



# ASM-MCP01-130N

## MCP01-130N

### Master Caution Panel



## INSTALLATION AND OPERATION MANUAL

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## MCP01-130N Master Caution Panel Installation and Operation Manual

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## MCP01-130N Master Caution Panel Installation and Operation Manual

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## Section 1.0 Description

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### 1.1 Introduction

---

Information in this section consists of product description, design features and specifications for the MCP01-130N Master Caution Panel.

Review all notes, warnings and cautions.

### 1.2 Product Description

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The MCP01-130N is a plug-compatible replacement Master Caution Panel for the AB 212 helicopter. The MCP01-130N is compatible in Form, Fit and Function with a reduction in box depth and weight.

### 1.3 Design Features

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The MCP01-130N presents a lighted annunciator legend to the pilot/co-pilot in the event that a caution or warning signal is detected. There are up to 39 input warning signals that are monitored.

The MCP01-130N utilizes modern electronics and LED technology for annunciator indication, greatly extending the service life of the unit.

The front panel design allows for individual annunciators to be changed if required.

### 1.4 Specifications

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#### 1.4.1 Electrical Specifications

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##### 1.4.1.1 Input Operating Voltage

###### SYSTEM POWER IN

###### Normal Operating Conditions:

Nominal:	+28.0 Vdc
Maximum:	+30.3 Vdc
Minimum:	+22.0 Vdc
Emergency:	+18.0 Vdc

###### Abnormal Operating Conditions:

Nominal:	+28.0 Vdc
Maximum:	+32.2 Vdc
Minimum:	+20.5 Vdc



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### 1.4.1.2 Input Power Requirements

NVIS Nominal Lighting	5 A max. @ +28 Vdc (Internally Fused @ 5A) 1 mA max. at +28 Vdc
-----------------------	--

### 1.4.1.3 Input Signals

Warning Inputs	
Quantity	39
Circuitry Type	Single Ended *NEG – Active Low, 1 mA (Source) *NEG – Active Low, 2.5 mA (Source) <sup>[1]</sup> *POS – Active High, 1 mA (Sink) *NULL – Open Circuit, 1 mA (Sink) (Active when external connection to supply is removed) * - Not all are available for each input, see Section 3.0
RESET	
Quantity	1
Circuitry Type	Single Ended, Active High, 1 mA (Sink)
EXTERNAL GND DIM CKT CONT	
Quantity	1
Circuitry Type	Active Low, 1 mA (Source)
PANEL LIGHT CONT	
Quantity	1
Circuitry Type	Single Ended, Variable Positive DC, +5 Vdc, 1 mA max.
CAUTION PANEL FAIL IN	
Quantity	1
Normal Operating Conditions:	
Nominal:	+28.0 Vdc (Internally Fused @ 3A)
Maximum:	+30.3 Vdc
Minimum:	+22.0 Vdc
Emergency:	+18.0 Vdc
Abnormal Operating Conditions:	
Nominal:	+28.0 Vdc (Internally Fused @ 3A)
Maximum:	+32.2 Vdc
Minimum:	+20.5 Vdc

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<sup>[1]</sup> Only applies to NEG triggered indicators 15, 16, 24, 27, 30, and 33.



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### 1.4.1.4 Output Signals

MASTER CAUTION LT OUT		
Quantity	1	
Circuitry Type	Single Ended, Active High	
	$V_{outmin} = \text{SYSTEM PWR IN (Vdc)} - 2 \text{ (Vdc)}$	
	350 mA max. (Source)	
DIMMING RELAY		
Quantity	1	
Circuitry Type	Single Ended, Active Low	
	2.0 Vdc max, 1 A max. (Sink)	
Test Outputs		
Quantity	3	
Circuitry Type	Single Ended, Active High	
	$V_{outmin} = \text{SYSTEM PWR IN (Vdc)} - 2 \text{ (Vdc)}$	
	350 mA max. ea. (Source)	
CAUTION PANEL FAIL OUT		
Quantity	1	
Circuitry Type	Single Ended, Active High	
	$V_{outmin} = \text{CAUTION PANEL FAIL IN (Vdc)} - 2 \text{ (Vdc)}$	
	1 A max. (Source)	

### 1.4.2 Physical Specifications

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Height	6.75" (171.4 mm) max.
Depth	1.44" (36.6 mm) max. from back of mounting surface including mating connectors 1.56" (39.6 mm) max. from back of mounting surface to front of switches
Width	5.75" (145.9 mm) max. front panel 4.35" (110.4 mm) rear enclosure
Weight	1.75 lbs (0.8 kg) max.
Mounting	Standard Dzus Mounting (six fasteners)
Connectors	2 x 26 Pin Circular Male 1 x 9 Pin D-Sub Female with Dust Cover (not functional)
Legend Capsules	Arcrylic MIL-P-5425
Material/finish	Enclosure and Legend Housing is aluminum with Clear MIL-DTL-5541 Type II Class 3 coating followed by Black Epoxy Paint.



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### 1.4.3 Environmental Specifications

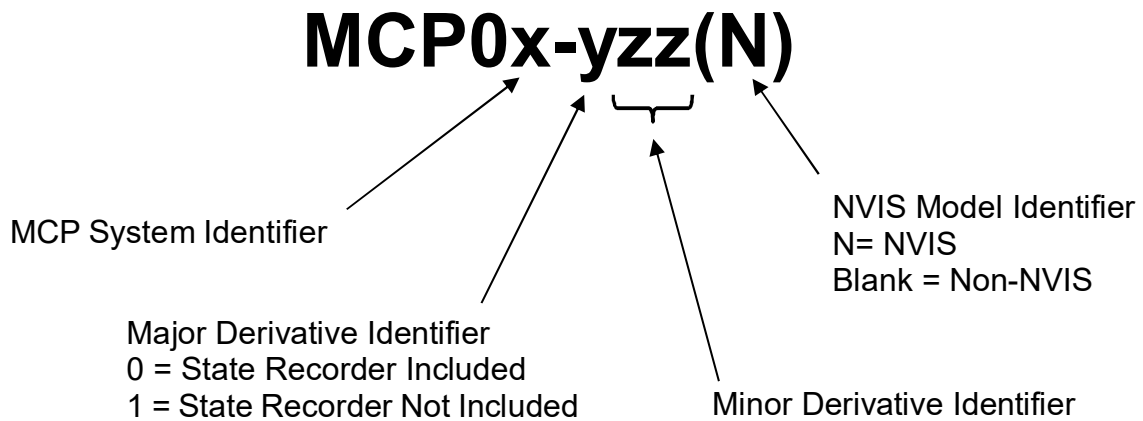
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Temperature	-40 to +70°C (ambient) -55 to +85°C (survival)
Altitude	25,000 feet max.
Humidity	95% Non-condensing
Operational Shock	6g for 11 ms
Crash Safety Shock	20g for 11 ms
Vibration	Conforms to DO-160G category 'U2' Curves F & F1

### 1.5 Unit Nomenclature

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MCP Part Numbering Convention:

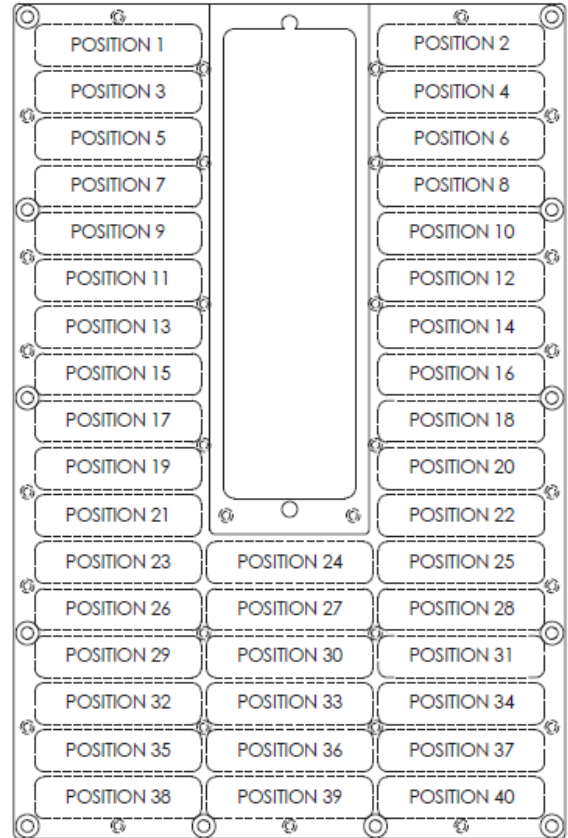
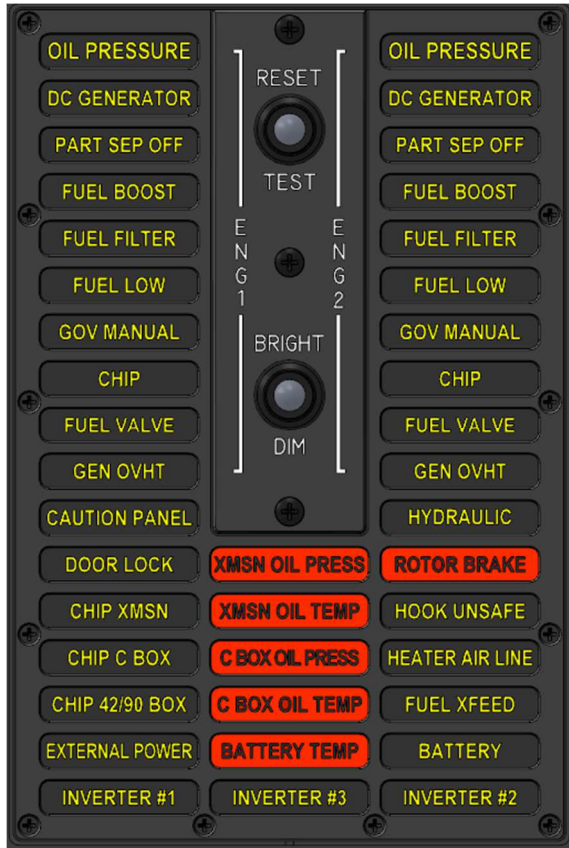






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MCP01-130N Legends:



End of Section 1.0



## MCP01-130N Master Caution Panel Installation and Operation Manual

### Section 2.0 Installation

#### 2.1 Introduction

Information in this section consists of: unpacking and inspection procedures, installation procedures, post-installation checks, and installation drawings.

#### 2.2 Unpacking and Inspection

Unpack the equipment carefully. Inspect the unit visually for damage due to shipping and report all such claims immediately to the carrier involved. Note that each unit should have the following:

- MCP01-130N
- Product Information Card
- Certificate of Conformity or Release certification

Verify that all items are present before proceeding and report any shortage immediately to your supplier.

##### 2.2.1 Warranty

All Anodyne Electronics Manufacturing Corp. (AEM) products are warranted for 2 years. See the website [www.aem-corp.com/support/warranty-information](http://www.aem-corp.com/support/warranty-information) for complete details.

#### 2.3 Installation Procedures

##### 2.3.1 Warnings

None

##### 2.3.2 Cautions

##### **Circular Connectors**

Connectors J1 and J2 have the same shell keying, but their pin orientations are different.  
Exercise caution when mating to airframe wiring.

##### **Fuse Rating**

SYSTEM POWER IN and CAUTION PANEL FAIL IN supply pins are internally fused at 5A and 3A respectively. Any current demands exceeding the rated capability will blow the associated fuse.

##### **ESD Components**

When replacing legends, ensure that proper ESD Handling Procedures are followed as internal components will be exposed.



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### 2.3.3 Cabling and Wiring

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All wire shall be selected in accordance with the original aircraft manufacturer's Maintenance Instructions or AC43.13-1B Change 1, Paragraphs 11-76 through 11-78. Unshielded wire types shall qualify to MIL-W-22759 as specified in AC43.13-1B Change 1, Paragraphs 11-85, 11-86, and listed in Table 11-11. For shielded wire applications, use Tefzel MIL-C-27500 shielded wire with solder sleeves (for shield terminations) to make the most compact and easily terminated interconnect. Follow the interconnect drawing in Section 2.8 as required.

### 2.3.4 Post-Installation Checks

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**Note:** NVIS compatibility must be evaluated for each particular installation. Reference Section 2.4.1 for NVIS adjustments.

**Do not attach the MCP01-130N until the following conditions are met.**

#### 2.3.4.1 Voltage/Resistance Checks

Check the following:

- a) Check P42 pin <Y> (system ground) for continuity to ground.
- b) Check P42 pin <Z> (system power in) for +28 Vdc relative to ground.
- c) Check P43 pin <b> (caution panel fail in) for +28 Vdc relative to ground.
- d) Check P43 pin <L> (caution panel) for continuity to ground.

Ensure all connectors are tight and the mechanical installation is sound.

## 2.4 Adjustments and Connections

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### 2.4.1 User Adjustments

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The MCP01-130N is shipped from the factory with all internal adjustments set to the normal test levels. Once installed in the aircraft, it may be desirable to change some of these settings to best suit the local operating environment. The internal adjustments are located on the left side of the unit and are labeled LEGEND DIM ADJUST and BACK LIGHT ADJUST.

**Note:** The MCP01-130N is set by factory to be NVIS compatible. Adjusting LEGEND DIM ADJUST could shift the values out of factory specified luminance levels.

#### 1) LEGEND DIM ADJUST

Adjusts the brightness of annunciators POS1 - POS40 in DIM mode (Excluding POS21 when configured as CAUTION PANEL).



Example  
Annunciators



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### 2) BACK LIGHT ADJUST

Adjusts the backlighting brightness of the panel lines & legends



Panel Area

### 2.4.2 Airframe Connections

Note the connections to J1 and J2 circular connectors. They both have the same shell keying, however the pin orientations are different to prevent cross cable connections. Ensure care is taken when mating the cables to the pins.

## 2.5 Legend Replacement

The MCP01-130N legends may be replaced by the Austrian Air Force with replacement legends from the factory.

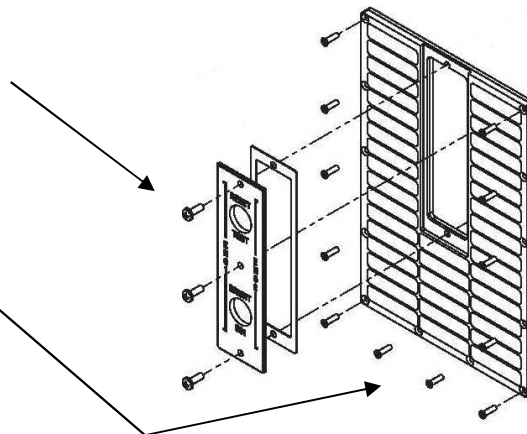
Materials required to perform legend replacement: Loctite 425

### 2.5.1 Disassembly

**Note:** MCP01-130N has screws that are installed with Loctite 425 and will require a break-loose torque to be applied to remove.

Remove and set aside three panhead screws securing the Front Panel and Gasket to the unit. Remove and set aside the Front Panel and Gasket.

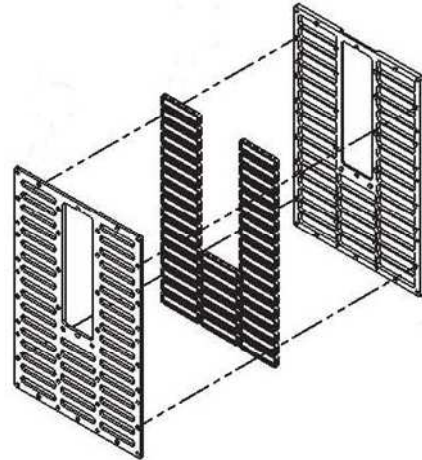
Remove and set aside twelve flathead screws securing the Legend Housing to the unit. Remove and set aside the Legend Housing.





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Set the Legend Housing face down and carefully remove the Lens Isolation Gasket from the pegs on the rear of the Legend Housing.



Replace required legend(s).

### 2.5.2 Reassembly

Install the Lens Isolation Gasket onto the back of the Legend housing. Ensure the gasket is fully seated around all mounting pegs. The Lens Isolation Gasket has recesses for the pegs to snap into. The side with peg recesses should face the operator when being installed. The flush side of the gasket should face towards the housing.

Place a small amount of Loctite 425 into the threaded holes in the Legend Housing that correspond to the three panhead screws and twelve flathead screws. Recommend not attempting to apply directly from the bottle but indirectly using a drip held on the end of a small pointed object.

Install and secure the Legend Housing to the unit with twelve flathead screws. Do not overtighten screws, Legend Housing should not deflect or warp when installed.

Install and secure the Front Panel and Gasket onto the unit with three panhead screws.

### 2.6 Continued Airworthiness

Maintenance of the MCP01-130N Master Caution Panel is 'on condition' only. Periodic maintenance of this product is not required.

### 2.7 Installation Drawings

Use of the "#" symbol in the REV. column indicates that the document is listed elsewhere in the manual. Refer to the applicable AEM Part No. to locate the referenced document.

DOCUMENT	REV	DESCRIPTION	TYPE	SERIAL NO.
MCP01-130N-403-0	1.00	AB 212 Master Caution Panel	Interconnect	1064 and Up
MCP01-130N-405-0	1.00	AB 212 Master Caution Panel	Connector Map	1064 and Up
MCP01-130N-922-0	1.00	AB 212 Master Caution Panel	Mechanical Installation	1064 and Up

Section 2.0 ends following above documents




## MCP01-130N INSTALLATION NOTES

NOTES:

1. THE MCP01-130N IS INTENDED TO BE INSTALLED IN THE AB 212 HELICOPTER AS A DIRECT REPLACEMENT FOR THE ORIGINAL GRIMES MASTER CAUTION PANEL. THE MCP01-130N IS A "PLUG AND PLAY" DEVICE, AND IS INTENDED TO BE CONNECTED TO THE EXISTING MCP WIRING HARNESS IN THE HELICOPTER WITH THE ADDITION OF THE CATS EYE DIODE MODIFICATION.
  
2. THE INTERCONNECT INFORMATION SHOWN ON PAGE 2 AND 3 ARE FOR REFERENCE ONLY, AND PROVIDE INFORMATION TO ASSOCIATE THE SPECIFIC PLUG AND PIN NUMBER TO ITS ASSOCIATED MCP01-130N LEGEND POSITION. PLEASE REFER TO THE APPLICABLE AB212 WIRING DIAGRAM FOR COMPLETE INFORMATION.

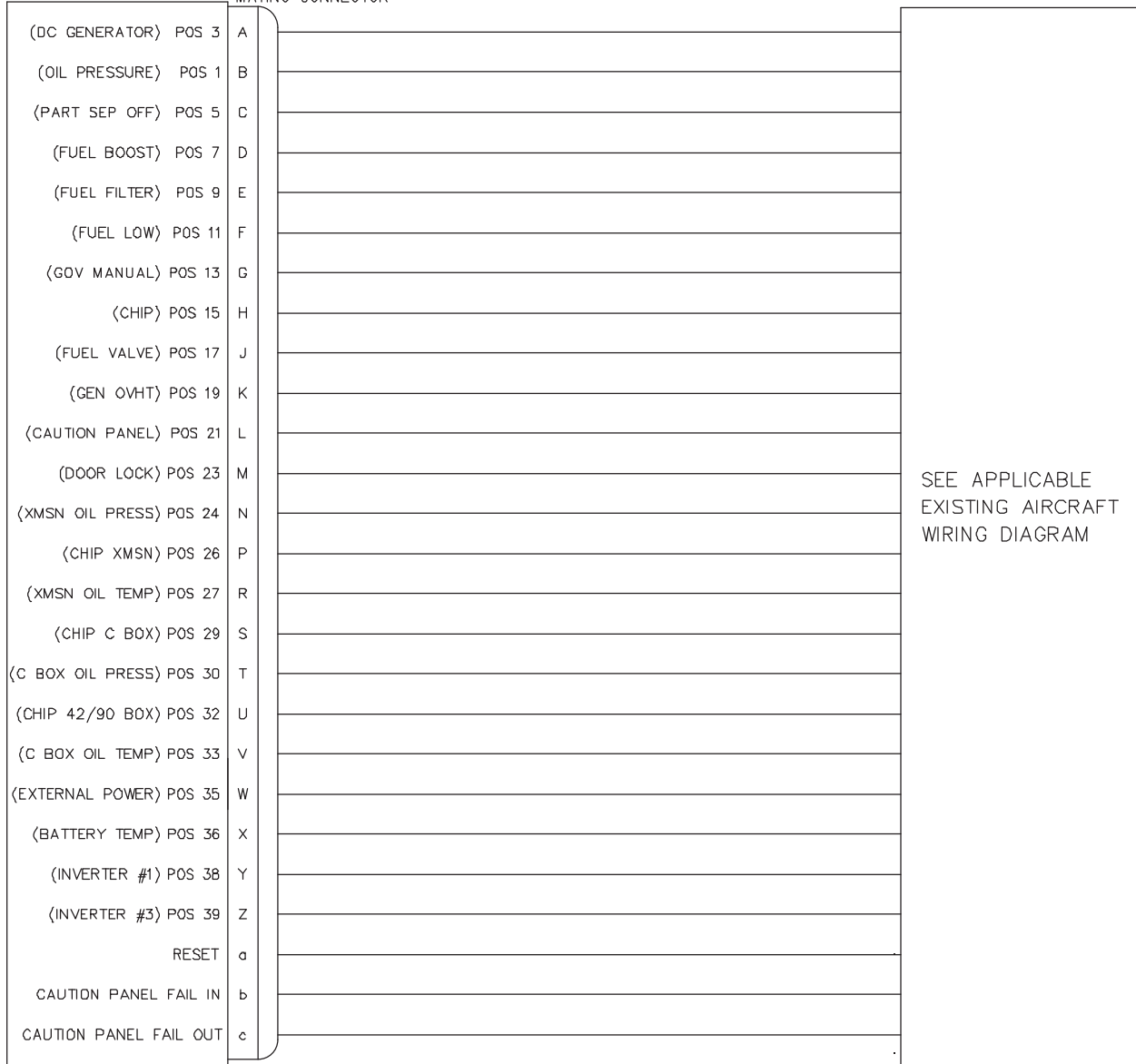
DEFINITIONS:




- N/C: NO CONNECTION. THE PIN IS NOT CONNECTED TO ANYTHING INTERNALLY, AND THEREFORE SHALL HAVE NO CONNECTION EXTERNALLY.
- N/C SPARE: NO CONNECTION INTERNALLY, BUT A SPARE WIRE SHALL BE INSTALLED IN THE WIRE HARNESS.
- RESERVED: MAY BE CONNECTED AND USED IN THE FUTURE. THE CIRCUITRY MAY BE PRESENT OR ADDED TO ACTIVATE THE FUNCTION. THE PIN MAY BE USED FOR TEST PURPOSES. THERE IS NO EXTERNAL CONNECTION.
- RESERVED SPARE: (RSV SP) RESERVED, BUT INSTRUCTIONS SHALL BE FOLLOWED TO ACTIVATE THE CIRCUITRY. A SPARE WIRE SHALL BE INSTALLED IN THE WIRE HARNESS.

	NAME	DATE	UNLESS OTHERWISE SPECIFIED:			KELOWNA BC CANADA (250)-763-1088 WWW.AEM-CORP.COM
DRAWN	NB	21-MAR-19	DIMENSIONS ARE IN INCHES [MM]	TITLE: <b>AB 212 MASTER CAUTION PANEL INTERCONNECT</b>		
CHECKED		21-MAR-19	TOLERANCES:			
APPROVED		26-Mar-19	FRACTIONAL _____ ±0.0625" ANGULAR _____ ±0.5° TWO DECIMAL PLACE _____ ±0.010" THREE DECIMAL PLACE _____ ±0.005"			
<b>CONFIDENTIAL AND PROPRIETARY</b> THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF ANODYNE ELECTRONICS MANUFACTURING. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF ANODYNE ELECTRONICS MANUFACTURING IS PROHIBITED.			MATERIAL:	PAPER SIZE: <b>A</b> CAGE CODE: <b>L9015</b> PART No.: <b>MCP01-130N</b> REVISION: <b>1.00</b>		
			FINISH:	SCALE: 1:1    DO NOT SCALE DRAWING    DRAWING No.: 403-0		SHEET: 1 of 3
			N/A			
			N/A			

MCP01-130N  
J1

P43  
26 PIN FEMALE CIRCULAR  
MATING CONNECTOR



	NAME	DATE	UNLESS OTHERWISE SPECIFIED:	 <b>ANODYNE ELECTRONICS MANUFACTURING CORP.</b>	KELOWNA BC CANADA (250)-763-1088 WWW.AEM-CORP.COM
DRAWN	NB	21-MAR-19	DIMENSIONS ARE IN INCHES [MM]		
CHECKED		21-MAR-19	TOLERANCES: FRACTIONAL _____ ±0.0625" ANGULAR _____ ±0.5° TWO DECIMAL PLACE _____ ±0.010" THREE DECIMAL PLACE _____ ±0.005"		
APPROVED		26-Mar-19	MATERIAL:	TITLE: AB 212 MASTER CAUTION PANEL INTERCONNECT	
<b>CONFIDENTIAL AND PROPRIETARY</b> THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF ANODYNE ELECTRONICS MANUFACTURING. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF ANODYNE ELECTRONICS MANUFACTURING IS PROHIBITED.			FINISH:	PAPER SIZE: A	REVISION 1.00
			N/A	CAGE CODE L9015	
			N/A	PART No.: MCP01-130N	
				SCALE: 1:1	DRAWING No.: 403-0
				DO NOT SCALE DRAWING	SHEET: 2 of 3

MCP01-130N  
J2




P42  
26 PIN 60° FEMALE CIRCULAR  
MATING CONNECTOR

(DC GENERATOR) POS 4	A	
(OIL PRESSURE) POS 2	B	
(PART SEP OFF) POS 6	C	
(FUEL BOOST) POS 8	D	
(FUEL FILTER) POS 10	E	
(FUEL LOW) POS 12	F	
(GOV MANUAL) POS 14	G	
(CHIP) POS 16	H	
(FUEL VALVE) POS 18	J	
(GEN OVHT) POS 20	K	
(HYDRAULIC) POS 22	L	
(ROTOR BRAKE) POS 25	M	
(HOOK UNSAFE) POS 28	N	
(HEATER AIR LINE) POS 31	P	
(FUEL XFEED) POS 34	R	
(BATTERY) POS 37	S	
(INVERTER #2) POS 40	T	
TEST 1	U	
TEST 2	V	
DIMMING RELAY	W	
MASTER CAUTION LT OUT	X	
SYSTEM GND	Y	
SYSTEM POWER IN	Z	
EXT GND DIM CKT CONT	a	
PANEL LIGHT CONT	b	
TEST 3	c	

SEE APPLICABLE  
EXISTING AIRCRAFT  
WIRING DIAGRAM

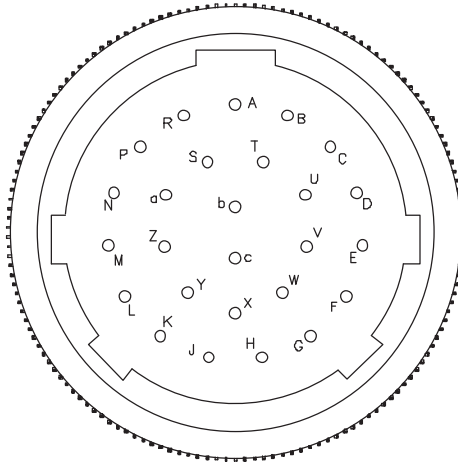
NOTES:

CONNECTOR J3 IS NOT FUNCTIONAL ON MCP01-130N UNITS.  
CONNECTOR J3 IS COVERED FROM FACTORY WITH A DUST CAP.

	NAME	DATE	UNLESS OTHERWISE SPECIFIED:	 <b>ANODYNE ELECTRONICS MANUFACTURING CORP.</b>	KELOWNA BC CANADA (250)-763-1088 WWW.AEM-CORP.COM
DRAWN	NB	21-MAR-19	DIMENSIONS ARE IN INCHES [MM]		
CHECKED		21-MAR-19	TOLERANCES: FRACTIONAL _____ ±0.0625" ANGULAR _____ ±0.5° TWO DECIMAL PLACE _____ ±0.010" THREE DECIMAL PLACE _____ ±0.005"		
APPROVED		26-Mar-19	MATERIAL:	TITLE: AB 212 MASTER CAUTION PANEL INTERCONNECT	
<b>CONFIDENTIAL AND PROPRIETARY</b> THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF ANODYNE ELECTRONICS MANUFACTURING. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF ANODYNE ELECTRONICS MANUFACTURING IS PROHIBITED.			FINISH:	PAPER SIZE: A	REVISION 1.00
			N/A	CAGE CODE L9015	
			N/A	PART No.: MCP01-130N	
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				DO NOT SCALE DRAWING	DRAWING No.: 403-0

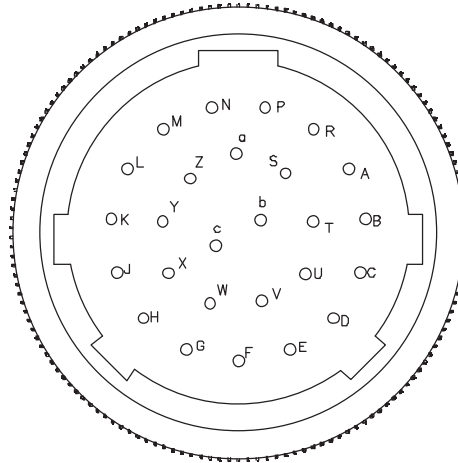


P43  
26 PIN FEMALE CONTACT CIRCULAR  
MATING CONNECTOR






A	POS 3 (DC GENERATOR)
B	POS 1 (OIL PRESSURE)
C	POS 5 (PART SEP OFF)
D	POS 7 (FUEL BOOST)
E	POS 9 (FUEL FILTER)
F	POS 11 (FUEL LOW)
G	POS 13 (GOV MANUAL)
H	POS 15 (CHIP)
J	POS 17 (FUEL VALVE)
K	POS 19 (GEN OVHT)
L	POS 21 (CAUTION PANEL)
M	POS 23 (DOOR LOCK)
N	POS 24 (XMSN OIL PRESS)
P	POS 26 (CHIP XMSN)
R	POS 27 (XMSN OIL TEMP)
S	POS 29 (CHIP C BOX)
T	POS 30 (C BOX OIL PRESS)
U	POS 32 (CHIP 42/90 BOX)
V	POS 33 (C BOX OIL TEMP)
W	POS 35 (EXTERNAL POWER)
X	POS 36 (BATTERY TEMP)
Y	POS 38 (INVERTER #1)
Z	POS 39 (INVERTER #5)
a	RESET
b	CAUTION PANEL FAIL IN
c	CAUTION PANEL FAIL OUT

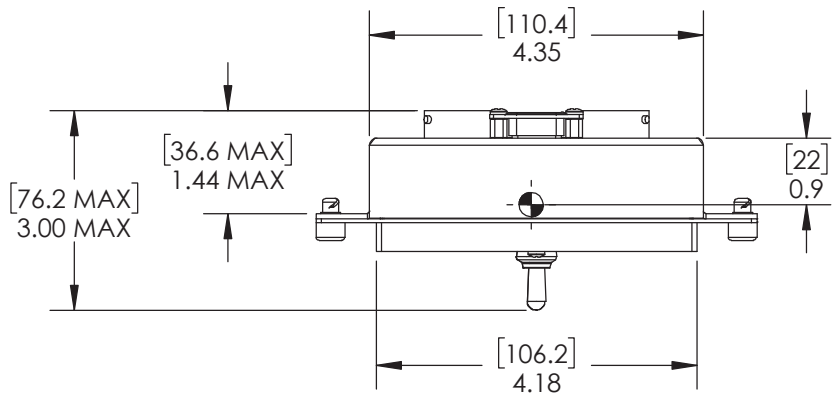
P42  
26 PIN 60° FEMALE CONTACT CIRCULAR  
MATING CONNECTOR



A	POS 4 (DC GENERATOR)
B	POS 2 (OIL PRESSURE)
C	POS 6 (PART SEP OFF)
D	POS 8 (FUEL BOOST)
E	POS 10 (FUEL FILTER)
F	POS 12 (FUEL LOW)
G	POS 14 (GOV MANUAL)
H	POS 16 (CHIP)
J	POS 18 (FUEL VALVE)
K	POS 20 (GEN OVHT)
L	POS 22 (HYDRAULIC)
M	POS 25 (ROTOR BRAKE)
N	POS 28 (HOOK UNSAFE)
P	POS 31 (HEATER AIR LINE)
R	POS 34 (FUEL XFEED)
S	POS 37 (BATTERY)
T	POS 40 (INVERTER #2)
U	TEST 1
V	TEST 2
W	DIMMING RELAY
X	MASTER CAUTION LT OUT
Y	SYSTEM GND
Z	SYSTEM POWER IN
a	EXT GND DIM CKT CONT
b	PANEL LIGHT CONT
c	TEST 3

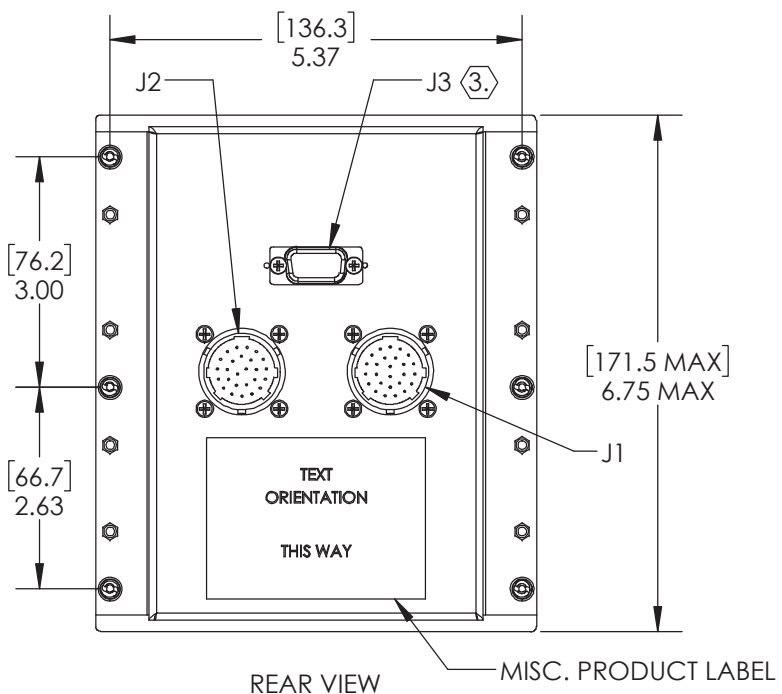
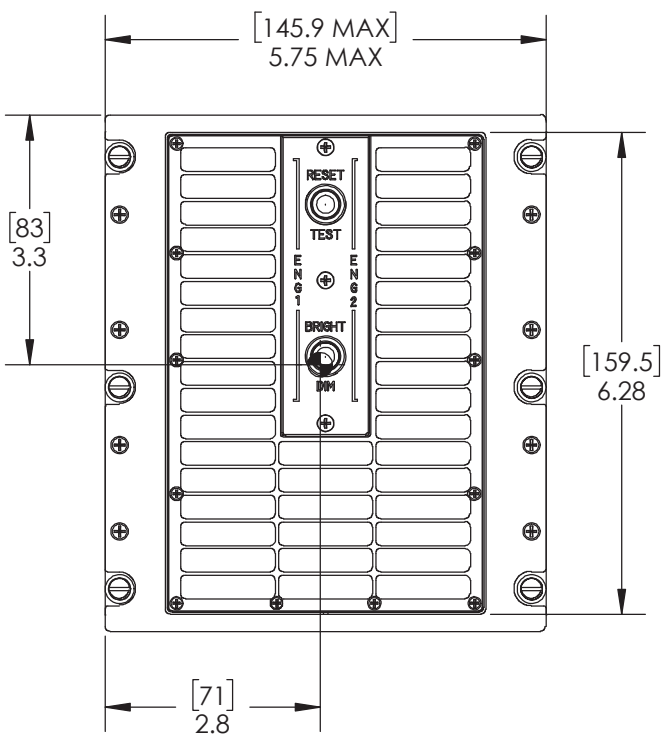
VIEW IS FROM REAR OF AIRFRAME CONNECTOR

	NAME	DATE	UNLESS OTHERWISE SPECIFIED:			KELOWNA BC CANADA (250)-763-1088 WWW.AEM-CORP.COM	
DRAWN	NB	19-MAR-19	DIMENSIONS ARE IN INCHES [MM]				
CHECKED		21-MAR-19	TOLERANCES: FRACTIONAL _____ ±0.0625" ANGULAR _____ ±0.5°	TITLE: <b>AB 212 MASTER CAUTION PANEL CONNECTOR MAP</b>			
APPROVED		26-Mar-19	TWO DECIMAL PLACE _____ ±0.010" THREE DECIMAL PLACE _____ ±0.005"				
<b>CONFIDENTIAL AND PROPRIETARY</b> THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF ANODYNE ELECTRONICS MANUFACTURING. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF ANODYNE ELECTRONICS MANUFACTURING IS PROHIBITED.			MATERIAL:	NA		PAPER SIZE: A    CAGE CODE: L9015    PART No.: MCP01-130N    REVISION: 1.00	
			FINISH:	NA			



NOTES:

1. WEIGHT: 1.75 lb MAX [0.80 kg MAX]
2. DENOTES CENTER OF GRAVITY EST.
3. J3 NOT FUNCTIONAL FOR MCP01-130N, CONNECTOR DUST CAP INSTALLED.



	NAME	DATE	UNLESS OTHERWISE SPECIFIED:
DRAWN	NB	26-MAR-19	DIMENSIONS ARE IN INCHES [MM]
CHECKED		26-MAR-19	TOLERANCES:
APPROVED		27-Mar-19	FRACTIONAL _____ ±0.0625"
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TITLE:				<b>AB 212 MASTER CAUTION PANEL          MECHANICAL INSTALLATION</b>		REVISION	
PAPER SIZE:		CAGE CODE	PART No. :			MCP01-130N	
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## MCP01-130N Master Caution Panel Installation and Operation Manual

### Section 3.0 Operation

#### 3.1 Introduction

Information in this section describes the function and operation for the MCP01-130N Master Caution Panel.

#### 3.2 General

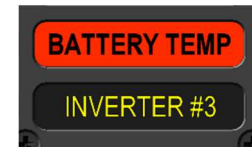
##### 3.2.1 Annunciator Lighting

When illuminated, Caution legends are yellow text on black background and Warning legends are black text on red background.

All annunciator legends are daylight readable (>150 fL) in BRIGHT mode.

All annunciator legends, except CAUTION PANEL, operate at two levels of brightness, BRIGHT and DIM. The CAUTION PANEL annunciator only operates at BRIGHT.

Refer to section 2.4 for user accessible adjustments.



##### 3.2.2 Panel Lighting

The front panel text and lines found near the RESET/TEST and BRIGHT/DIM switches utilizes NVIS compliant backlighting and is dimmable. Dimming of the front panel text and lines approximates an incandescent equivalent dimming curve.

The panel lighting is controlled by the aircraft dimming bus. The MCP01-130N is factory configured for 5Vdc lighting.

Refer to section 2.4 for user accessible adjustments.



##### 3.2.3 Caution/Warning Signal Detection

The MCP01-130N monitors the status of 39 CAUTION/WARNING input signals.

Upon detection of a CAUTION/WARNING signal, the MCP01-130N lights the corresponding annunciator legend.

While a CAUTION/WARNING signal is active, the MCP01-130N activates the external MASTER CAUTION annunciator until RESET is activated. The MCP01-130N annunciator legends and external MASTER CAUTION annunciator are only active while the unit is detecting a valid CAUTION/WARNING signal.

If a valid CAUTION/WARNING signal is still active and the RESET is activated, only the external MASTER CAUTION annunciator extinguishes, the MCP01-130N annunciator remains lit.



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The MCP01-130N contains factory set fixed and configuration switches which select the type of trigger signal to monitor. The following details the trigger selection for each input and the default setting:

Position	Trigger Selection	Default
POS1	NEG./NULL	NEG
POS2	NEG./NULL	NEG
POS3	NEG./NULL	NULL
POS4	NEG./NULL	NULL
POS5	Fixed	NULL
POS6	Fixed	NULL
POS7	Fixed	NEG
POS8	Fixed	NEG
POS9	Fixed	NEG
POS10	Fixed	NEG
POS11	Fixed	NEG
POS12	Fixed	NEG
POS13	Fixed	POS
POS14	Fixed	POS
POS15	Fixed	NEG
POS16	Fixed	NEG
POS17	NEG./POS./NULL	NULL
POS18	NEG./POS./NULL	NULL
POS19	NEG./POS./NULL	NEG
POS20	NEG./POS./NULL	NEG
POS21	NEG./POS./NULL	Reserved*
POS22	NEG./POS./NULL	NEG
POS23	Fixed	NEG
POS24	Fixed	NEG
POS25	Fixed	NEG
POS26	Fixed	NEG
POS27	Fixed	NEG
POS28	NEG./POS./NULL	NEG
POS29	Fixed	NEG
POS30	Fixed	NEG
POS31	Fixed	NEG
POS32	Fixed	NEG
POS33	Fixed	NEG
POS34	NEG./POS./NULL	NULL
POS35	NEG./POS./NULL	NEG
POS36	NEG./POS./NULL	NEG
POS37	Fixed	NEG
POS38	NEG./POS./NULL	NEG
POS39	NEG./POS./NULL	NEG
POS40	NEG./POS./NULL	NEG

\* - The MCP01-130N POS21 is reserved for use with the CAUTION PANEL fail circuitry.



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### 3.2.4 Bright Mode

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When the front panel BRIGHT/DIM switch is momentarily pressed to BRIGHT, the MCP01-130N latches all annunciators to BRIGHT mode. The MCP01-130N also provides a ground at the DIMMING RELAY output pin.

By default, the MCP01-130N is in BRIGHT mode at initial application of power.

### 3.2.5 Dim Mode

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When the front panel BRIGHT/DIM switch is momentarily pressed to DIM, the MCP01-130N latches all annunciators to DIM mode (provided the external pilot instrument lights rheostat is in the ON position). In DIM mode, the MCP01-130N disables the ground at the DIMMING RELAY output pin.

If the external pilot instrument lights rheostat is OFF, the MCP01-130N will not enter DIM mode.

MCP01-130N reverts to BRIGHT mode if the front panel BRIGHT/DIM switch is momentarily pressed to BRIGHT or if the external pilot instrument lights rheostat is OFF.

### 3.2.6 Caution Panel Fail

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The MCP01-130N lights the CAUTION PANEL annunciator legend in the event that the internal voltage supplied to all other annunciators falls below 75% of the voltage present at the CAUTION PANEL FAIL IN input pin.

If the CAUTION PANEL annunciator legend lights, the MCP01-130N connects the CAUTION PANEL FAIL IN input pin voltage to the CAUTION PANEL FAIL OUT output pin.

The Caution Panel fail circuitry, including the annunciator, is powered from the CAUTION PANEL FAIL IN input voltage (Essential DC Bus). Therefore, the CAUTION PANEL annunciator is always in BRIGHT mode.

### 3.2.7 GOV MANUAL Power

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If SYSTEM POWER is lost (PIN Z of J2), the MCP01-130N may be powered via either or both GOV MANUAL Legend Positions (PIN G of J1 & Pin G of J2).



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### 3.3 Controls and Indicators

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The MCP01-130N contains 2 momentary DPDT center-off switches. One switch is RESET/TEST and the other switch is BRIGHT/DIM. The function of these switches is as follows:

#### 3.3.1 RESET/TEST

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**Reset:** Turns off the external MASTER CAUTION annunciator. It does not extinguish any currently lit annunciator legends. Subsequent detection of CAUTION/WARNING signals re-activates the external MASTER CAUTION annunciator. There is also an external RESET pin that can be used with the same functionality as the MCP01-130N front panel RESET switch.

**Test:** Simulates a CAUTION/WARNING signal at all detection inputs for the duration that RESET/TEST is held at TEST. The TEST switch also tests the CAUTION PANEL fail circuitry and provides a positive output voltage at all three TEST output pins. If the external MASTER CAUTION annunciators are currently not lit, pressing TEST lights the external MASTER CAUTION annunciators only for the duration that TEST is pressed.



#### 3.3.2 BRIGHT/DIM

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**Bright:** Legends and external lamps are illuminated brightly. Typically used for day time operation.

**Dim:** Legends and external lamps are illuminated dimly. Typically used for night time operation.



End of Section 3.0

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