HaveQuick Splitter
User Manual

P/N 900000168 REV E

For Brandywine Communications products with the following part numbers:
001-0279, 001-0282, 001-0311, 001-0411, 001-0417, 001-0428

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1 Revision History

Revision	Date	Description	ECO Number
A	10/17/2017	Initial Release	N/A
B	04/16/2018	Added pinout	N/A
C	01/13/2020	Corrected pinout	ECO11277
D	07/01/2020	Added Pinout Diagrams	ECO11359
E	03/09/2021	Added PN 001-0417 and 001-0428	ECO11648

2 Important Safety Information

CAUTION:

The exclamation point inside of an equilateral triangle is intended to alert the user to the presence of important operation and maintenance instructions in the user guide. Only qualified personnel should install this component. This unit is a static-sensitive device; please use appropriate storage, handling and installation procedures.

3 Introduction

Brandywine Communications' Have Quick/1PPS Distribution Amplifier (HQS) is a small rugged, powered Have Quick/1PPS distribution module mounted in a 4" x 4" x 2.5" environmentally secure enclosure. The HQS can provide an MTBF up to 1 million hours depending on configuration.

The HQS was developed to facilitate long cable runs of both 1PPS and Have Quick signals for ships or aircraft requiring these timing reference signals at multiple locations. With the tested, ruggedized enclosure the HQS can be placed in difficult environments and difficult to reach places on ships and aircraft. The unit may be configured for single ended or differential signals as required for the application (factory configured). Various power options are also available upon request. Designed for "fit and forget" operation, the compact, reliable module provides an elegant solution for distribution of the timing references from an embedded military GPS receiver.

4 Specifications

Signal Input:
Connector Type:
D38999/20WB35PN
1PPS:
Amplitude: 0-10V per ICD-GPS-060
Impedance: 50ohm
Have Quick:
Amplitude: 0-5V per ICD-GPS-060
Impedance: 2kohm

Signal Output :
Connector Type:
D38999/20WB35SN
1PPS:
No of Outputs: 3
Amplitude: 0-10V per ICD-GPS-060
Impedance: 50ohm or low Z
Have Quick:
No of Outputs: 3
Amplitude: 0-5V per ICD-GPS-060
Impedance: 2kohm

Power Input:
Connector Type:
D38999/20WA98PN
Power Option 1
145 VDC to 162 VDC or
Power Option 2
15 VDC to 36 VDC

Power Consumption:
<5 Watts.

Size:
3.94”x3.94”x2.36” w/o connectors
3.94”x5.8”x2.36” incl. connectors

Reliability
MTBF: >1,000,000 hours

Environmental

EMI:
MIL-STD-46, CE102, CS101, CS114, CS116, RE101, RE102, RS101, RS103

Relative Humidity:
95% relative humidity, non-condensing.

Operating Temp.:
0 to +50 ºC

Non-Operating Temp.:
-40 to +85 ºC.

Air Pressure:
Up to +30,000 feet.

Fungus & Salt/Fog:
Conformally coated.

Settling Dust:
Base material coatings and surface treatments resilient to erosion.

Operational Vibration:
Shipboard Type I MIL-STD-167-1A.

Transportation Vibration:
MIL-STD-810F Method 514, Procedure I Categories 4, 7, 8, and 10.

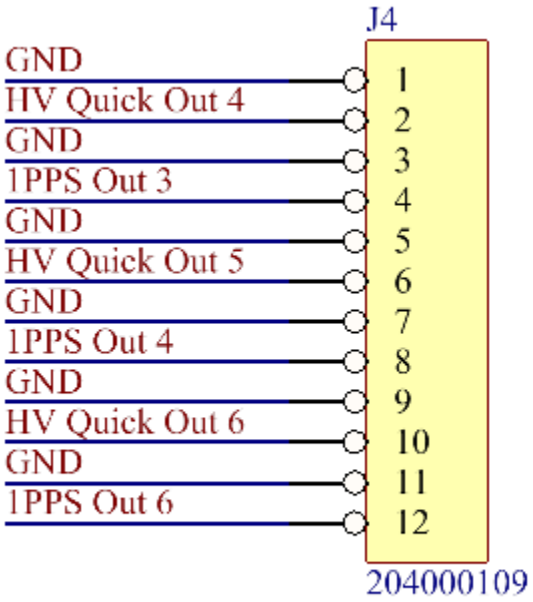
Shock:
MIL-STD-810F [3] Method 516, 20g/15ms saw tooth pulse

5 Pinout Table

Connector	Pin	Signal
Connector J1 (Clockwise from top, outside to inside)		
J1	1	HQ In
J1	2	HQ In Return
J1	3	NC
J1	4	NC
J1	5	Chassis Ground
J1	6	NC
J1	7	NC
J1	8	NC
J1	9	NC
J1	10	NC
J1	11	NC
J1	12	NC
J1	13	NC
Connector J2 (Clockwise from top right)		
J2	1	DC Power
J2	2	Chassis Ground
J2	3	Power Return
Connector J3 (Clockwise from top, outside to inside)		
J3	1	GND
J3	2	HV Quick Out 1
J3	3	GND
J3	4	1PPS Out 1
J3	5	GND
J3	6	HV Quick Out 2
J3	7	GND
J3	8	1PPS Out 2
J3	9	GND
J3	10	HV Quick Out 3
J3	11	GND
J3	12	1PPS Out 5
J3	13	GND
Connector J4 (Clockwise from top, outside to inside)		
J4	1	GND
J4	2	HV Quick Out 4
J4	3	GND
J4	4	1PPS Out 3
J4	5	GND
J4	6	HV Quick Out 5
J4	7	GND

Connector	Pin	Signal
J4	8	1PPS Out 4
J4	9	GND
J4	10	HV Quick Out 6
J4	11	GND
J4	12	1PPS Out 6
J4	13	GND

5.1 Pinout Diagrams



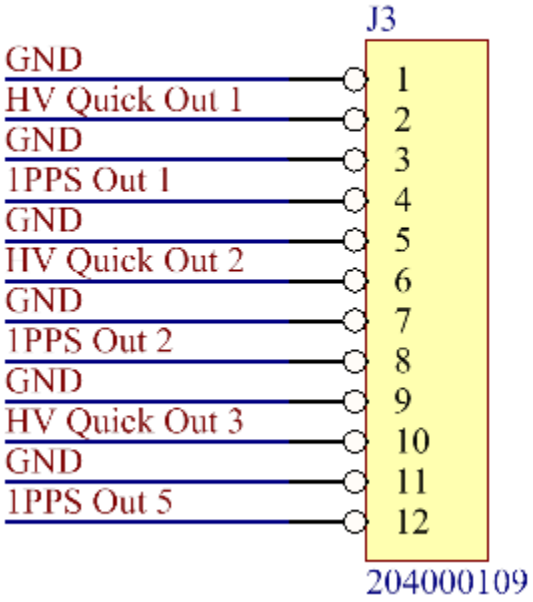


Figure 1. J4 and J3 Pinout Diagrams

6 Setup

- Remove the HaveQuick Splitter from the shipping carton.
- Mount it in place using the provided mounting hardware.

- Connect the Havequick and 1PPS source to the input connectors, followed by the power connector, ensuring that the connectors are securely fastened.
- Once the power and HaveQuick/1PPS input connectors are securely fastened, connect the HaveQuick/1PPS output connectors to the unit, and ensure that the HaveQuick/1PPS output connectors are securely fastened.

7 Operation

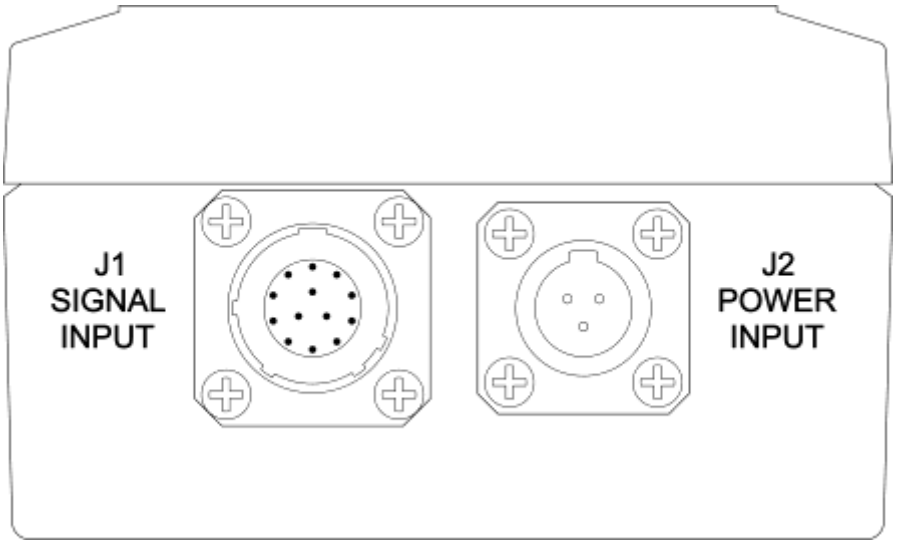
The HaveQuick Splitter is designed to operate passively and continually without user input, as a result it has no user accessible interfaces.

8 Troubleshooting

For troubleshooting reference, please refer to the following troubleshooting guide.

Problem	Cause	Solution
The HaveQuick Splitter is not operating	There is no power being applied to the HaveQuick Splitter.	Ensure that the power cable is firmly connected to the havequick splitter and the power source. Ensure that the power source is generating power for the HaveQuick Splitter to use.
	There is no input signal to the HaveQuick Splitter.	Ensure that all the HaveQuick cables are firmly and securely connected to the HaveQuick splitter. Check that the HaveQuick source is valid by directly connecting one of the client devices directly to the HaveQuick source.

9 Front View



10 Rear View