 3 or 6 channel AI or a PC201 PID module
- Slots 2 & 3 used for DI/RO modules and/or PC210 module
- Slot 4 is limited to PC201 PID module



Updated base price 4-20-22

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BASE PRICING:

FDC - PC201 \$250.00



FDC - PC201



Schedule A

1. Output 1

0:	None	N/C
1:	Relay 2A/240VAC	N/C
2:	Pulsed voltage to drive SSR, 5V/30mA	N/C
3:	Isolated 4-20mA/0-20mA (OM95-3)	\$28.00
4:	Isolated 1-5V/0-5V (OM95-4)	\$28.00
5:	Isolated 0-10V (OM95-5)	\$28.00
6:	Triac output 1A/240VAC,SSR	\$28.00
C:	Pulse voltage to drive SSR, 14V/40ma (OM94-7)	\$28.00

2. Output 2

0:	None	N/C
1:	Relay 2A/240VAC	\$12.00
2:	Pulsed voltage to drive SSR, 5V/30mA	\$12.00
3:	Isolated 4-20mA/0-20mA (OM95-3)	\$28.00
4:	Isolated 1-5V/0-5V (OM95-4)	\$28.00
5:	Isolated 0-10V (OM95-5)	\$28.00
6:	Triac output 1A/240VAC,SSR	\$28.00
7:	Isolated 20VDC/25mA power supply (DC94-1)	\$28.00
8:	Isolated 12VDC/40mA power supply (DC94-2)	\$28.00
9:	Isolated 5VDC/80mA power supply (DC94-3)	\$28.00
C:	Pulse voltage to SSR, 14V/40mA (OM94-7)	\$28.00

3. Alarm 1

0:	None	N/C
1:	Relay Form C 2A/240VAC	\$12.00

4. Alarm 2

0:	None	N/C
1:	Relay Form A 2A/240VAC	\$12.00

Analog Inputs:.

- Analog Input #1 (primary): Universal Analog Input: T/C, RTD, linear mA, VDC, mV.
- Analog Input #2: Linear mA, VDC, mV configurable for multiple functions including remote setpoint..
- 9-point custom linearization.

PID Control: one universal input with up to 4 control outputs.

- Outputs #1 PID, Output / #2 PID Cool , Alarm , Profile Event, or Trx Power Supply / Outputs #3 & #4 x Alarm or Profile event outputs.
- Event Input: configurable for multiple mutually exclusive functions.
- 2-PID sets with 2nd enabled by a digital input (event input).
- Soft Start: configured PID % out for outputs 1 and 2 if 2 is PID cool configurable to terminate on time or the PV crossing a configured threshold.

PR Series Recorder Order Limitations

- FDC-PC201 are ordered separately and installed in the PR Recorders.
- PR10/20/30 recorder models must be ordered with sufficient number of Slots as "none" to accommodate the required number of PC201 cards.

Number of PC201 modules per PR Model:

- PR10: up to 4 PC201 modules
- PR20*: up to 4 PC201 modules
- PR30: up to 8 PC201 Modules

*PR20: PC201 cannot be used together with PR20 order code under Selection 1 "Inputs & Outputs":

- 5: 6AO,
- A: 6 relays + 6AO
- B: 6DI +6AO
- C: 3 relays + 3DI + 6AO
- D: 6 relays + 6DI + 6AO
- Nor with 24 analog inputs

PR30 Power Consumption Limit of 39Watts

Refer to the PR30 price page to determine the power consumption as specified including the number of PC201 modules to be installed.

PR 30 Order Matrix:
[PR30 Matrix-Price.pdf](#)

Excel Worksheet to Calculate Watts by Part #:
[PR30 power consumption calculator_06-2020.zip](#)
[PR30 power consumption calculator_06-2020.xlsx](#)

PC201 Module Agency Approval

CE:	Yes
RoHS:	Yes
EU-REACH:	Yes
UL/cUL:	No

Ramp-Soak Profile offers:

- up to 50 profiles, up to 32 steps/profile w/1,000 total steps.
- Event Input configurable for multiple profile functions.
- Configurable Holdback per step (guaranteed soak function).
- Soft Start on Power Up if Profile configured to start from SP1 if a profile had been running during power cycle.

Steady State Control (when not profiling) offers:

- Soft Start: as described under PID control.
- Ramp Rate to SP in degrees/minute or hour.
- " Soak" timer alarm can also be configured with or without SP Ramp Rate..
- 2nd pre-configured Setpoint enabled by a digital input (event input).
- Analog Input #2 configurable as Remote Setpoint input. Utilizing the event input may switch between local and remote setpoint. (2nd analog input has other configurable functions, refer to the PC201 manual)..

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PR Series ACCESSORIES/REPLACEMENT PARTS

Schedule D

UNIVERSAL ANALOG INPUT MODULES

AI203: Analog Input Card - 3 input	\$485.00
AI206: Analog Input Card - 6 inputs	\$700.00

ANALOG RETRANSMISSION OUTPUT MODULES

AO206: Analog Output: 6 channel	\$440.00
---------------------------------	----------

DIGITAL INPUT & OUTPUT CARDS

DI 206: Digital Input Card: 6 inputs	\$220.00
RO206: Digital Output Card: 6 relays	\$220.00
RD233: 3 relay output and 3 digital inputs	\$220.00

POWER MODULES for PR10 and PR20

(Panel mount enclosure unless noted)

PM201: 90-250VAC Power Input Module - without power switch	\$75.00
PM202: 90-250VAC Power Input Module - with power switch	\$75.00
PM203: 90-250VAC Portable Power Input Module - with power switch	\$150.00
PM211: 11-36VDC Power Input Module -without power switch	\$150.00
PM212: 11-36VDC Power Input Module -with power switch	\$150.00
PM213: 11-36VDC Portable Power Input Module -with power switch	\$150.00

Power Modules for PR30

(Panel mount enclosure unless noted)

PM301: 90-250 VAC Power Input Module -without power switch	\$100.00
PM302: 90-250VAC Power Input Module -with power switch	\$100.00
PM303: 90-250VAC Portable Power Input Module -with power switch	\$100.00
PM311: 11-36VDC Power Input Module -without power switch	\$300.00
PM312: 11-36VDC Power Input Module -with power switch	\$300.00
PM313: 11-36VDC Portable Power Input Module -with power switch	\$300.00

COMMUNICATIONS

IF232: RS232 Communication Module	\$140.00
IF485: RS485 Communication Module	\$140.00

Software

Observer Basic Software; Historical Viewer & Configuration	N/C
PR-Data Acquisition Studio Software; Data Acquisition Studio Software, (Real Time Viewer + Data Acquisition + Observer Software)	\$220.00

PR Series IO Expansion Slots:

PR Series expansion slots will accept input or output card combinations based upon the model part number matrix. Below is description of each module type that may be inserted into a PR expansion slot.

- AI = 3 or 6 Analog Input
- DI = 8-Digital Input*
- RO = 9-Relay Output*
- AO = 6-Analog Output (PV Retransmission)

* A combination DI/RO module is available with 3-DI & 3-RO each but for this document is not specified as an IO type.

PR Series Module Slot Usage per Model

PR10 has 4 slots:

- The first 3 slots are active; slot 4 is not used.
- Slot 1 accepts 3 or 6 channel AI
- Slots 2 & 3 used for DI/RO modules.

PR20 has 4 slots:

- Depending upon the number of AI specified in the matrix
- Slots 1, 2, 3, & 4 may be used in sequential order for combinations of 3, 6, 12, 18 & 24 AI with the latter consuming all 4-slots.
- Any remaining open slots may be used for DI, RO & AO modules.

PR30 has 16-slots.

- AI modules may be inserted into slots 1-8 supporting up to 48 AI-channels (6AI/module).
- DI/RO/AO modules may be inserted after AI cards in any open slots ranging from 2-16.

PC Software

-Observer software is standard with each recorder. PR-Data Acquisition Studio Software is optional.

SD Cards - (may be ordered separately)

Part Number	Description	Price
16GB-SD	16GB SD Card	\$30.00
32GB-SD	32GB SD Card	\$40.00

Updated AI Modules 4-20-22

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BASE PRICING:

FDC - VR06	\$1,200.00
FDC - VR18	\$1,450.00



FDC - VR06 or VR18

Schedule C

1	2	3	4	5	6	7	8	9	10
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1. POWER

4:	90-250 VAC, 47-63 Hz	N/C
5:	20-28 VAC, 47-63 Hz	\$25.00
6:	11-18 VDC	\$25.00
7:	18-36 VDC	\$25.00
9:	Special Order	

2. UNIVERSAL ANALOG INPUT CARD

(t/c, RTD, mA, mV & VDC)

0:	None	N/C
3:	3 channel (VR06 & VR18)	\$300.00
6:	6 channel (VR06 & VR18)	\$600.00
A:	9 channel (VR18 only)	\$900.00
B:	12 channel (VR18 only)	\$1,200.00
C:	15 channel (VR18 only)	\$1,500.00
D:	18 channel (VR18 only)	\$1,800.00

Special Range Analog Input Cards:

Input Cards with Negative/Positive VDC & mA spans:
 Configurable: -60 to 60mV, -2 to 2VDC, -20 to 20VDC
 and -20 to 20mA. (refer to manual for order codes)

Consult Factory and/or users manual for substituting one or more Universal Input cards with Special Range cards. Pricing is the same for Universal & Special Range input cards.

3. DIGITAL INPUT CARD

(5 VDC logic Input)

0:	None	N/C
1:	6 digital inputs (VR06 & VR18)	\$225.00
2:	12 digital inputs (VR18 only)	\$450.00
3:	18 digital inputs (VR18 only)	\$675.00
4:	24 digital inputs (VR18 only)	\$900.00
5:	30 digital inputs (VR18 only)	\$1,125.00
6:	36 digital inputs (VR18 only)	\$1,350.00

4. DIGITAL OUTPUT CARD

(form A, 5 amp 240VAC resistive)

0:	None	N/C
1:	6 relay outputs (VR06 & VR18)	\$225.00
2:	12 relay outputs (VR18 only)	\$450.00
3:	18 relay outputs (VR18 only)	\$675.00
4:	24 relay outputs (VR18 only)	\$900.00
5:	30 relay outputs (VR18 only)	\$1,125.00

5. COMMUNICATION

0:	Ethernet interface (standard)	N/C
1:	RS-232/422/485 plus Ethernet interface	\$140.00
9:	Special Order	

6. PC SOFTWARE

1:	Observer I basic software; reads data via CF Card	N/C
2:	Observer II Extensive software; reads data via CF Card, RS232/422/485 or Ethernet & offers additional features	\$250.00

7. FIRMWARE

1:	Mathematics Module: Timer, Counter, Totalizer & CFR21 Type Security Features	N/C
----	---	-----

8. STORAGE MEDIA: COMPACT FLASH

6:	1 GB	N/C
7:	2 GB	\$75.00

*2GB is maximum VR will recognize

9. CASE/MOUNTING

1:	Standard Panel	N/C
2:	Bench top/Portable style w/handle front power switch & power cable	\$150.00

10. SPECIAL OPTION

0:	None	N/C
1:	24VDC isolated TRX power supply	\$150.00
2:	3 channel retransmission: current output	\$360.00
3:	6 channel retransmission: current output	\$720.00
4:	9 channel retransmission: current output (VR18 only)	\$1,080.00
D:	3 channel retransmission: voltage output	\$360.00
E:	6 channel retransmission: voltage output	\$720.00
F:	9 channel retransmission: voltage output (VR18 only)	\$1,080.00
5:	Panel mounting w/rear power plug	N/C
6:	Panel mounting w/front power switch	N/C
7:	Options 1 + 5	\$145.00
8:	Options 1 + 6	\$145.00
9:	Options 1 + 5 + 6	\$145.00
X:	Consult factory and/or manual for other combinations.	

Notes: VR Series have 6 expansion slots for analog inputs, analog outputs, digital input, digital outputs and TRX power supply. Each card takes 1 of 6 available slots.

- Analog Input Cards are available as 1, 2 or 3 inputs.
- Analog Input Cards are available as either Universal or Special Range Negative/Positive VDC/mA
- Analog Output cards have 3 outputs.
- Transmitter Power Supply Card has 6 non-isolated 24VDC@30mA outputs.
- Digital Input & Output Cards have 6 inputs or outputs.
- Communication option RS232/422/485 does not utilize and expansion slot.



VR06-18 ACCESSORIES/REPLACEMENT PARTS

Schedule D

UNIVERSAL ANALOG INPUT MODULES

AI183: Analog Input Card - 3 inputs \$300.00

ANALOG RETRANSMISSION OUTPUT MODULES

AO183I: Analog Output: 3 channel current \$360.00
AO183V: Analog Output: 3 channel voltage \$360.00

DIGITAL INPUT & OUTPUT CARDS

DI 181: Digital Input Card: 6 inputs \$225.00
DO181: Digital Output Card: 6 relays \$225.00

POWER MODULES & POWER FUSES

(Panel mount enclosure unless noted)
PM181: 90-261VAC Power Input Module \$175.00
PM184: 90-264 VAC Bench Top Power Input Module \$175.00
PM186: 20-28 VAC Power Input Module \$175.00
PM182: 11-18 VDC Power Input Module \$145.00
PM183: 18-36 VDC Power Input Module \$145.00
PM185: 32-72 VDC Power Input Module \$145.00
Power Fuse 2.5 amp (AC Power) \$10.00
Power Fuse 5 amp (DC Power) \$10.00

TRANSMITTER POWER SUPPLY

(occupies expansion slot)
AP181: 24VDC Transmitter Power Supply \$150.00

COMMUNICATIONS

CM181: RS232/422/485 Modbus & Ethernet Module \$140.00
CM182: Standard Ethernet Module \$85.00

SOFTWARE

AS181: Observer I Basic Software N/C
AS182: Observer II Extensive Software \$250.00
Refer to Instruction Manual for information & feather descriptions for Observer I & II software.

FIRMWARE/MATH & CFR21 SECURITY FEATURES

System Upgrade N/C
BT182: VR18 Math: Math Module and CFR21 type security \$300.00
Math Module became Standard July 2009. The BT182 is available for units purchased prior to July 2009 without Math/CFR21 (Field Installation of BRT182 memory chip requires assembly & disassembly of recorder.)

COMPACT FLASH CARDS

CF1000: 1 GB CF Card \$75.00
CF2000: 2 GB CF Card \$75.00
- 2GB is maximum VR will recognize

PORTABLE MOUNTING HARDWARE

Mk183: Portable Mounting Hardware \$150.00

INSTRUCTION MANUAL

FDC - UMRV181Q (v2.37 November 2011) \$50.00
FDC - UMRV061A (v2.37 November 2011) \$50.00

Notes:

VR18 has 6 expansion slots for analog inputs, analog outputs, digital inputs, digital outputs and transmitter power supply.
Each card takes one of six available slots.
- Analog Input Cards are available as 1, 2 or 3 inputs.
- Analog Output cards have 3 outputs.
- Digital Input & Output Cards have 6-inputs or 6-outputs.
- Transmitter Power Supply Card has 6 non-isolated 24VDC@30mA outputs.
- Communication option RS232/422/485 does not utilize an expansion slot.

FDC-IO Modules

**FDC-IO Modules (Modbus Slave);
 Analog / Digital Input & Output Modules - Serial Modbus**

Schedule C



FDC-IO Modules: Digital Input & Output

Part #	Description	Price
IO-16DI	16 Digital Input Module including Counters	\$200.00
IO-16DO	16 Digital Output Module	\$200.00
IO-4RO	4 Relay Output Module	\$190.00
IO-8DIO	8 Digital Inputs / 8 Digital Output Module	\$200.00

FDC-IO Modules: Analog Input

Part #	Description	Price
IO-8AIIS	8 Analog Input 0-20mA / 4-20mA; Isolated	\$375.00
IO-8AIVS	8 Analog Input 0-5/1-5 /0-10/2-10VDC; Isolated	\$375.00

FDC-IO Modules: Analog Output

Part #	Description	Price
IO-8AOI	8 Analog Output 0-20mA / 4-20mA	\$285.00
IO-8AOV	8 Analog Input 0-10 / 2-10 VDC	\$285.00

FDC-IO Modules: Thermocouple & RTD Input

Part #	Description	Price
IO-6RTD	6 RTD Input Module	\$325.00
IO-8TCS	8 Thermocouple Input Module; Isolated	\$375.00

Thermocouple Modules also accept 0-50mV and +/- 100mV

FDC-IO Modules: Combination Input & Output

Part #	Description	Price
IO-DAIO	2 RTD and 2 Analog Inputs (mA/VDC) 1 Analog Output, 4 Digital Inputs & 2 Digital Outputs	\$385.00

FDC-IO Modules: IO Studio Software

Part #	Description	Price
IO-Studio	PC Software to set Module Communication parameters and read IO status	N/C
IO-Studio Plus:	IO-Studio with Data Acquisition	\$175.00

Refer to FDC Gateway Protocol Converter page 35 for:
 - Serial to Ethernet converter
 - RS232-485 Converter



FDC-Gateway Protocol Converters

PC-E: Gateway Protocol Converter; Serial Modbus to Modbus TCP Ethernet
SNA-10A: Gateway RS232-485 Converter

PC-E Protocol Converter (Schedule C)

Part #	Description (Schedule C)	Price
PC-E	Gateway Modbus Serial to Ethernet Converter: Serial Modbus to Modbus TCP Ethernet	\$330.00

Model PC-E



Model SN10A



Serial RS232 to RS485 Converters (Schedules A -C-D)

RS232-485 Gateway
 Typically required when connecting controls to a PC's RS232 port via the PC's serial port (9-pin connection) or to a PC's USB port.

Model SN10A: PC Serial or USB Connection
 Model SN10A RS232 to RS485 Gateway
 Model: SNA10A (Schedule A) Price \$160.00

Serial Cable to connect SNA10A to PC serial port
 (9-pin connection to PC serial port & SN10A; 6 ft cable)
 Model: DB9M-DB9F-6ft (Schedule D) Price \$20.00

USB to Serial Converter (if PC does not have a Serial Port)
 GUC232: USB-Serial-Cable (Schedule C) Price \$50.00

Model Uport 1150: Direct USB to RS232 to RS485 Connection
 One part number and two components providing a USB RS232 to 485 Gateway connection. This model does not require the Serial 9-pin cable (uses USB port) and includes the USB cable
 Model: Uport@ 1150 (Schedule D) \$149.00
 Model: Uport@ 1150I (2KV optical isolation) (Schedule D) \$271.00

Gateway Accessories (Schedule C)

Power Supply

Part #	Description	Price
PSR5R-VD24	Power Supply - DIN Rail Mount Input 85-264VAC / Outupt 24VDC 60 Watt Larger capacity Power Supplies – consult factory	\$55.00

Serial Communication Cables

Part #	Description	Price
DB9M-DB9F-6ft	Serial Cable SN10A to PC	\$20.00
CA2010-20	Serial RS485 male connection 2-wire 20 foot cable with stripped leads	\$25.00

Ethernet Cables (PC-E Gateway Converter)

Part #	Price	Part#	Price
CA-CAT5E-Patch-7ft	\$10.00	CA-CAT5E-Crossover-7ft	\$10.00
CA-CAT5E-Patch-25ft	\$15.00	CA-CAT5E-Crossover-25ft	\$15.00
CA-CAT5E-Patch-50ft	\$25.00		
CA-CAT5E-Patch-100ft	\$45.00		

Printed Manual

	Price
FDC-PC-E Manual v1.0 August-2007	\$30.00
FDC-SN10A Manual	\$10.00

nCompass Communication Components (Schedule D)

Part #	Description	Price
XS201A	RS232/485 Converter for nComapss	\$50.00

Part # Description Price

DG909MF2	9 Pin Right Angle Adapter	\$20.00
DG9025MF2	25 Pin Right Angle Adapter	\$50.00

1.00" (2.5cm)
 1.00" (2.5cm)

DG909MF2
 DG9025MF2 Cable Exit 2

*The XS201A plugs into the nCompass RS232 9-pin port allowing a serial Modbus RTU master to communicate directly to the nCompass system



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Brainchild - HMI

BASE PRICING:

HMI 450	4.3"	\$415.00
HMI 730	7.0"	\$635.00
HMI 750	7.0"	\$865.00



* A \$34.00 NET SURCHARGE PER DISPLAY WILL BE IN EFFECT FOR PRODUCT DELIVERED FEBRUARY 1ST THROUGH AUGUST 2023. THIS SURCHARGE IS TO COVER SHORT TERM COMPONENT PREMIUMS TO MAINTAIN PRODUCT FABRICATION STARTING JANUARY THROUGH JULY 2023

Enter a number into each box which corresponds to the specifications you want when ordering the HMI.

	HMI 450	1	0									
	HMI 730		0			0		0				
	HMI 750			1	1							
		1	2	3	4	5	6	7	8			

1. POWER SUPPLY

- 1. 11 to 36 VDC (required HMI 450) N/C
- 2. 90 to 250 VAC N/C

2. SOUND OUTPUT

- 0. None (required for HMI 450 & 730 as sound N/A) N/C
- 1. Yes (optional on HMI 750) \$145.00

3. SD card slot

- 0. None N/C
- 1. Yes (optional for HMI 450, 730) \$12.00
(std HMI 750)

4. Ethernet (std HMI 750, 1050, 1550; opt w/cost adder for HMI 450/730)

- 0. None (Ethernet is not standard for HMI 450 & 730) N/C
- 1. Yes (std HMI 750; cost adder for 450 & 730) \$70.00

5. NETWORK Slave

- 0. None (Slave n/a for HMI 730) N/C
- 2. PROFINET \$470.00
- 3. DeviceNet \$470.00
- 4. EtherNet / IP \$470.00
- 5. CANopen \$470.00
- 8. CC-Link \$440.00

6. SOFTWARE

- 1. Panel Studio Development Software Basic Editing & Data Acquisition software N/C
- 2. Panel Studio Plus Development Software Panel Studio with Symbol Factory \$225.00
- 3. No software WinCE 6.0® Core Does not include Panel Studio Control Panel * N/C
- 4. No software, WinCE 6.0® Pro Does not include Panel Studio Control Panel * \$35.00
- 5. WinCE 6.0® Pro Platform with Panel Studio Development Software \$35.00
- 6. WinCE 6.0 Pro Platform with Panel Studio Plus Development Software \$250.00

Note:
 - Panel Studio may be downloaded from web site
 - Panel Studio Plus may be purchased as a separate item
 - WinCE 6.0 Pro and Panel Studio (code 5&6) allows access to view pdf files on HMI
 *Control Panel is required to utilize Panel Studio Development Software

7. ENCLOSURE

- 0. Standard N/C
 HMI 450, 730: all plastic
 HMI 750: aluminum front, plastic rear
- 1. Option IP66 with type 304 stainless steel front bezel (n/a for HMI 450, 730) (IP66 exceeds Nema 4X) \$675.00
 HMI 750

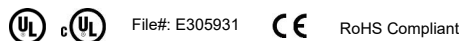
8. OVERLAY COLOR

BLANK	Standard Green Color	N/C
SN	Neutral Gray Color	N/C
BN	Neutral Black Color	N/C

OPTIONAL ACCESSORIES

Part Number	Description	
CA-PC3-80	Program download cable from PC to HMI (RJ45 Ethernet cross over cable)	\$10.00
USB-to-Ethernet	For HMI's without Ethernet port: Converter to download application from PC Ethernet port to HMI USB port	Call

6-15-2021 Updated Enclosure description



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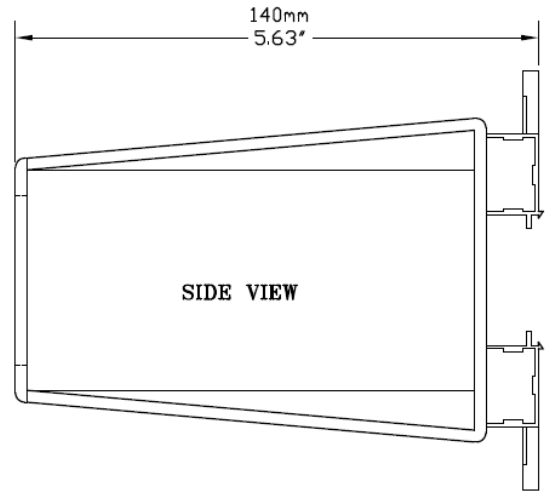
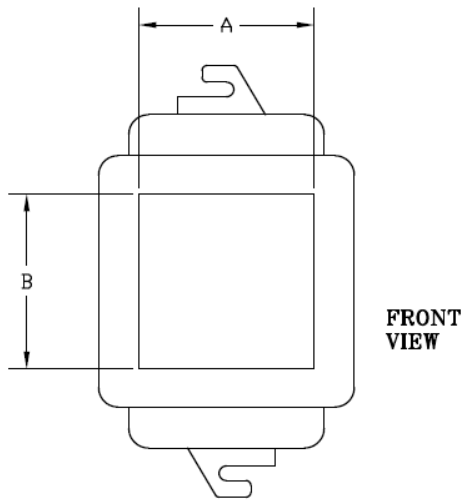
DIN Rail Adapter

BASE PRICING:

1/32 DIN DRA 32 & 1/16 DIN DRA16 \$20.00

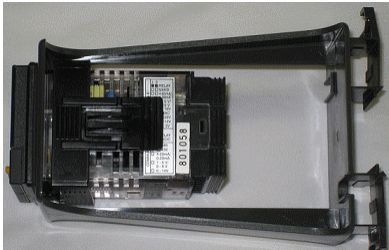
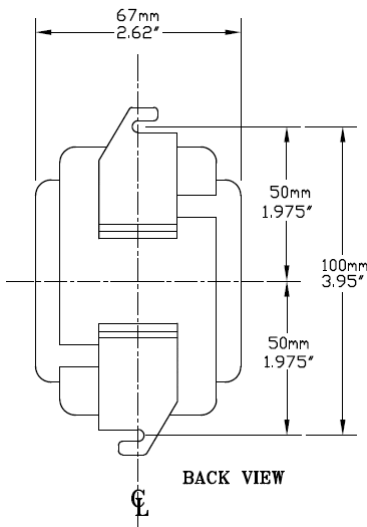
Terminal Mount DIN Rail Adapter for 1/16 DIN Models FDC-9100 and FDC-P91 refer to DIN Control Accessories page 30

Schedule A



Part #	Dim A	Dim B	Max. DIN Control Depth
DRA32 1/32 DIN	45mm/1.77"	22mm/0.8666"	120mm/4.72"
DRA16 1/16 DIN	45mm/1.77"	45mm/1.772"	120mm/4.72"

**Plastic Material:
Fire Retardant Polycarbonate GE Lexan® 940**



DRA16 Side View with control installed

DRA16 Front View with control installed



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DIN Controllers Spare Parts Pricing

Schedule D

90 Series

Output Type	Out 1	Cost
Relay	JQ1P-24V	\$ 12.00
4/20 mA (linear PID)	OM93-1	\$ 28.00
0/20 mA (linear PID)	OM93-1	\$ 28.00
0/10VDC (linear PID)	OM93-3	\$ 28.00
	Alarm	
Relay	JQ1P-6V	\$ 12.00

2500/300 Series

Output Type	Out1 & Out 2	Cost
Relay	JY-5HK	\$ 12.00
4/20,0/20 mA (linear PID)	OM95-3	\$ 28.00
1/5,0/5 VDC (linear PID)	OM95-4	\$ 28.00
0/10 VDC (linear PID)	OM95-5	\$ 28.00
Triac 1 Amp	OM94-6	\$ 28.00
14 VDC SSRD	OM94-7	\$ 28.00
	Out 2 ONLY	
20 VDC Power Supply	DC94-1	\$ 28.00
12 VDC Power Supply	DC94-2	\$ 28.00
5 VDC Power Supply	DC94-3	\$ 28.00
	Alarm 1	
Relay	JQ1P-5V	\$ 12.00
	Alarm 2 (8300/4300 ONLY)	
Relay	JY-5HK	\$ 12.00
	Communication/Retransmission Options	
4/20,0/20mA	CM94-3	\$ 90.00
1/5, 0/5 VDC	CM94-4	\$ 90.00
0/10 VDC	CM94-5	\$ 90.00
RS 485 Comms	CM94-1	\$ 75.00
RS 232 Comms	CM94-2	\$ 75.00

L91 & L41 Limit Controls

Control Type	Out1 ONLY	Cost
Relay	JQ1P-5V	\$ 12.00
Triac 1 Amp	OM94-6	\$ 28.00
14 VDC SSRD	OM94-7	\$ 28.00
	Out 2 Options ONLY	
Relay (L91)	JY-5HK	\$ 12.00
Relay (L41)	JQ1P-5V	\$ 12.00
Triac 1 Amp	OM94-6	\$ 28.00
14 VDC SSRD	OM94-7	\$ 28.00
Remote Reset (L91 Only)	EI96-1	\$ 28.00
20 VDC Power Supply	DC94-1	\$ 28.00
12 VDC Power Supply	DC94-2	\$ 28.00
5 VDC Power Supply	DC94-3	\$ 28.00
	Communication/Retransmission Options	
4/20,0/20mA (L91/L41)	CM96-3/CM94-3	\$ 90.00
1/5, 0/5 VDC (L91/L41)	CM96-4/CM94-4	\$ 90.00
0/10 VDC (L91/L41)	CM96-5/CM94-5	\$ 90.00
RS 485 Comms (L91)	CM96-1	\$ 75.00
RS 485 Comms (L41)	CM94-1	\$ 75.00
RS 232 Comms (L41)	CM94-2	\$ 75.00

100 Series

Output Type	Out 1 & Out2	Cost
Relay	JY-5HK	\$ 12.00
4/20,0/20 mA (linear PID)	OM96-3	\$ 28.00
1/5,0/5 VDC (linear PID)	OM96-4	\$ 28.00
0/10 VDC (linear PID)	OM96-5	\$ 28.00
Triac 1 Amp	OM94-6	\$ 28.00
14 VDC SSRD	OM94-7	\$ 28.00
	Out2 ONLY	
20 VDC Power Supply	DC94-1	\$ 28.00
12 VDC Power Supply	DC94-2	\$ 28.00
5 VDC Power Supply	DC94-3	\$ 28.00
	8100/4100 Communication/Retransmission Options	
4/20,0/20mA	CM94-3	\$ 90.00
1/5, 0/5 VDC	CM94-4	\$ 90.00
0/10 VDC	CM94-5	\$ 90.00
RS 485 Comms.	CM94-1	\$ 75.00
RS 232 Comms.	CM94-2	\$ 75.00
	9100 Communications/Retransmission Options	
4/20,0/20mA	CM97-3	\$ 90.00
1/5, 0/5 VDC	CM97-4	\$ 90.00
0/10 VDC	CM97-5	\$ 90.00
RS 485 Comms	CM97-1	\$ 75.00
RS 232 Comms	CM97-2	\$ 75.00

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DIN Controllers Spare Parts Pricing (cont)

Schedule D

C21/C91

Output Type	Out 1 ONLY	Cost
Relay C91 ONLY	JQ1P-5V	\$ 12.00
Relay C21 ONLY	JY-5HK	\$ 12.00
	Out 1 & 2	
Relay (output #2 only)	JY-5HK	\$ 12.00
4/20,0/20 mA (linear PID)	OM96-3	\$ 28.00
1/5,0/5 VDC (linear PID)	OM96-4	\$ 28.00
0/10 VDC (linear PID)	OM96-5	\$ 28.00
Triac 1 Amp	OM94-6	\$ 28.00
14 VDC SSRD	OM94-7	\$ 28.00
	Out 2 ONLY	
20 VDC Power Supply	DC94-1	\$ 28.00
12 VDC Power Supply	DC94-2	\$ 28.00
5 VDC Power Supply	DC94-3	\$ 28.00
14 VDC SSRD	OM94-7	\$ 28.00

Communication/Retransmission Options—C21

4/20,0/20mA	CM94-3	\$ 90.00
1/5, 0/5 VDC	CM94-4	\$ 90.00
0/10 VDC	CM94-5	\$ 90.00
RS 485 Comms.	CM94-1	\$ 75.00
RS 232 Comms.	CM94-2	\$ 75.00

Communication/Retransmission Options—C91

4/20,0/20mA	CM96-3	\$ 90.00
1/5, 0/5 VDC	CM96-4	\$ 90.00
0/10 VDC	CM96-5	\$ 90.00
RS 485 Comms	CM96-1	\$ 75.00

P Series: P91 and P41 Digital Outputs (Relay, SSR & Triac)

P41 & P91 Output 1, 2, 3 & 4 (output #4 P41 only)

Triac 1 Amp	OM94-6	\$ 28.00
14 VDC SSRD	OM94-7	\$ 28.00
	P91 Relay Output #1, #2 & #3	
Relay	JY-5HK	\$ 12.00
	P41 Relay Output #1, #2, #4	
Relay	JY-5HK	\$ 12.00
	P41 Output #3 Relay Output	
Relay	JQ1P-5V	\$ 12.00

P Series: P91 and P41 PID Linear Control Outputs (output #1 & 2)

	PID Linear Output 1 & 2	
4/20,0/20 mA	OM98-3	\$ 28.00
1/5,0/5, 0/10 VDC	OM98-5	\$ 28.00

P Series: P91 and P41 Transmitter Power Supplies, Retransmission and Serial Modbus Communication Modules

Transmitter Power Supply (isolated)

P41 Output #2, #3 and #4 /P91 Output #2 and #3

20 VDC Supply	DC94-1	\$ 28.00
12 VDC Supply	DC94-2	\$ 28.00
5 VDC Supply	DC94-3	\$ 28.00

P41 Output #5

20 VDC Supply	DC97-1	\$ 28.00
12 VDC Supply	DC97-2	\$ 28.00
5 VDC Supply	DC97-3	\$ 28.00

P91 Output #5

20 VDC Supply	DC97-1	\$ 28.00
12 VDC Supply	DC97-2	\$ 28.00
5 VDC Supply	DC97-3	\$ 28.00

Retransmission Options (isolated)

P41 Output #4

4/20,0/20mA	OM98-3	\$ 90.00
1/5, 0/5, 0/10 VDC	OM98-5	\$ 90.00

P41 Output #5

4/20,0/20mA	CM94-3	\$ 90.00
1/5, 0/5, 0/10 VDC	CM94-5	\$ 90.00

P91 Output #5

4/20,0/20mA	CM97-3	\$ 90.00
1/5, 0/5, 0/10 VDC	CM97-5	\$ 90.00

Serial Modbus Communication option (isolated)

P41 Output #5

RS 232 Comms	CM94-2	\$ 75.00
RS 485 Comms	CM94-1	\$ 75.00

P91 Output #5

RS 232 Comms	CM97-2	\$ 75.00
RS 485 Comms	CM97-1	\$ 75.00

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Accessories

LAN Accessories

Controls may be connected to PC based data acquisition and/or SCADA software such as Future Design Controls MultiView software [free] and/or other 3rd party PC based software solutions.

RS232-485 Gateway

Typically required when connecting controls to a PC's RS232 port via the PC's serial port (9-pin connection) or to a PC's USB port.

PC Serial or USB Connection: Model SN10A Gateway

Model SN10A RS232 to RS485 Gateway

Model: SNA10A \$160.00

Serial Cable to connect SNA10A to PC serial port

(9-pin connection to PC serial port & SN10A; 6 ft cable)

Model: DB9M-DB9F-6ft \$20.00

USB to Serial Converter (if PC does not have a Serial Port)

GUC232: USB-Serial-Cable (Schedule C) \$50.00

Direct USB to RS232 to RS485 Gateway

One part number and two components providing a USB RS232 to 485 Gateway connection. This model does not require the Serial 9-pin cable (uses USB port) and includes the USB cable

Model: Uport@ 1150 (Schedule C) \$149.00

Model: Uport@ 1151I (Schedule C) \$189.00

(1151I offers 2KV optical isolation)

Gateway: Model PC-E Serial Modbus RTU to Ethernet TCP/IP Modbus.

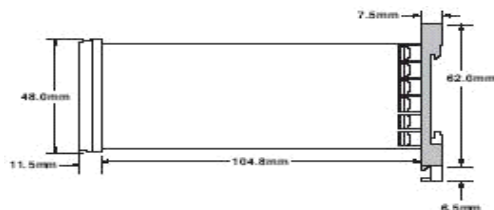
The PC-E is an interface to bridge Serial Modbus devices to computer hosts running Modbus TCP/IP on Ethernet networks

Model: PC-E Price \$330.00

DIN Rail Mounting Adapter models 9100 and P91

DIN Rail Mounting Adapter for 9100 and P91
 RK91-1

\$10.00



For 1/32 & 1/16 DIN controls refer to page 30 for universal DIN Rail Adapter model DRA-16 or DRA-32 other

* CT Sensor 50 amp (0-5vdc out)
 CT94-1 \$35.00

FDC-Set DIN Control PC based Configuration Hardware

DIN Configuration Software: FDC-Set

Configuration Software FDC-Set v 1.9 or v 2.0 N/C

Required Hardware:

Applicable to 100, 300, B, C, L, & P Series Controls

Power & Serial Communication Converter; PC to Controls SNA12A \$180.00

Serial Cable to connect SN12A to PC:

9-pin serial cable M-F 6ft DB9M-DB9F-6ft \$20.00

Programming Port Cables required to connect SN12A to DIN controls:

C21, 100, B & P Series CC91-1 \$55.00

C91 and L91 CC91-2 \$30.00

L41, 2500 and 300 Series CC91-3 \$30.00

Accessories

Power Supply, Power Cable & Axial Ferrite Coils

Part Number	Description	Price
PSR5R-VD24	Power Supply - DIN Rail Mount Input 85-264VAC / Output 24VDC 60 Watt (2.5 amp); Larger capacity Power Supplies – consult factor	\$55.00

Part Number	Description	Price
HFBead-2402079ND	High Frequency Ferrite Coil (2/package)	\$5.00
LFBead-2402282ND	Low Frequency Ferrite Coil (2/package)	\$5.00

Power Cable Part Number CA-PWR-18AWG_2conductor_shielded_no_terminals \$1.00/ft

Display Configuration and Serial Communication Cables

Part Number	Description	Price
DB9M-DB9F-6ft	Display Configuration Cable PC (F) to display's Comm1 RS232 port (M)	\$20.00
CA2010-20	Serial RS485 M connection 2-wire 20ft	\$25.00

Ethernet Cables

Part Number	Price	Part Number	Price
CA-CAT5E-Patch-7ft	\$10.00	CA-CAT5E-Crossover-7ft	\$10.00
CA-CAT5E-Patch-25ft	\$15.00	CA-CAT5E-Crossover-25ft	\$15.00
CA-CAT5E-Patch-50ft	\$25.00		
CA-CAT5E-Patch-100ft	\$45.00		

USB Cables & Accessories

Part Number	Description	Price
USB-CableExt- 6ft	USB M to F Extension Cable-6ft	\$15.00
USB-CableExt-16ft	USB M to F Extension Cable-16ft	\$30.00
WPUSBAX-05M	USB M to F Panel Mount Cable	\$50.00
WPUSB-CVR	USB Cable Nema 4X Cover	\$20.00





FUTUREDESIGN
CONTROLS

NOTES

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WARRANTY & RETURN STATEMENT

Warranty:

Future Design Controls products described in this brochure are warranted to be free from functional defects in materials and workmanship at the time the products leave Future Design Controls facilities and to conform at that time to the specifications set forth in the relevant Future Design Controls manual, sheet or sheets for the time period specified in their respective product manuals after delivery to the first purchaser for use. If there is no warranty statement or time period stated in a product's respective product manual the Warranty period is one year.

There are no expressed or implied Warranties extending beyond the Warranties herein and above set forth.

Limitations

Future Design Controls provides no warranty or representations of any sort regarding the fitness of use or application of its products by the purchaser. Users are responsible for the selection, suitability of the products for their application or use of Future Design Controls products.

Future Design Controls shall not be liable for any damages or losses, whether direct, indirect, incidental, special, consequential or any other damages, costs or expenses excepting only the cost or expense of repair or replacement of Future Design Control products as described below.

Future Design Controls sole responsibility under the warranty, at Future Design Controls option, is limited to replacement or repair, free of charge, or refund of purchase price within the warranty period specified. This warranty does not apply to damage resulting from transportation, alteration, misuse or abuse.

Future Design Controls reserves the right to make changes without notification to purchaser to materials or processing that do not affect compliance with any applicable specifications.

Return Material Authorization:

Contact Future Design Controls for Return Material Authorization Number prior to returning any product to our facility.