

# Technical Note

## RFP™ Mating Connectors for Mainframe



### PURPOSE

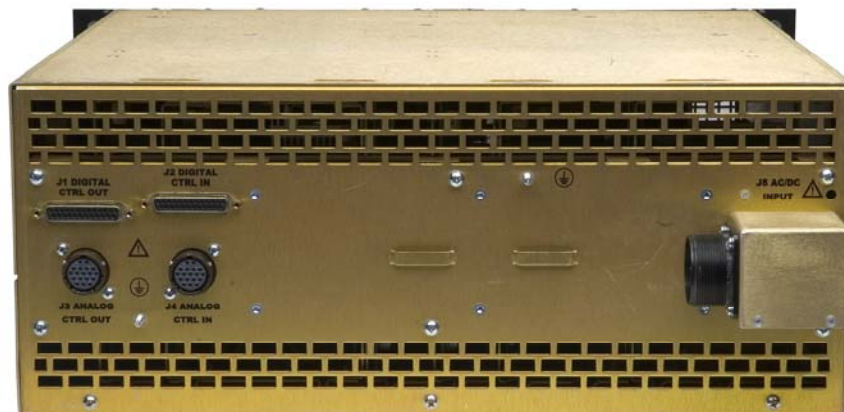
Provide mating connector information for the RFP™ Mainframe.

### MATING CONNECTOR KIT

Part Number Not Applicable

Elgar recommends using one of the following Elgar Cable Assemblies:

- Interconnect Cable Assembly, 36", P/N 5380054-01
- Interconnect Cable Assembly, 97", P/N 5380054-02
- Interconnect Cable Assembly, 135", P/N 5380054-03
- Input Power Cable Assembly, P/N 5380317-01



The RFP™ Mainframe chassis rear panel connectors, J1 through J4, provide signal interconnections in multiple Mainframe RFP™ systems. Mainframes are connected in a daisy-chain manner using the Interconnect Cable Assemblies, P/N 5380054-01, P/N 5380054-02 or 5380054-03, between pairs of Mainframes. Up to eight RFP Mainframes can be controlled by a single RFP™ Controller module (RFPC).

- **J1** and **J3** are output connectors that provide digital and analog control signals, respectively, to a following Mainframe further down in the daisy-chain.
- **J2** and **J4** are input connectors that accept digital and analog control signals, respectively, from a preceding Mainframe further up in the daisy-chain.
- **J5** is the AC/DC input power connector to a Mainframe.

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## RFP™ Mating Connectors for Mainframe



### J1 DIGITAL CONTROL OUTPUT CONNECTOR

J1, DIGITAL OUTPUT Connector			
	Name	Function	Signal Level
1	ADR_MAIN0	Output: chassis address	5V logic level
2	ADR_MAIN1	Output: chassis address	5V logic level
3	ADR_MAIN2	Output: chassis address	5V logic level
4	7.5VB	Output: digital 7.5V source	Backplane 7.5VDC
5	BGND	Digital signal reference	Backplane circuit common
6	ARCNET_H_OUT	Input/Output: ARCNET differential data bus	ARCNET bus referenced to BGND
7	ARCNET_L_OUT	Input/Output: ARCNET differential data bus	ARCNET bus referenced to BGND
8	DIG3_I/O_H_OUT	Input/Output: digital-I/O differential signal	RS-485 logic levels referenced to BGND
9	DIG3_I/O_L_OUT	Input/Output: digital-I/O differential signal	RS-485 logic levels referenced to BGND
10	DIG2_I/O_H_OUT	Input/Output: digital-I/O differential signal	RS-485 logic levels referenced to BGND
11	DIG2_I/O_L_OUT	Input/Output: digital-I/O differential signal	RS-485 logic levels referenced to BGND
12	DIG1_I/O_H_OUT	Input/Output: digital-I/O differential signal	RS-485 logic levels referenced to BGND
13	DIG1_I/O_L_OUT	Input/Output: digital-I/O differential signal	RS-485 logic levels referenced to BGND
14	DIG0_I/O_H_OUT	Input/Output: digital-I/O differential signal	RS-485 logic levels referenced to BGND
15	DIG0_I/O_L_OUT	Input/Output: digital-I/O differential signal	RS-485 logic levels referenced to BGND
16	7.5VB	Output: digital 7.5V source	Backplane 7.5VDC
17	BGND	Digital signal reference	Backplane circuit common
18	TERMH	Termination signal	I/O Interconnect PWA 10VDC referenced to BGND
19	TERML_2	Termination signal return	I/O Interconnect PWA 10VDC referenced to BGND
20	REM_INH_OUT	Output: differential remote inhibit signal	RS-485 logic levels referenced to BGND
21	REM_INH_OUT	Output: differential remote Inhibit signal	RS-485 logic levels referenced to BGND
22	BGND	Digital signal reference	Backplane circuit common
23	PWR1	Output: module enable from Controller module	5V referenced to BGND
24	7.5VB	Output: digital 7.5V source	Backplane 7.5VDC
25	CHAS-GND	Chassis ground	Chassis

### RECOMMENDED TOOLS

Not applicable

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## RFP™ Mating Connectors for Mainframe



### J2 DIGITAL CONTROL INPUT CONNECTOR

J2, DIGITAL INPUT Connector			
Pin	Name	Function	Signal Level
1	A0	Input: chassis address	5V logic level
2	A1	Input: chassis address	5V logic level
3	A2	Input: chassis address	5V logic level
4	7.5VB	Output: digital 7.5V source	Backplane 7.5VDC
5	BGND	Digital signal reference	Backplane circuit common
6	ARCNET_H_IN	Input/Output: ARCNET differential data bus	ARCNET bus referenced to BGND
7	ARCNET_L_IN	Input/Output: ARCNET differential data bus	ARCNET bus referenced to BGND
8	DIG3_I/O_H_IN	Input/Output: digital-I/O differential signal	RS-485 logic levels referenced to BGND
9	DIG3_I/O_L_IN	Input/Output: digital-I/O differential signal	RS-485 logic levels referenced to BGND
10	DIG2_I/O_H_IN	Input/Output: digital-I/O differential signal	RS-485 logic levels referenced to BGND
11	DIG2_I/O_L_IN	Input/Output: digital-I/O differential signal	RS-485 logic levels referenced to BGND
12	DIG1_I/O_H_IN	Input/Output: digital-I/O differential signal	RS-485 logic levels referenced to BGND
13	DIG1_I/O_L_IN	Input/Output: digital-I/O differential signal	RS-485 logic levels referenced to BGND
14	DIG0_I/O_H_IN	Input/Output: digital-I/O differential signal	RS-485 logic levels referenced to BGND
15	DIG0_I/O_L_IN	Input/Output: digital-I/O differential signal	RS-485 logic levels referenced to BGND
16	7.5VB	Output: digital 7.5V source	Backplane 7.5VDC
17	BGND	Digital signal reference	Backplane circuit common
18	TERMH	Termination signal	I/O Interconnect PWA 10VDC referenced to BGND
19	TERML_1	Termination signal return	I/O Interconnect PWA 10VDC referenced to BGND
20	REM_INH_IN	Output: differential remote inhibit signal	RS-485 logic levels referenced to BGND
21	REM_INH_IN	Output: differential remote Inhibit signal	RS-485 logic levels referenced to BGND
22	BGND	Digital signal reference	Backplane circuit common
23	PWR1	Output: module enable from Controller module	5V referenced to BGND
24	7.5VB	Output: digital 7.5V source	Backplane 7.5VDC
25	CHAS-GND	Chassis ground	Chassis

### J3 ANALOG CONTROL OUTPUT CONNECTOR

J3, ANALOG OUTPUT Connector			
Pin	Name	Function	Signal Level
F	SYNCH-OUT	Input/output: SYNC bus differential signal with SYNC-L	RS-485 logic levels referenced to module AGND
R	SYNCL-OUT	Input/output: SYNC bus differential signal with SYNC-H	RS-485 logic levels referenced to module AGND
U	CURRH-OUT	Input/output: CURR bus differential signal with CURR-L	10V analog signal referenced to module AGND
N	CURRL-OUT	Input/output: CURR bus differential signal with CURR-H	10V analog signal referenced to module AGND
S	CMDH-OUT	Output: CMD bus differential signal with CMD-L	10V analog signal referenced to module AGND
H	CMDL-OUT	Output: CMD bus differential signal with CMD-H	10V analog signal referenced to module AGND
K	/FLTBUS-OUT	Input/Output: summary fault signal bus	5V digital signal referenced to module AGND
T	AGND-OUT	Analog signal reference	Module circuit common AGND referenced to output return (negative) terminal
J	CHAS-GND	Chassis ground	Chassis
A,C,D,G ,H,I,K,L, M	-	Reserved	-

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## RFP™ Mating Connectors for Mainframe



### J4 ANALOG CONTROL INPUT CONNECTOR

J4, ANALOG INPUT Connector			
Pin	Name	Function	Signal Level
F	SYNCH-IN	Input/output: SYNC bus differential signal with SYNC-L	RS-485 logic levels referenced to module AGND
R	SYNCL-IN	Input/output: SYNC bus differential signal with SYNC-H	RS-485 logic levels referenced to module AGND
U	CURRH-IN	Input/output: CURR bus differential signal with CURR-L	10V analog signal referenced to module AGND
N	CURRL-IN	Input/output: CURR bus differential signal with CURR-H	10V analog signal referenced to module AGND
S	CMDH-IN	Output: CMD bus differential signal with CMD-L	10V analog signal referenced to module AGND
H	CMDL-IN	Output: CMD bus differential signal with CMD-H	10V analog signal referenced to module AGND
K	/FLTBUS-IN	Input/Output: summary fault signal bus	5V digital signal referenced to module AGND
T	AGND-IN	Analog signal reference	Module circuit common AGND referenced to output return (negative) terminal
J	CHAS-GND	Chassis ground	Chassis
A,C,D,G ,H,I,K,L, M	-	Reserved	-

### J5 AC/DC INPUT CONNECTOR

J5, AC/DC INPUT Connector			
Pin	Name	Function	Signal Level
F	L1	Input: line-1	90-264VAC; 210-300VDC
E	L1-RTN	Input: return for line-1	90-264VAC; 210-300VDC
A	L2	Input: line-2	90-264VAC; 210-300VDC
G	L2-RTN	Input: return for line-2	90-264VAC; 210-300VDC
B	L3	Input: line-3	90-264VAC; 210-300VDC
C	L3-RTN	Input: return for line-3	90-264VAC; 210-300VDC
D	CHAS-GND	Safety ground	Chassis ground

### GND, CHASSIS GROUND

GND, Chassis Ground			
Pin	Name	Function	Signal Level
E1	GND	Chassis safety ground; 8-32 stud	Chassis ground

### J1 THROUGH J5 WIRE SIZE

Mainframe J1, J2, J3, J4, and J5 Connector Wire Size/Length			
Connectors J1 and J2 contain high-speed digital signals that require controlled cable impedances. Connectors J3 and J4 contain noise-sensitive analog signals. Therefore, to maintain signal integrity, cables must conform to construction requirements of Elgar cable assembly 5380054.			
Connector	Pin	Maximum Wire Gauge, AWG	Maximum Wire Length, ft
J1	All	22	30, total aggregate for all Mainframe interconnecting cables
J2	All	22	30, total aggregate for all Mainframe interconnecting cables
J3	All	20	30, total aggregate for all Mainframe interconnecting cables
J4	All	20	30, total aggregate for all Mainframe interconnecting cables
J5	All	10	Dependent on input source voltage and permitted line drop at 24A per line maximum current for fully populated Mainframe

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