

BCU-102A-1
Blanking Control Unit
Eon P/N 29000-300

Interface Control Document:
Product Data Sheet including O&M Drawing
EON Doc # 29000-350
Rev A – 08/10/21

All pages in this document and any attachments thereto are considered Proprietary Information to and of Eon Instrumentation, Inc.

Prepared By: *Carlos Almaguer*
Carlos Almaguer
Engineer I

Approved By: **Greg Elliott**
Greg Elliott
Chief Engineer



15531 Cabrito Road
Van Nuys, CA 91406

www.eoninstrumentation.com
ISO9001:2015/AS9100D
818-781-2185

3800 Oceanic Drive, #112
Oceanside, CA 92056



16333-B Raymer Street
Van Nuys, CA 91406

www.eoninstrumentation.com
ISO9001:2015/AS9100
818-781-2185

3800 Oceanic Drive, #112
Oceanside, CA 92056



Product Data Sheet – BCU-102A-1
(07/25/2021)

Model Number: 1000-300
P/N:

General:

The KC-390 Interference Blanker, (BCU-102A-1), is a customized programmable system utilizing Eon Instrumentation’s twenty-year experience in blanking technology. Inputs accept a wide range of voltage levels and pulse frequency. Outputs are generated from a programmable blanking map of inputs to outputs. Bidirectional inputs/outputs are used to accommodate ARINC bus connections. Discrete inputs can dynamically enable or disable individual blanking inputs from the blanking map. The BCU-102A-1 is fully qualified to Environmental and EMI specifications DO-160, 461, 704, and 810.

Please access Eon’s website for information and engineering staff for other Eon blankers. Additional Eon product offerings are Video products (splitters/converters/selectors, cameras, monitors, and recorders), Rugged Power Supplies, Audio Systems and Customized System Engineering Development.

BCU-102A-1 Requirement/Feature Description:

Number	Requirement/Feature Description	Embraer Unit
1	The equipment shall accept pulse type signals as inputs. The typical pulse characteristics are: rise time equal or greater than 20 V/μs and the decay time equal or greater than 10 V/μs.	X
2	The equipment shall have four (4) single ended inputs available on front panel.	threaded BNC's
3	Internal failure shall not lead to short circuit in inputs and outputs interface.	X
4	The equipment shall have four (4) single ended outputs available on front panel. These outputs shall amplitude of 28V.	threaded BNC's
5	The equipment shall produce output pulses with rise and decay time equal or greater than 30 V/μs.	X
6	The equipment shall have four (4) single ended bidirectional input/output available on front panel. These inputs shall accept pulses of 15 (±10%) to 70 V and output with amplitude of 28 V.	threaded BNC's
7	The resistive impedance at each input port shall be at least 2 kΩ, when measured relative to ground, shunted by not more than 50 pF capacitance. In order to comply with ARINC 709, Attachment 6.	X
8	The resistive impedance at each output port shall be at least 20 kΩ, when measured relative to ground, shunted by not more than 30 pF capacitance. In order to comply with ARINC 709, Attachment 6.	X

9	Inputs and outputs shall be galvanically isolated by means such as capacitive coupling, inductive coupling, optical coupling or equivalent.	x
10	The equipment shall have four (4) discrete inputs available on front panel.	x
11	Each discrete shall be assigned to a specific input/output interface. When the discrete is high, the corresponding input shall be disabled. When the discrete is low, the corresponding input shall be enabled.	x
12	The discrete signal shall disable the corresponding input/output interface when voltage is between 5 VDC and 30.3 VDC, driving up to 90mA.	x
13	The discrete signal shall enable the corresponding input/output interface when voltage is less than 5VDC.	x
14	The system interfaces shall be robust against inadvertent short circuit.	x
15	Each output shall be capable of combining any combination of inputs.	x
16	Each input signal shall be capable to drive any combination of outputs.	x
17	The equipment shall have configurable blanking matrix.	x
18	The delay time between input signal and the resultant output, when measured between 10% levels of pulses leading edges, shall not be greater than 0.5 μ s.	x
19	The delay time between input signal and the resultant output, when measured between 10% levels of pulses trailing edges, shall not be greater than 1 μ s.	x
20	The equipment shall be capable of receiving an input signal with max amplitude between 15 and 70 volts.	x
21	The system shall be capable of generating Look Through Blanking Outputs.	x
22	The supplier shall describe the qualification process (software, AEH and problems report) applicable to the system.	x
23	The equipment shall comply with RTCA-DO-254.	x
24	The Built in Test shall consist of three discrete outputs that are activated when unit is powered on.	x
25	The first discrete shall be activated when 28 VDC power input is available.	x
26	The second discrete shall be activated when power is evident on Pulse Combiner circuit board.	x
27	The third discrete shall be activated when power is evident on Matrix mapping board.	x
28	The system shall operate with 28 VDC aircraft power supply.	x
29	The Systems shall comply with the electrical bonding and static electricity requirements of the MIL-STD-464A and RTCA/DO-160G;	x
30	Electrical connectors, contact arrangements and associated backshells shall be qualified according with Military Standards in order to achieve easy maintenance and a smaller number of different part numbers.	x
31	It shall be informed for the system what is the expected or designed Maintainability performance (MTTR).	50,000+
32	It shall be informed for the systems what is the expected or designed Reliability performance (MTBF).	50,000+

Configuration:

See the attached Outline and Mounting Drawings.

Specifications:

Finish: (except for screws, base and connectors): Black Anodize, White Lettering

Input Voltage: 28vdc

Power Consumption: <10.0Watts

Power Dissipation: <2 Watts

Weight: <3.5 lbs

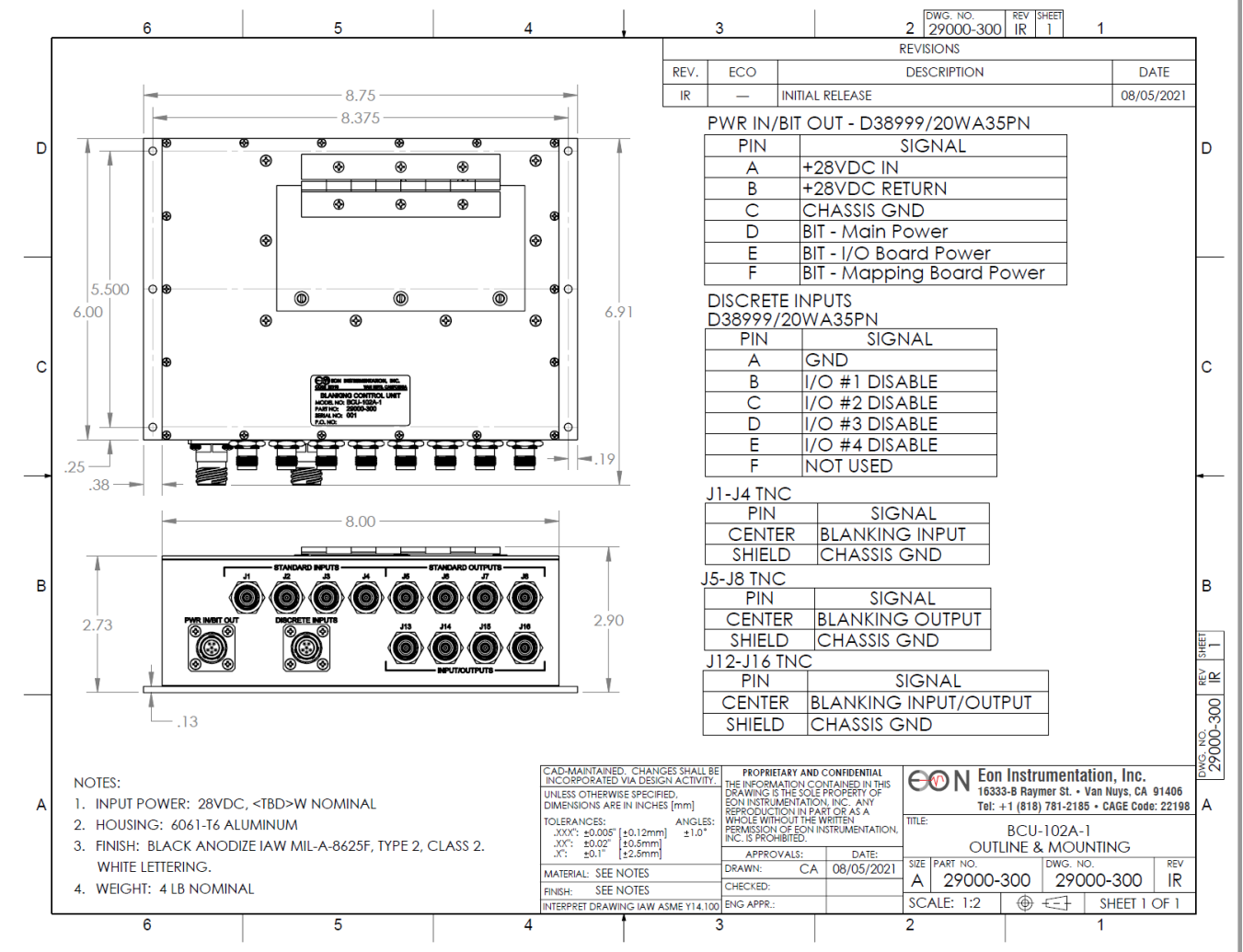
MTBF: 50,000+operational hours

Qualification (Data by similarity available upon request):

34	The system shall be designed to comply with RTCA-DO-160 according to the following TABLE.	x
	4 - Temp. & Alt. D2 for temp D2 for <40,000 ft A2 for decom and overpressure	x
	5 - Temp. Var. (A)	x
	6 - Humidity (B)	x
	7 - Shock&Crash (B, aircraft type 2)	x
	8 - Vibration Category R, Curve C&C1 Category H, Curve R	x
	9 - Explosion (E or H (if hot spot surfaces))	x
	10 - Waterproofness (W and Y)	x
	11 - Fluids (F (spray test only))	x
	12 - Sand&Dust (S)	x
	13 - Fungus (F)	x
	14 - Salt (S)	x
	15 - Magnetic Effect (Cat. B)	x
	16 - Power Input (Z)	x
	17 - Voltage spike (Cat A)	x
	18 - Audio Frequency Conducted Susceptibility (MIL-STD-461E Test Category CS101)	x
	19 - Induced Signal Susceptibility (Cat ZC)	x
	20 - Radio Frequency Susceptibility (Definition according to DAL C, Cat TT)	x
	MIL-STD-461E Additional EMI/HIRF Req. (MIL-STD-461E Additional EMI/HIRF Req.)	x
	21 - Emission of Radio Frequency Energy (Cat M)	x
	22 - Lightning Induced Transient Susceptibility (A2G22)	x
	23 - Lightning Direct Effects (N/A)	x
	24 - Icing (N/A)	x
	25 - Eletrostatic Discharge (Cat A)	x

Outline and Mounting Drawing:

BCU-102A-1 Outline and Mounting Drawing



Connector Specification:

Connector Definition			LRU Connector Specification	Mating Connector
Power In/BIT out	38999 series III	-	TE Connectivity / Deutsch	TE Connectivity / Deutsch
			D38999/20WA35PN	D38999/26WA35SN
Discrete Inputs	38999 series III	J9-J12	TE Connectivity / Deutsch	TE Connectivity / Deutsch
			D38999/20WA35PN	D38999/26WA35SN
Trigger Input	TNC 50 Ohm	J1-J4	Amphenol RF	Amphenol RF
Blanking Output	TNC 50 Ohm	J5-J8	Amphenol RF	Amphenol RF
Input/Outputs	TNC 50 Ohm	J13-J16	Amphenol RF	Amphenol RF

