

ROUTINE ACTION

**DEPARTMENT OF THE NAVY
NAVAL AIR SYSTEMS COMMAND
RADM WILLIAM A MOFFETT BUILDING
47123 BUSE ROAD, BLDG 2272
PATUXENT RIVER, MD 20670-1547**

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SUPPORT EQUIPMENT CHANGE NO. 5824 (TD CODE 62)

SUBJECT: UPGRADE OF MOBILE FACILITY ECU COOLING CABLE CIRCUIT TO 40 AMPS TO ACCOMMODATE R134A ECU PN 1559AS400-1, (WUC GEC60)

REFERENCES:

- (a) NAWCAD LKE Engineering Change Proposal 6649-07-014, dated 5 December 2007.
- (b) NAVAIR CCB Approval Number 2008AIR0110693, dated 19 Sep 2008.
- (c) NAVAIR 19-25-177 – Operation and Intermediate Maintenance with Illustrated Parts Breakdown Mobile Facility Technical Manual, PN 1339AS500-1, PN 1339AS501-1, PN 1339AS700-1, PN 1339AS701-1, PN 1339AS900-2, PN 1339AS1000-1, PN 1339AS1101-1 - Basic 1 March 1995; Rapid Action Change 7, dated 30 April 2005.
- (d) NAVAIR 17-1-573 – Operation and Intermediate Maintenance with Illustrated Parts Breakdown Environmental Control Unit A/E32C-45A PN 1559AS400-1, dated 1 March 2009.
- (e) NAVAIR 17-600-762-1 – Preoperational Checklist Environmental Control Unit A/E32C-45a, P/N 1559AS400-1, dated 1 March 2009.
- (f) NAVAIR 19-60-83 – Operation and Intermediate Maintenance with Illustrated Parts Breakdown Environmental Control Unit A/E32C-45 PN 1559AS100-1, dated 1 October 1996.
- (g) NAVAIR 19-600-141-1 – Preoperational Checklist, Environmental Control Unit A/E32C-45, dated 1 October 1996.

ENCLOSURES: (1) Thermostat Bracket Modification Details, Wiring Diagrams And Decal Installation.

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DOCUMENTATION AFFECTED:

1. Technical Manual:

<u>NUMBER</u>	<u>TITLE</u>	<u>DATE</u>
NAVAIR 19-25-177	Operation and Intermediate Maintenance with Illustrated Parts Breakdown Mobile Facility	30 APR 2005

2. Drawings:

<u>CAGE CODE</u>	<u>DRAWING NO.</u>	<u>NOMENCLATURE</u>	<u>DRAWING REVISION</u>
30003	1339AS364	POWER DISTRIBUTION PANEL	H
30003	1339AS365	POWER DISTRIBUTION PANEL	E
30003	1339AS500	MOBILE FACILITY TYPE A SIDE OPENING	K
30003	1339AS501	MOBILE FACILITY TYPE B SIDE OPENING	K
30003	1339AS700	MOBILE FACILITY TYPE A TURNKEY	J
30003	1339AS701	MOBILE FACILITY TYPE B TURNKEY	H
30003	1339AS740	SCHEMATIC DIAGRAM TYPE A MOBILE FACILITY	E
30003	1339AS741	SCHEMATIC DIAGRAM TYPE B MOBILE FACILITY	F
30003	1339AS758	PLATE CONNECTOR MOBILE FACILITY TURNKEY	-
30003	1339AS866	CABLE, AIR CONDITIONER MOBILE FACILITY TURNKEY	C
30003	1339AS893	BRACKET, OFFSET, THERMOSTAT MOBILE FACILITY TURNKEY	B
30003	1339AS1000	MOBILE FACILITY SIDE OPENING WITH DOUBLE DOORS	C
30003	1339AS1230	CABLE, POWER MOBILE FACILITY TURNKEY	A
30003	1339AS1231	CABLE, POWER MOBILE FACILITY TURNKEY	A
30003	1339AS1232	CABLE, AIR CONDITIONER MOBILE FACILITY TURNKEY	A
30003	WL1339AS741	WIRE LIST TYPE A MOBILE FACILITY TURKEY	E
30003	WL1339AS740	WIRE LIST TYPE B MOBILE FACILITY TURKEY	E

PURPOSE OF DIRECTIVE: The purpose of this directive is to upgrade the existing 30 amp ECU cooling circuit on fielded Mobile Facilities of the following types:

<u>PART NO.</u>	<u>NOMENCLATURE</u>
1339AS500-1	MOBILE FACILITY TYPE A SIDE OPENING
1339AS501-1	MOBILE FACILITY TYPE B SIDE OPENING
1339AS700-1	MOBILE FACILITY TYPE A TURNKEY
1339AS701-1	MOBILE FACILITY TYPE B TURNKEY
1339AS1000-1	MOBILE FACILITY SIDE OPENING WITH DOUBLE DOORS

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The cooling circuit upgrade is required to accommodate the increased current requirement for the 1559AS400-1 R134a ECU. This SEC can be installed with either a R-22 ECU PN 1559AS100-1 or the new R-134a ECU PN 1559AS400-1.

2. This Technical Directive (TD) was proposed by Reference (a) and approved by Reference (b).

APPLICATION:

1. Basic Equipment:

a. The following shall be modified by Intermediate Maintenance Activities.

NOTE

SEC 5824 does not apply to the following Mobile Facilities configurations:
FS-01 and HY-05B. SEC 5824 does not apply to Mobile Facilities manufactured after September 2008. Mobile Facilities manufactured after September 2008 will be delivered with a 40 amp cooling circuit.

<u>QTY</u>	<u>SERIAL NO.</u>	<u>TEC</u>	<u>CAGE</u>	<u>PART NO.</u>	<u>NSN</u>
282	UNKNOWN	GMJU	30003	1339AS500-1	5411-01-355-4320
236	UNKNOWN	GMJV	30003	1339AS501-1	5411-01-355-4321
1730	UNKNOWN	GMJR	30003	1339AS700-1	5411-01-355-4322
1989	UNKNOWN	GMJS	30003	1339AS701-1	5411-01-355-4323
40	UNKNOWN	GMJ7	30003	1339AS1000-1	5411-01-355-4319

2. Trainers: Not applicable.

3. Spares: Not applicable.

COMPLIANCE:

1. Basic Equipment:

a. Incorporation of this directive shall be accomplished by the Intermediate Maintenance Activity concurrent with or prior to the initial installation of R-134a ECU PN 1559AS400-1. Compliance will be accomplished NLT 30 June 2013.

MAN-HOURS REQUIRED:

<u>KIT IDENT NO.</u>	<u>KIT NO.</u>	<u>NO. OF MEN</u>	<u>SKILL</u>	<u>TOTAL MAN-HOURS</u>
5824LKA144294SX	A1	2	Aircraft Maintenance Support Equipment Electrician/Refrigeration Technician	5
5824LKA244295SX	A2	2	Aircraft Maintenance Support Equipment Electrician/Refrigeration Technician	5

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SUPPLY DATA:

1. Requirements for basic equipment:

a. Kits Required:

<u>QTY</u>	<u>PART NUMBER</u>	<u>CAGE</u>	<u>NOMENCALTURE</u>	<u>SM&R</u>	<u>NSN</u>	<u>SOURCE</u>
4420	5824LKA144294SX	30003	KIT A1	20" x 20" x 4"	12 lbs	(1)

Kit Consists of:

<u>QTY</u>	<u>PART NUMBER</u>	<u>CAGE</u>	<u>NOMENCALTURE</u>	<u>SM&R</u>	<u>NSN</u>
1	1339AS1232-1	30003	CABLE, AIR CONDITIONER	MGDZZ	N/A
1	1339AS1231-1	30003	CABLE, AIR POWER	MGDZZ	N/A
1	1339AS1230-1	30003	CABLE, AIR POWER (THERMOSTAT)	MGDZZ	N/A
1	1339AS857-2	30003	CONNECTOR, INSULATED	PAGZZ	5975-00-087-2726
2	1339AS762-1 (S6-75)	30003	NUT, BLIND, RIVET	PAGZZ	5310-00-079-2522
1	QOB340	14280	40 AMP THREE POLE CIRCUIT BREAKER	PAGZZ	5925-00-785-4251
1 pack			CABLE TIE	PAGZZ	5975-00-156-3253
3	MS25036-115	96906	LUG, TERMINAL	PAGZZ	5940-00-143-4794
1 roll	AA55809-A5A2		RED TAPE	PAGZZ	N/A
1	1339AS1240-1	30003	DECAL, HEAT	MDGZZ	N/A
1	1339AS1240-2	30003	DECAL, COOL	MDGZZ	N/A

<u>QTY</u>	<u>PART NUMBER</u>	<u>CAGE</u>	<u>NOMENCALTURE</u>	<u>SM&R</u>	<u>NSN</u>	<u>SOURCE</u>
474	5824LKA244295SX	30003	KIT A2	20" x 20" x 4"	15 lbs	(1)

Kit Consists of:

<u>QTY</u>	<u>PART NUMBER</u>	<u>CAGE</u>	<u>NOMENCALTURE</u>	<u>SM&R</u>	<u>NSN</u>
1	1339AS1232-3	30003	CABLE, AIR CONDITIONER	MGDZZ	N/A
1	1339AS1231-1	30003	CABLE, AIR POWER	MGDZZ	N/A
1	1339AS1230-1	30003	CABLE, AIR POWER (THERMOSTAT)	MGDZZ	N/A
1	1339AS857-2	30003	CONNECTOR, INSULATED	PAGZZ	5975-00-087-2726
2	1339AS762-1 (S6-75)	30003	NUT, BLIND, RIVET	PAGZZ	5310-00-079-2522
1	QOB340	14280	40 AMP THREE POLE CIRCUIT BREAKER	PAGZZ	5925-00-785-4251
1 pack			CABLE TIE		5975-00-156-3253
3	MS25036-115	96906	LUG, TERMINAL	PAGZZ	5940-00-143-4794
1 roll	AA55809-A5A2		RED TAPE		N/A
1	1339AS1240-1	30003	DECAL, HEAT	MDGZZ	N/A
1	1339AS1240-2	30003	DECAL, COOL	MDGZZ	N/A

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b. Support Equipment Required:

<u>QTY</u>	<u>PART NUMBER</u>	<u>CAGE</u>	<u>NOMENCLATURE</u>	<u>DISPOSITION</u>	<u>SOURCE</u>
1	7211BB-3/4 or equal	26289	¾ trade size (1.115” actual size) knockout punch	N/A	(2)
1	C845-632 or equal	3H464	Rivnut Installation tool 6- 32	N/A	(2)

c. Other Materials Required: Not applicable.

d. Source of Supply:

(1) Requisition via channels and procedures established by AIR 6.8.5. See CKAKITS.com for kit manager points of contact and requirements.

(2) Tool Room or Normal Supply Channel.

e. Parts/materials removed and disposition:

<u>QTY</u>	<u>PART NUMBER</u>	<u>CAGE</u>	<u>NOMENCLATURE</u>	<u>SM&R</u>	<u>NSN</u>	<u>DISPOSITION</u>
1	1339AS867-1, -3	30003	Cable, Air Conditioner (Cool)	AGGGG	N/A	(A)
1	QOB330	63637	Circuit Breaker, 30 amp, 3 pole	PAGZZ	5925-00-728-1969	(A)
1	3302M	56501	Connector, Insulated	PAGZZ	5975-00-935-2293	(A)
1	1339AS883-1	30003	Cable, Power (Cool)	AGGGG	N/A	(A)
1	1339AS885-1	30003	Cable, Power (Thermostat)	AGGGG	N/A	(A)
1	1339AS890-1	30003	Guard, Thermostat	MDGZZ	N/A	(A)
1	LHP-AH22	18059	Thermostat	PAGZA	5930-01-298-3529	(A)

(A) Dispose IAW local procedures.

REIDENTIFICATION OF ITEMS OF SUPPLY: Not applicable.

DETAILED INSTRUCTIONS:

NOTE

This SEC covers the following four scenarios for installing the ECU Cable SEC Kit:
 Installation of 13’ kit in an R-134a application (see para a. under 1. Basic Equipment)
 Installation of 22’ kit in an R-134a application (see para b. under 1. Basic Equipment)
 Installation of 13’ kit in an R-22 application (see para c. under 1. Basic Equipment)
 Installation of 22’ kit in an R-22 application (see para d. under 1. Basic Equipment)

1. Basic Equipment:

Kit A1 – R-134a First Position Installation 13’ Cable

a. Installation of SEC kit in Mobile Facility with ECU during initial install of R-134a ECU, PN 1559AS400-1 in MFA or MFB, and the “first position” ECU location (closest to the front / power panel) in SOMFA, SOMFB and SOMFBMOD shall be IAW steps (1) – (30) below.

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- (1) Verify there is presently a 30 amp ECU cooling circuit installed in MF. If there is already a 40 amp ECU cooling circuit installed this SEC is not required.

NOTE

30 amp cooling circuit cables will have either 10 AWG or 12 AWG conductors

WARNING

To prevent injury or death, MF 60 Hz and 400 Hz power sources shall be secured in the off (DEENERGIZED) position, be disconnected from MF, and shall have warning tags attached. Only the individual placing warning tags shall remove tags and turn on (ENERGIZE) the power source. Warning tags shall be signed and dated and shall bear the following or similar statement: "Power source shall not be turned on (ENERGIZED) or connected to MF except under direct orders of the undersigned".

- (2) Remove and discard existing 30 amp cooling circuit cable, PN 1339AS867-1 (Reference (c), WP 019 00 Figure 2 Index 21), IAW Reference (c), WP 019 00 para. 10. Only remove the 30 amp cooling cable, leaving the existing 40 amp heating cable in place. Remove any cable ties required in order to remove this cable taking care not to damage any of the cables/wires.

NOTE

As a part of configuring the MF the existing 30 amp ECU cooling circuit breaker may be located in a different position in the circuit breaker panel than specified in step (3) below. The circuit breaker to be removed is the one the cable was disconnected from in step (2) above.

- (3) Remove existing cooling circuit 30 amp circuit breaker (Reference (c), WP 022 00 Figure 2 Index 9 or Figure 3 Index 5) IAW Reference (c), WP 022 00 para. 6 and discard circuit breaker.
- (4) Install new cooling circuit 40 amp circuit breaker, PN QOB340, in the location that the 30 amp circuit breaker was removed from in step (3) above IAW Reference (c), WP 022 00 para. 10.

NOTE

Most MF's built prior to 1996 used a smaller cable clamp for the cooling circuit cable than the heating circuit cable. If the cable clamp for the cooling circuit is the same size as the cable clamp for the 40 amp heating circuit cable skip steps (6), through (8) below.

- (5) Check size of cable clamp.
- (6) Remove cable clamp (Reference (c), WP 006 00 Figure 4 Index 7, WP 007 00 Figure 4 Index 7, WP 009 00 Figure 3 Index 7, WP 010 00 Figure 3 Index 7 or WP 011 00 Figure 3 Index 7 as applicable) from circuit breaker enclosure.
- (7) Using 3/4" trade size (1.115 actual size) knockout punch make hole in the circuit breaker enclosure centered in the hole from which the cable clamp was removed from in step (6) above.
- (8) Install new clamp, PN 1339AS857-2 (3033M), in 3/4" trade size (1.115 actual size) hole in the circuit breaker enclosure.
- (9) Prior to installation of new 40 amp cooling circuit cable, using a permanent fine point marker (Sharpie), mark the circuit number on the wire marker sleeve of the 4 individual conductors after "CB".
- (10) Install new 40 amp ECU cooling circuit cable PN 1339AS1232-1 IAW Reference (c), WP 019 00 para. 37 using the 40 amp cooling circuit cable PN 1339AS1232-1 instead of the 30 amp cooling cable 1339AS867-1.
- (11) Remove existing 1559AS100-1 R-22 ECU IAW Reference (c), WP 018 para. 6 and 7.
- (12) Install new 1559AS400-1 R134a ECU IAW Reference (c), WP 018 para. 10 steps g through m.
- (13) Remove existing cooling cable PN 1339AS883-1 from the ECU front panel IAW Reference (c), WP 019 00 para. 9 steps h and i. Retain removed connector mounting hardware.
- (14) Install new cooling cable 1339AS1231-1 in place of the removed cable PN 1339AS883-1 using the same mounting hardware IAW the schematic in Enclosure (1), Figure 2.
- (15) Remove existing thermostat, thermostat bracket and thermostat cable IAW Reference (c), WP 019 00 para. 8.

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- Discard removed thermostat, thermostat cable and thermostat guard that was previously attached to the R-22 ECU.
- (16) While thermostat bracket is removed, install two new rivnuts, PN 1339AS762-1 (S6-75) IAW Enclosure (1), Figure 1, using a C845-632 blind rivet installation tool.
 - (17) Drill new thermostat cable clearance hole in the thermostat bracket IAW Enclosure (1), Figure 1.
 - (18) Reinstall modified thermostat bracket IAW Reference (c), WP 019 00 para. 008.
 - (19) Push end of the new thermostat cable, PN 1339AS1230-1, (end without lugs) from the back of the ECU front panel and through the “new” clearance hole added to the thermostat bracket.
 - (20) Using hardware that previously attached the “old” thermostat to the bracket, attach the base of the new thermostat to the thermostat bracket. The new thermostat is provided with the new R-134a ECU.
 - (21) Connect the conductors from the thermostat cable to the thermostat IAW Enclosure (1), Figure 5, and then snap the front of the thermostat to the base of the thermostat.
 - (22) On the new R-134a ECU PN 1559AS400-1 to be installed, remove the lower rear service panel IAW Reference (d), WP 016 00.
 - (23) On the new R-134a ECU PN 1559AS400-1 to be installed, remove control box cover IAW Reference (d).
 - (24) Begin installation of the new R-134a ECU PN 1559AS400-1 IAW Reference (c), WP 018 00 para. 10 step g. In step p route the power cables and the thermostat cable through the chase nipples in the ECU shelf and through the chase nipples on the ECU control box. Continue installing ECU IAW Reference (c) para. 10 step q through x.
 - (25) Continue installing the new R-134a ECU PN 1559AS400-1 IAW Reference (c) para. 10 step y. In step y connect the heat, cool and thermostat cables as follows:
 - (a) Connect the heat cable 1339AS882-1 to terminal board 1 in the ECU control box IAW the schematic in Enclosure (1), Figure 4.
 - (b) Connect the cool cable 1339AS1231-1 to terminal board 2 in the ECU control box IAW the schematic in Enclosure (1), Figure 3.
 - (c) Connect the thermostat cable 1339AS1230-1 to terminal board 3 IAW the schematic in Enclosure (1), Figure 5.
 - (26) On the new ECU front panel install “heat” and “cool” decals adjacent to the heat and cool cable connectors IAW Enclosure (1), Figure 6.
 - (27) Install ECU access panels/covers IAW Reference (d), WP 016 00.
 - (28) On the existing heating cable PN 1339AS866-1, using the supplied red tape, install a band of red tape approximately 1 inch from the connector.
 - (29) Connect the 40 amp heat and cool circuit cables to the heat and cool connectors on the front panel of the ECU IAW Reference (c), WP 018 para. 11.
 - (30) Perform functional check IAW Reference (e).
 - (31) Stamp SEC 5824 and date incorporated on the Modification Plate.

Kit A2 – R-134a Second Position Installation 22’ Cable

- b. Installation of SEC kit in Mobile Facility with ECU in “second position” during initial install of R-134a ECU, P/N 1559AS400-1 in an SOMFA, SOMFB and SOMFBMOD shall be IAW steps (1) – (31) below.
 - (1) Verify there is presently a 30 amp ECU cooling circuit installed in MF. If there is already a 40 amp ECU cooling circuit installed this SEC is not required.

NOTE

30 amp cooling circuit cables will have either 10 AWG or 12 AWG conductors

WARNING

To prevent injury or death, MF 60 Hz and 400 Hz power sources shall be secured in the off (DEENERGIZED) position, be disconnected from MF, and shall have warning tags attached. Only the individual placing warning tags shall remove tags and turn on (ENERGIZE) the power source. Warning tags shall be signed and dated and shall bear the following or similar statement: “Power source shall not be turned on (ENERGIZED) or connected to MF except under direct orders of the undersigned”.

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- (2) Remove and discard existing 30 amp cooling circuit cable, PN 1339AS867-3 (Reference (c), WP 019 00 Figure 2 Index 21), IAW Reference (c), WP019 00 para. 10, with the following changes:
Instead of the cable being routed through a hole in the circuit breaker enclosure the cable will be routed in a raceway along the top of the side wall. Pry the raceway cover to remove and gain access to the cooling cable. Only remove the 30 amp cooling cable, leaving the existing 40 amp heating cable in place. Remove any cable ties required in order to remove this cable taking care not to damage any of the cables / wires.

NOTE

As a part of configuring the MF the existing 30 amp ECU cooling circuit breaker may be located in a different position in the circuit breaker panel than specified in step (3) below. The circuit breaker to be removed is the one the cable was disconnected from in step (2) above.

- (3) Remove existing cooling circuit 30 amp circuit breaker (Reference (c), WP 022 00 Figure 2 Index 9 or Figure 3 Index 5) IAW Reference (c), WP 022 00 para. 6 and discard circuit breaker.
- (4) Install new cooling circuit 40 amp circuit breaker, PN QOB340, in the location that the 30 amp circuit breaker was removed from in step (3) above IAW Reference (c), WP 022 00 para. 10.

NOTE

Most MF's built prior to 1996 used a smaller cable clamp for the cooling circuit cable than the heating circuit cable. If the cable clamp for the cooling circuit is the same size as the cable clamp for the 40 amp heating circuit cable skip steps (6), (7) and (8) below.

- (5) Check size of cable clamp
- (6) Remove cable clamp that clamped the cable removed in step (2) in the raceway.
- (7) Using 3/4" trade size (1.115 actual size) knockout punch make hole in the raceway centered in the hole from which the cable clamp was removed from in step (6) above.
- (8) Install new clamp, PN 1339AS857-2 (3033M), in 3/4" trade size (1.115 actual size) hole in the raceway.
- (9) Prior to installation of new 40 amp cooling circuit cable, using a permanent fine point marker (Sharpie), mark the circuit number on the wire marker sleeve of the 4 individual conductors after "CB".
- (10) Install new 40 amp ECU cooling circuit cable PN 1339AS1232-3 IAW Reference (c), WP 019 00 para. 37 using the 40 amp cooling circuit cable PN 1339AS1232-3 instead of the 30 amp cooling cable 1339AS867-3 IAW the schematic in Enclosure (1), Figure 2. The cable shall be routed through the raceway the same as the cable which was removed in step (2). Install new cable ties in any locations cable ties were removed in step (2).
- (11) Snap the raceway covers back in place.
- (12) Remove existing 1559AS100-1 R-22 ECU IAW Reference (c), WP 018 00 para. 6 and 7.
- (13) Install new 1559AS400-1 R134a ECU IAW Reference (c), WP 018 00 para. 10 steps g through m.
- (14) Remove existing cooling cable PN 1339AS883-1 from the ECU front panel IAW Reference (c), WP 019 00 para. 9 steps h and i, Retain removed connector mounting hardware.
- (15) Install new cooling cable 1339AS1231-1 in place of the removed cable PN 1339AS883-1 using the same mounting hardware IAW the schematic in Enclosure (1), Figure 2.
- (16) Remove existing thermostat, thermostat bracket and thermostat cable IAW Reference (c), WP 019 00 para. 8. Discard removed thermostat, thermostat cable and thermostat guard that was previously attached to the R-22 ECU.
- (17) While thermostat bracket is removed, install two new rivnuts, PN 1339AS762-1 (S6-75), IAW Enclosure (1), Figure 1 using a C845-632 blind rivet installation tool.
- (18) Drill new thermostat cable clearance hole in the thermostat bracket IAW Enclosure (1), Figure 1.
- (19) Reinstall modified thermostat bracket IAW Reference (c), WP 019 00 para. 8.
- (20) Push end of the new thermostat cable, PN 1339AS1230-1, (end without lugs) from the back of the ECU front panel and through the "new" clearance hole added to the thermostat bracket.
- (21) Using hardware that previously attached the "old" thermostat to the bracket, attach the base of the new thermostat to the thermostat bracket. The new thermostat is provided with the new R-134a ECU.
- (22) Connect the conductors from the thermostat cable to the thermostat IAW Enclosure (1), Figure 5, then snap the front of the thermostat to the base of the thermostat.
- (23) On the new R-134a ECU PN 1559AS400-1 to be installed, remove the lower rear service panel IAW Reference (d), WP 016 00.

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- (24) On the new R-134a ECU PN 1559AS400-1 to be installed; remove control box cover IAW Reference (d).
- (25) Begin installation of the new R-134a ECU PN 1559AS400-1 IAW Reference (c), WP 018 00 para. 10 step g. In step p route the power cables and the thermostat cable through the chase nipples in the ECU shelf and through the chase nipples on the ECU control box. Continue installing ECU IAW Reference (c) para. 10 step q through x.
- (26) Continue installing the new R-134a ECU PN 1559AS400-1 IAW Reference (c) para. 10 step y. In step y connect the heat, cool and thermostat cables as follows:
 - (a) Connect the heat cable 1339AS882-1 to terminal board 1 in the ECU control box IAW the schematic in Enclosure (1), Figure 4.
 - (b) Connect the cool cable 1339AS1231-1 to terminal board 2 in the ECU control box IAW the schematic in Enclosure (1), Figure 3.
 - (c) Connect the thermostat cable 1339AS1230-1 to terminal board 3 IAW Enclosure (1), Figure 5.
- (27) On the new ECU front panel install “heat” and “cool” decals adjacent to the heat and cool cable connectors IAW Enclosure (1), Figure 6.
- (28) Install ECU access panels/covers IAW Reference (d), WP 016 00.
- (29) On the existing heating cable PN 1339AS866-3, using the supplied red tape, install a band of red tape approximately 1 inch from the connector.
- (30) Connect the 40 amp heat and cool circuit cables to the heat and cool connectors on the front panel of the ECU IAW Reference (c), WP 018 00 para. 11.
- (31) Perform functional check IAW ref (e).
- (32) Stamp SEC 5824 and date incorporated on the Modification Plate.

Kit A1 – R-22 First Position Installation 13’ Cable

- c. Installation of SEC kit in Mobile Facility with previously installed R-22 ECU, PN 1559AS100-1 in an MFA or MFB, and the “first position” ECU location (closest to the front / power panel) in SOMFA, SOMFB and SOMFBMOD shall be IAW steps (1) – (21) below.
 - (1) Verify there is presently a 30 amp ECU cooling circuit installed in MF. If there is already a 40 amp ECU cooling circuit installed this SEC is not required.

NOTE

30 amp cooling circuit cables will have either 10 AWG or 12 AWG conductors.

WARNING

To prevent injury or death, MF 60 Hz and 400 Hz power sources shall be secured in the off (DEENERGIZED) position, be disconnected from MF, and shall have warning tags attached. Only the individual placing warning tags shall remove tags and turn on (ENERGIZE) the power source. Warning tags shall be signed and dated and shall bear the following or similar statement: “Power source shall not be turned on (ENERGIZED) or connected to MF except under direct orders of the undersigned”.

- (2) Remove and discard existing 30 amp cooling circuit cable, PN 1339AS867-1 (Reference (c), WP 019 00 Figure 2 Index 21), IAW Reference (c), WP019 00 para. 10. Only remove the 30 amp cooling cable, leaving the existing 40 amp heating cable in place. Remove any cable ties required in order to remove this cable taking care not to damage any of the cables/wires.

NOTE

As a part of configuring the MF the existing 30 amp ECU cooling circuit breaker may be located in a different position in the circuit breaker panel than specified in step (3) below. The circuit breaker to be removed is the one the cable was disconnected from in step (2) above.

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- (3) Remove existing cooling circuit 30 amp circuit breaker (Reference (c), WP 022 00 figure 2 index 9 or figure 3 index 5) IAW Reference (c), WP 022 00 para. 6 and discard circuit breaker.
- (4) Install new cooling circuit 40 amp circuit breaker, PN QOB340, in the location that the 30 amp circuit breaker was removed from in step (3) above IAW Reference (c) WP 022 00 para. 10.

NOTE

Most MF's built prior to 1996 used a smaller cable clamp for the cooling circuit cable than the heating circuit cable. If the cable clamp for the cooling circuit is the same size as the cable clamp for the 40 amp heating circuit cable skip steps (6), (7) and (8) below.

- (5) Check size of cable clamp.
- (6) Remove cable clamp (REFERENCE (c), WP 006 Figure 4 Index 7, WP 007 00 Figure 4 Index 7, WP 009 00 Figure 3 Index 7, WP 010 00 Figure 3 Index 7 or WP 01100 Figure 3 Index 7 as applicable) from circuit breaker enclosure.
- (7) Using 3/4" trade size (1.115 actual size) knockout punch make hole in the circuit breaker enclosure centered in the hole from which the cable clamp was removed from in step (6) above.
- (8) Install new clamp, PN 1339AS857-2 (3033M), in 3/4" trade size (1.115 actual size) hole in the circuit breaker Enclosure.
- (9) Prior to installation of new 40 amp cooling circuit cable, using a permanent fine point marker (Sharpie), mark the circuit number on the wire marker sleeve of the 4 individual conductors after "CB".
- (10) Install new 40 amp ECU cooling circuit cable PN 1339AS1232-1 IAW Reference (c), WP 019 00 para. 37 using the 40 amp cooling circuit cable PN 1339AS1232-1 instead of the 30 amp cooling cable 1339AS867-1 IAW the schematic in Enclosure (1), Figure 2. The cable shall be routed through the raceway the same as the cable which was removed in step (2). Install new cable ties in any locations cable ties were removed in step (2).
- (11) On the previously installed R-22 ECU PN 1559AS100-1 remove existing cooling cable PN 1339AS883-1 (Reference (c), WP 019 00 Figure 2 Index 10) IAW Reference (c), WP 019 00 para. 9.
- (12) Crimp terminal lugs PN MS25036-115 on the three conductors on the new 40 amp cooling cable PN 1339AS1231-1 that don't already have a terminal lug.
- (13) Install the new 40 amp cooling cable PN 1339AS1231-1 IAW Reference (c), WP 019 00 para. 36 step f, i and j substituting the new 40 amp cooling cable PN 1339AS1231-1 for the removed 30 amp cooling circuit cable (Reference (c), WP 019 00 Figure 2 Index 10)
- (14) Remove existing thermostat and thermostat bracket IAW Reference (c), WP 019 00 para. 8.
- (15) While thermostat bracket is removed install two new rivnuts, PN 1339AS762-1 (S6-75) IAW Enclosure (1), Figure 1 using a C845-632 blind rivet installation tool.
- (16) Drill new thermostat cable clearance hole in the thermostat bracket IAW Enclosure (1), Figure 1
- (17) Reinstall modified thermostat bracket and thermostat IAW Reference (c), WP 019 00 para. 34 step c.
- (18) On ECU front panel install "heat" and "cool" decals adjacent to the heat and cool cable connectors IAW Enclosure (1), Figure 6.
- (19) Reinstall control box cover and upper and lower ECU panels removed during the installation of the new 40 amp cooling circuit cable in step (11) using the same hardware. Refer to Reference (d), WP 008 00 Figure 6 Index 22 (control box cover), Index 16 (upper panel) and Index 28 (lower panel).
- (20) On the existing heating cable PN 1339AS866-1, using the supplied red tape, install a band of red tape approximately 1 inch from the connector.
- (21) Connect 40 amp heat and cool circuit cables to the heat and cool connectors on the front panel of the ECU IAW Reference (c), WP 018 00 para. 11.
- (22) Perform functional check IAW ref (g).
- (23) Stamp SEC 5824 and date incorporated on Modification Plate.

Kit A2 – R-22 Second Position Installation 22' Cable

- d. Installation of SEC kit in Mobile Facility with ECU in "second position" with previously installed ECU R-22 ECU, PN 1559AS100-1 in an SOMFA, SOMFB and SOMFBMOD shall be IAW steps (1) – (21) below.
 - (1) Verify there is presently a 30 amp ECU cooling circuit installed in MF. If there is already a 40 amp ECU cooling circuit installed this SEC is not required.

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NOTE

30 amp cooling circuit cables will have either 10 AWG or 12 AWG conductors.

WARNING

To prevent injury or death, MF 60 Hz and 400 Hz power sources shall be secured in the off (DEENERGIZED) position, be disconnected from MF, and shall have warning tags attached. Only the individual placing warning tags shall remove tags and turn on (ENERGIZE) the power source. Warning tags shall be signed and dated and shall bear the following or similar statement: "Power source shall not be turned on (ENERGIZED) or connected to MF except under direct orders of the undersigned".

- (2) Remove and discard existing 30 amp cooling circuit cable, PN 1339AS867-3 (Reference (c), WP 019 00 Figure 2 Index 21), IAW Reference (c), WP019 00 para. 10, with the following changes: instead of the cable being routed through a hole in the circuit breaker enclosure the cable will be routed in a raceway along the top of the side wall. Pry the raceway cover to remove and gain access to the cooling cable. Only remove the 30 amp cooling cable, leaving the existing 40 amp heating cable in place. Remove any cable ties required in order to remove this cable, taking care not to damage any of the cables/wires.

NOTE

As a part of configuring the MF the existing 30 amp ECU cooling circuit breaker may be located in a different position in the circuit breaker panel than specified in step (3) below. The circuit breaker to be removed is the one the cable was disconnected from in step (2) above.

- (3) Remove existing cooling circuit 30 amp circuit breaker (Reference (c), WP 022 00 Figure 2 Index 9 or Figure 3 Index 5) IAW Reference (c), WP 022 00 para. 6 and discard circuit breaker.
- (4) Install new cooling circuit 40 amp circuit breaker, PN QOB340, in the location that the 30 amp circuit breaker was removed from in step (3) above IAW Reference (c), WP 022 00 para. 10.

NOTE

Most MF's built prior to 1996 used a smaller cable clamp for the cooling circuit cable than the heating circuit cable. If the cable clamp for the cooling circuit is the same size as the cable clamp for the 40 amp heating circuit cable skip steps (6), (7) and (8) below.

- (5) Check size of cable clamp.
- (6) Remove cable clamp that clamped the cable removed in step (2) in the raceway.
- (7) Using ¾" trade size (1.115 actual size) knockout punch make hole in the raceway centered in the hole from which the cable clamp was removed from in step (6) above.
- (8) Install new clamp, PN 1339AS857-2 (3033M), in ¾" trade size (1.115 actual size) hole in the raceway.
- (9) Prior to installation of new 40 amp cooling circuit cable, using a permanent fine point marker (Sharpie), mark the circuit number on the wire marker sleeve of the 4 individual conductors after "CB".
- (10) Install new 40 amp ECU cooling circuit cable PN 1339AS1232-3 IAW Reference (c), WP 019 00 para. 37 using the 40 amp cooling circuit cable PN 1339AS1232-3 instead of the 30 amp cooling cable 1339AS867-3 IAW the schematic in Enclosure (1), Figure 2. The cable shall be routed through the raceway the same as the cable which was removed in step (2). Install new cable ties in any locations cable ties were removed in step (2).
- (11) Snap the raceway covers back in place.
- (12) On the previously installed R-22 ECU PN 1559AS100-1 remove existing cooling cable PN 1339AS883-1 (Reference (c), WP 019 00 Figure 2 Index 10) IAW Reference (c), WP 019 00 para. 9.
- (13) Crimp terminal lugs PN MS25036-115 on the three conductors on the new 40 amp cooling cable PN 1339AS1231-1 that don't already have a terminal lug.

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- (14) Install the new 40 amp cooling cable PN 1339AS1231-1 IAW Reference (c), WP 019 00 para. 36 step f , i and j substituting the new 40 amp cooling cable PN 1339AS1231-1 for the removed 30 amp cooling circuit cable (Reference (c), WP 019 00 Figure 2 Index 10).
- (15) Remove existing thermostat and thermostat bracket IAW Reference (c), WP 019 00 para. 8.
- (16) While thermostat bracket is removed install two new rivnuts, PN 1339AS762-1 (S6-75) IAW Enclosure (1), Figure 1 using a C845-632 blind rivet installation tool.
- (17) Drill new thermostat cable clearance hole in the thermostat bracket IAW Enclosure (1), Figure 1.
- (18) Reinstall modified thermostat bracket and thermostat IAW Reference (c), WP 019 00 para. 34 step c.
- (19) On ECU front panel install "heat" and "cool" decals adjacent to the heat and cool cable connectors IAW Enclosure (1), Figure 6.
- (20) Reinstall control box cover and upper and lower ECU panels removed during the installation of the new 40 amp cooling circuit cable in step (11) using the same hardware. Refer to Reference (d), WP 008 00 Figure 6 Index 22 (control box cover), Index 16 (upper panel) and Index 28 (lower panel).
- (21) On the existing heating cable PN 1339AS866-3, using the supplied red tape, install a band of red tape approximately 1 inch from the connector.
- (22) Connect 40 amp heat and cool circuit cables to the heat and cool connectors on the front panel of the ECU IAW Reference (c), WP 018 00 para. 11.
- (23) Perform functional check IAW ref (g).
- (24) Stamp SEC 5824 and date incorporated on Modification Plate.

WEIGHT AND BALANCE: Not Applicable.

RECORDS AFFECTED: Make appropriate entry in support equipment custody and maintenance records on OPNAV 4790/51. Compliance shall be reported through MAF OPNAV Form 4790/60 and through the Technical Directive Status Accounting (TDSA) System.

INTERIM SUPPORT: Not Applicable.



By Direction of the
Commander
Naval Air Systems Command

PREPARED BY: NAVAIR Lakehurst Code 6.7.6.2

TARGET COMPLETION DATE: 30 June 2015

VERIFIED BY: Marine Aviation Logistics Squadron 14, Postal Service Center box 8052, Cherry Point, NC,
Serial Number of asset used; ES-13-0206 & ES-13-0207, 9 January 2009.

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**Thermostat Bracket Modification Details,
Wiring Diagrams and Decal Installation**

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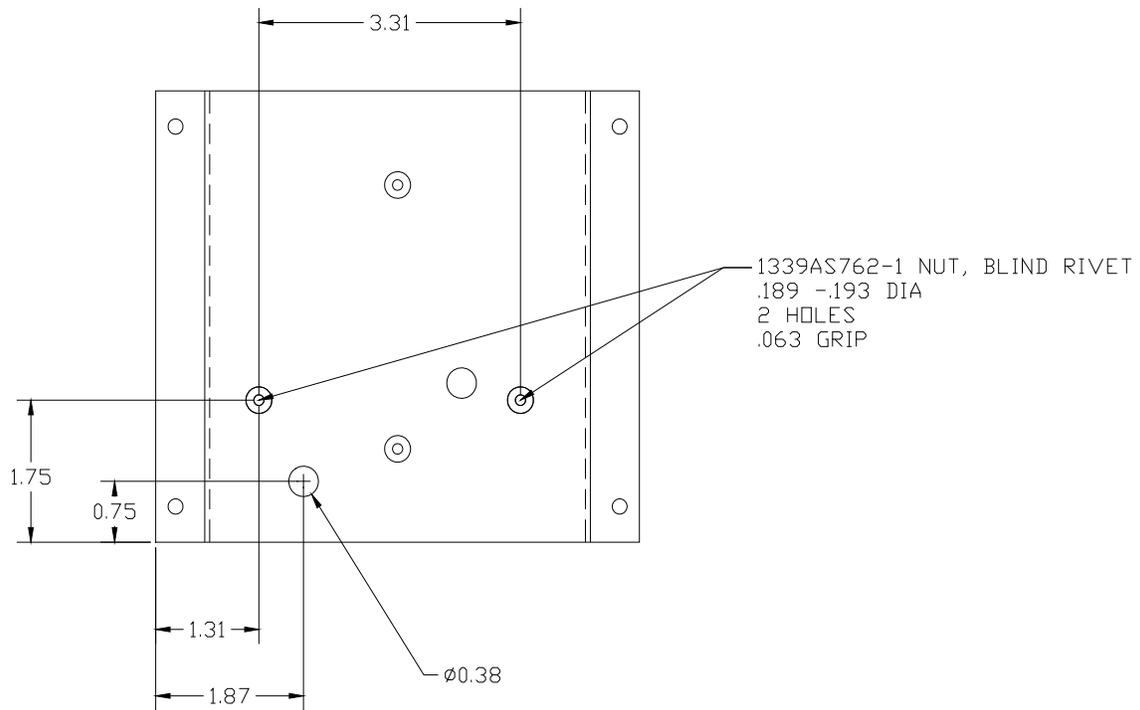


Figure 1 – Thermostat Bracket Modifications

Note - All dimensions are in inches.

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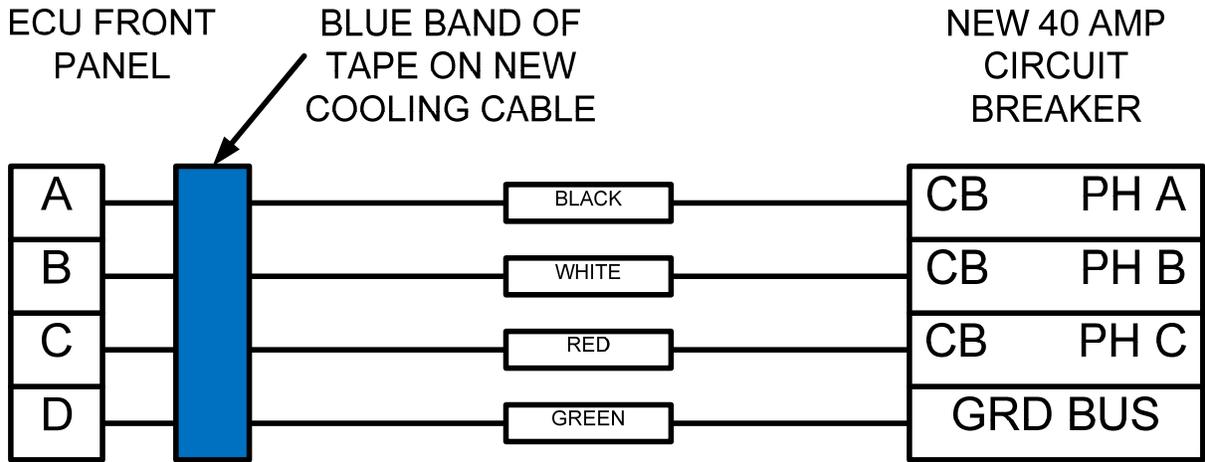


Figure 2
Connection Diagram ECU Cooling Cable Front Panel
40 Amp Circuit Breaker

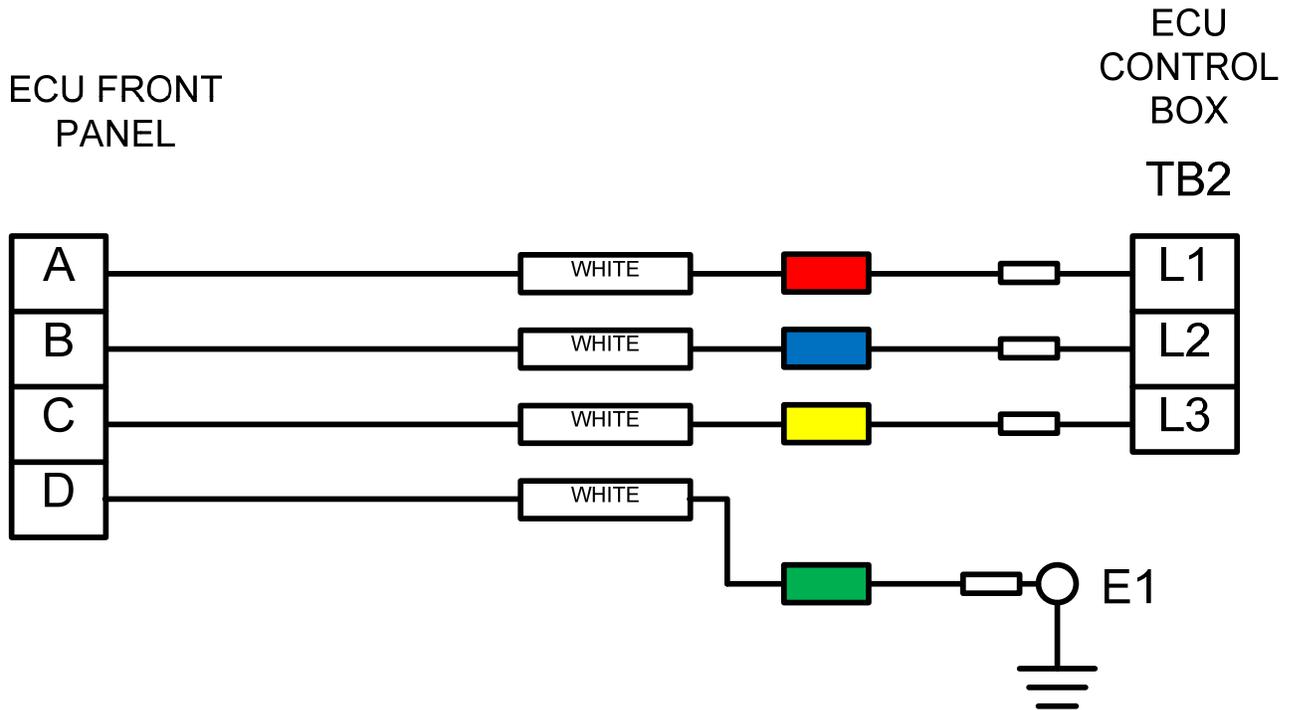


Figure 3
Connection Diagram ECU Cooling Cable Front Panel
ECU Terminal Board TB2

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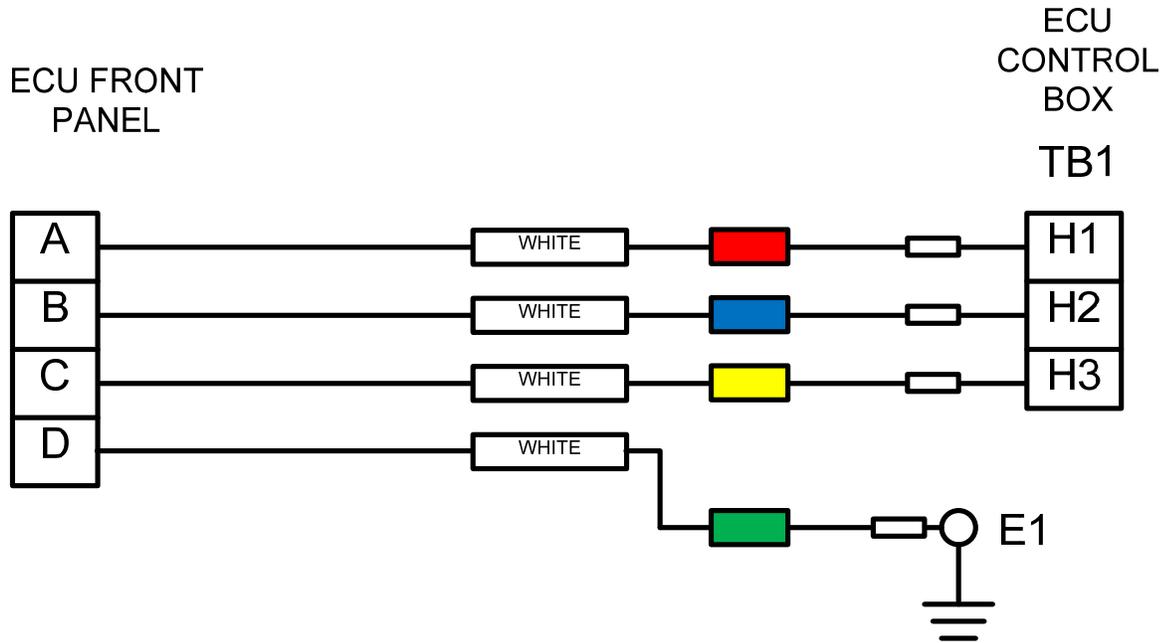


Figure 4
Connection Diagram ECU Heating Cable Front Panel
ECU Terminal Board TB1



Figure 5 – Connection Diagram Thermostat – ECU Terminal Board TB3

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Figure 6 – Decal Installation