INCH-POUND

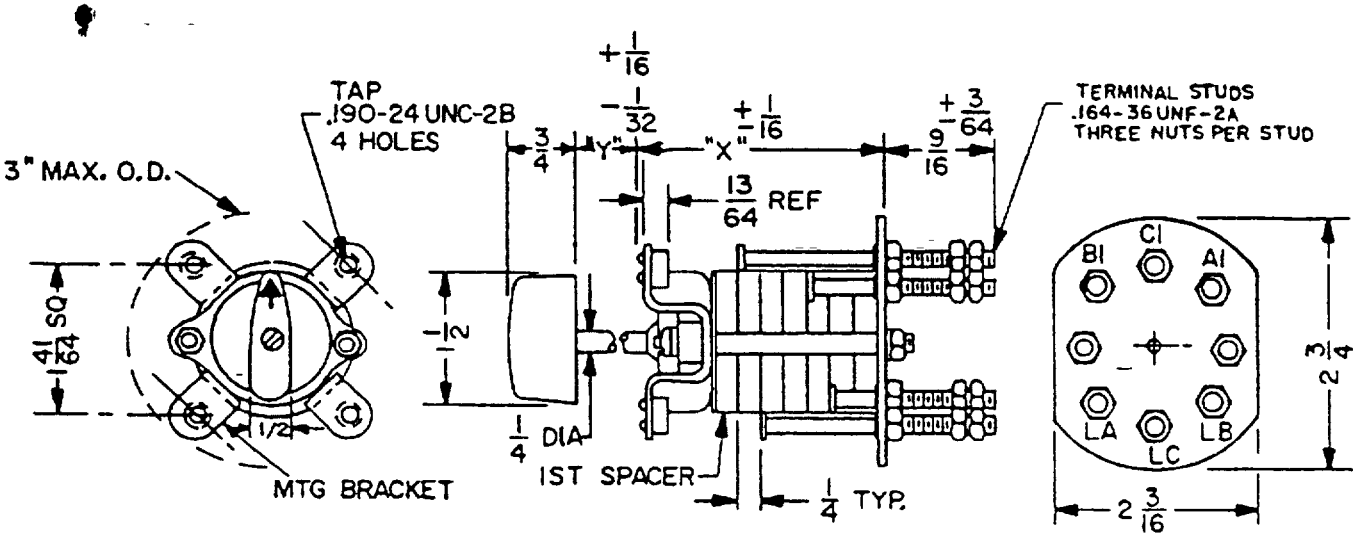
MIL-S-15291/1A(SH)
22 July 1991
SUPERCEDING
MIL-S-15291/1(SH)
17 April 1981

MILITARY SPECIFICATION SHEET

SWITCHES, ROTARY, SNAP ACTION CLASS 1SR FRONT MOUNTED, BACK CONNECTED

This specification is approved for use by the Naval Sea Systems Command, Department of the Navy, and is available for use by all Departments and Agencies of the Department of Defense.

The requirements for acquiring the product described herein shall consist of this specification sheet and the issue of the following specification listed in that issue of the Department of Defense Index of Specifications and Standards (DODISS) specified in the solicitation: MIL-S-15291.



NOTES
1. Dimensions are in inches
2. Unless otherwise specified, tolerance is plus or minus 0.015

FIGURE 1 *Class 1SR switch (up to 6 studs)*

AMSC N/A *FSC 5930*

DISTRIBUTION STATEMENT A. Approved for public release; distribution is unlimited

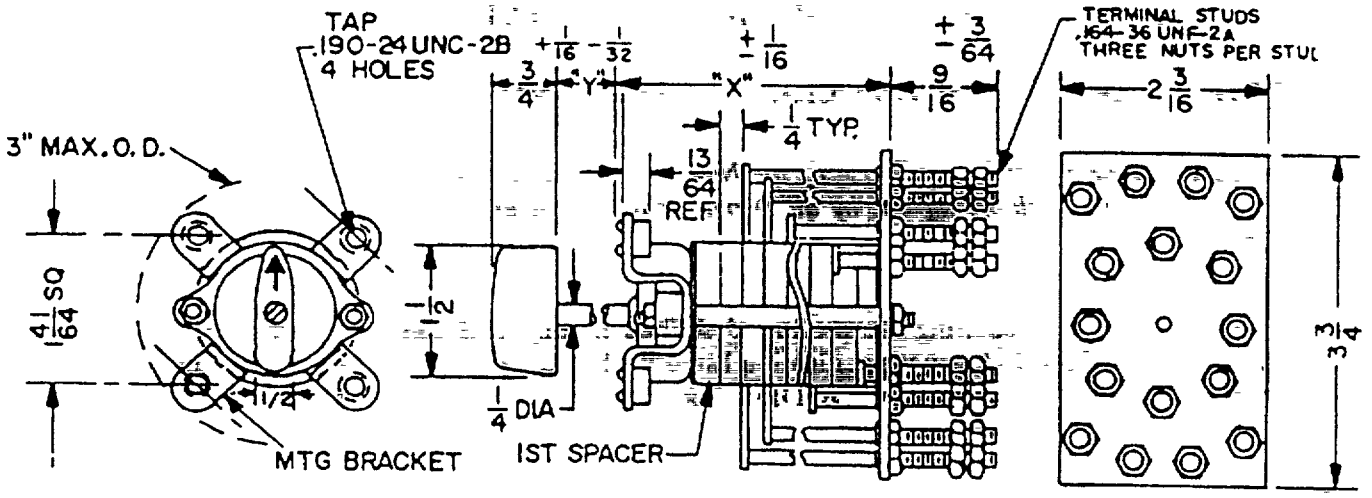
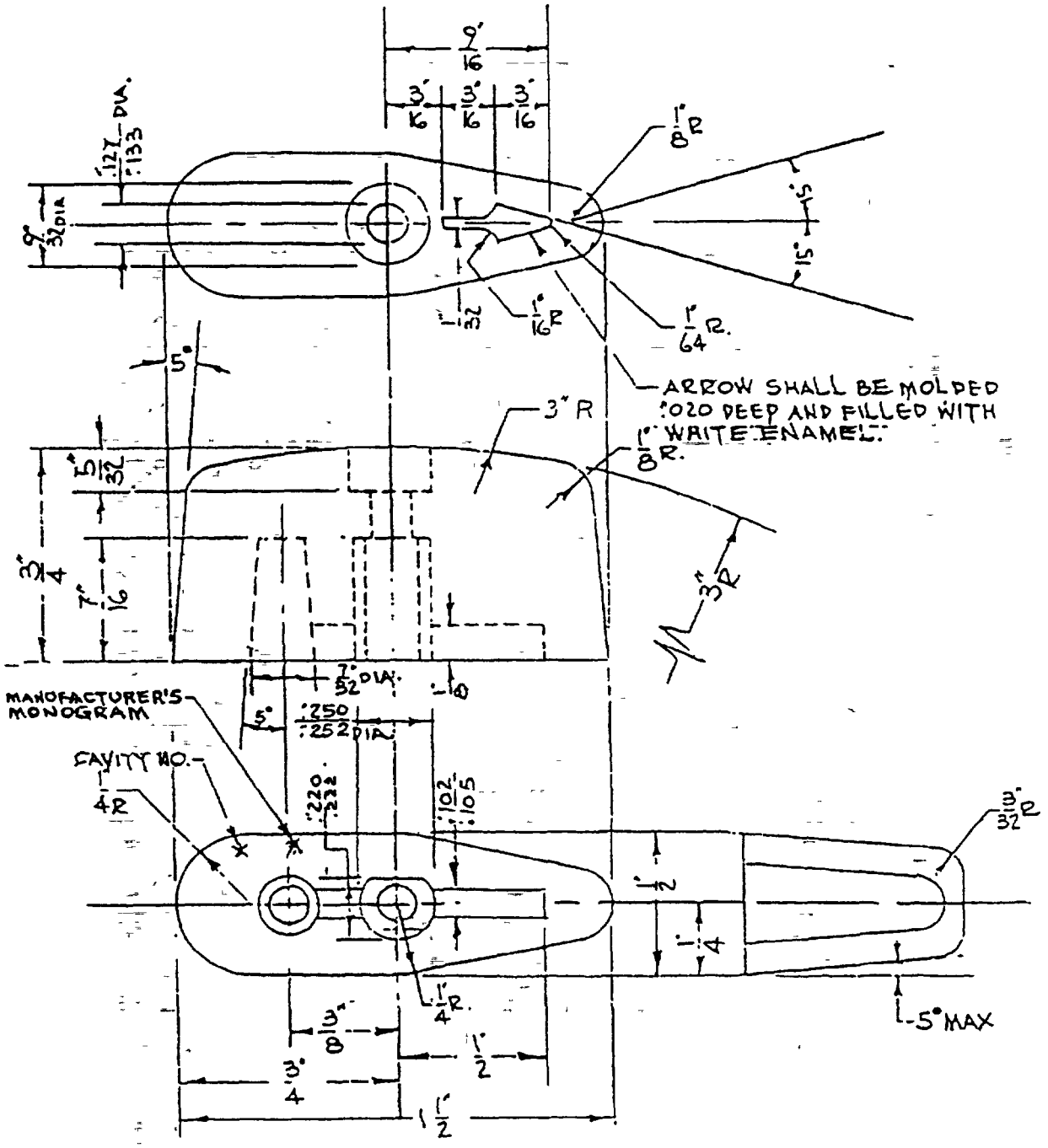


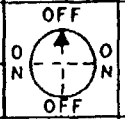
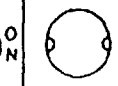
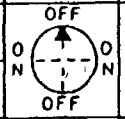
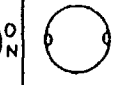
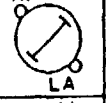
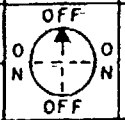
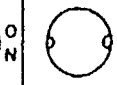
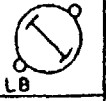
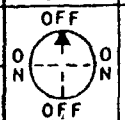
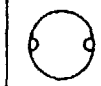
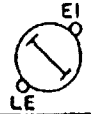
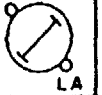
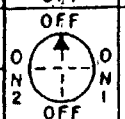
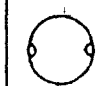
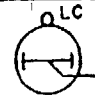
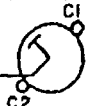
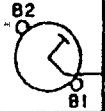
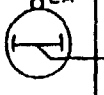
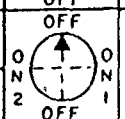
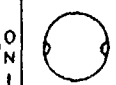
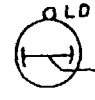
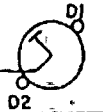
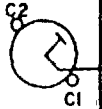
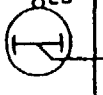
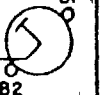
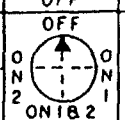
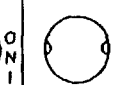
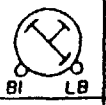
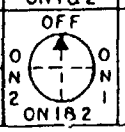
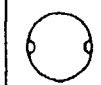
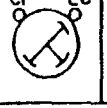
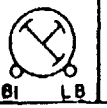
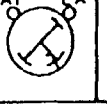
FIGURE 2 Class 1SR swuch (up to 14 studs)

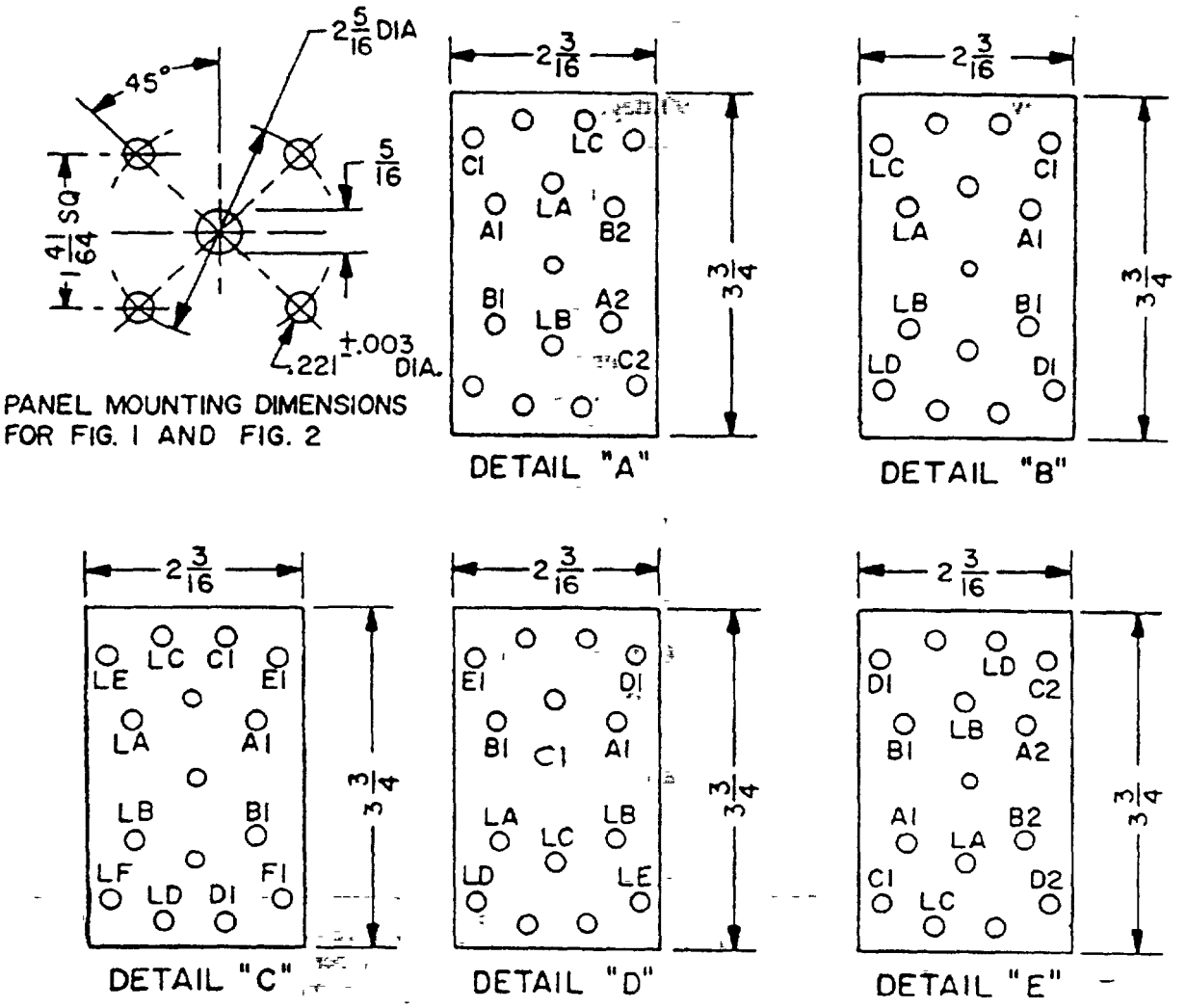


PIN M15291/1-100 Standard handle

FIGURE 3 *Handle*

TABLE I. *Type and switching characteristics.*

MI5291/1 Dash No / Type designation	Detail ref / Torque in-lbs.	Dim "X" / Dim "Y"	Handle or shaft position	Circuit and spacer configuration rotor position, spacer locations, terminal marking and locations									NOTES
				No 1	No 2	No. 3	No 4	No 5	No 6	No 7	No 8	No 9	
-001	Fig 1	$1\frac{11}{16}$											
ISR2A1	4	$\frac{7}{16}$											
-002	Fig 1	$1\frac{15}{16}$											
ISR3A1	4	$\frac{7}{16}$											
-003	Fig 2 Detail D	$2\frac{3}{16}$											
ISR4A1	4	$\frac{7}{16}$											
-004	Fig 2 Detail D	$2\frac{7}{16}$											
ISR5A1	4	$\frac{7}{16}$											
-005	Fig 2 Detail A	$2\frac{11}{16}$											
ISR3B1	4	$\frac{7}{16}$											
-006	Fig 2 Detail E	$3\frac{3}{16}$											
ISR4B1	4	$\frac{7}{16}$											
-007	Fig 2 Detail B	$2\frac{3}{16}$											
ISR4F1	4	$\frac{7}{16}$											
-008	Fig 2 Detail C	$2\frac{11}{16}$											
ISR6F1	4	$\frac{7}{16}$											



NOTE

1 Viewed from the rear of the switch

FIGURE 4 *Mounting dimensions and terminal stud locations*

REQUIREMENTS:

Applicable specification	MIL-S-15291
Dimensions and mounting	See figures 1 through 4
Electrical circuits·	See table I
Angle of throw·	90 degrees
Switching action·	Snap action, reciprocating
Electrical and endurance ratings·	See table II
Stop strength (applicable to switches with stops)·	30 inch-pounds
Vibration.	50 Hz, MIL-STD-167-1
Shock:	High impact, MIL-S-901
Insulation: (spacers and decks)	Glass alkyd, MAI-60 (or MAI-30) in accordance with MIL-M-14
Overload	600 percent of ac rating, 50 make and break operations
Contact resistance	0.02 ohms maximum
Dielectric withstanding voltage	1,250 Vrms
Insulation resistance·	200 megohms minimum
Temperature rise:	50 °C maximum
Contact material	Rotor, phosphor bronze – Stationary contact, copper
Mounting screws	.190-24UNC-2A (4) length and headstyle to suit application Screws not furnished.

TABLE II *Electrical and endurance ratings*

Tests	Current (amperes)	Voltage (volts)	Electrical operations (number of operations)	Test rate (operations per minute)	De-energized operations (number of operations)
Alternating current (rms)	10	125	30,000	30	20,000
Direct current	10	120	20,000	15	-

Terminal marking	Terminal markings shown in table I locate terminals as viewed from the front of the switches

GENERAL INFORMATION:

Switches not covered by specification sheets: Switches which are fabricated from standard parts, as used in qualified switches, but which do not comply with switches detailed herein with respect to circuit characteristics, switching action, mounting arrangement, and handle details may be acquired under this specification from contractors having qualification approval under this specification.

Extended ratings: Switches detailed herein have been tested and found satisfactory at the extended ratings listed in table III. Reduced life expectancy must be anticipated for switches used at these increased voltage or current levels. Tests under the conditions of table III are not required for qualification acceptance and they are not repeated routinely as for maintenance of qualification. Supplemental evaluations and tests applicable to particular circuit requirements are recommended

TABLE III *Extended ratings.*

Switching characteristics	AC - 60 or 400 Hertz											
	125 volts				250 volts				500 volts			
	Resistive or lamp load		Inductive load 0.75 p.f.		Resistive or lamp load		Inductive load 0.75 p.f		Resistive or lamp load		Inductive load 0.75 p.f.	
	Amp.	Operations	Amp.	Operations	Amp	Operations	Amp.	Operations	Amp.	Operations	Amp.	Operations
All	10	30,000	10	30,000	---	---	---	---	---	---	---	---
F[1]	15	10,000	15	10,000	10	10,000	10	10,000	---	---	---	---
A, B[2]	15	10,000	15	10,000	10	10,000	10	10,000	5	10,000	5	10,000
A, B	15	10,000	15	10,000	15	10,000	15	10,000	10	10,000	10	10,000

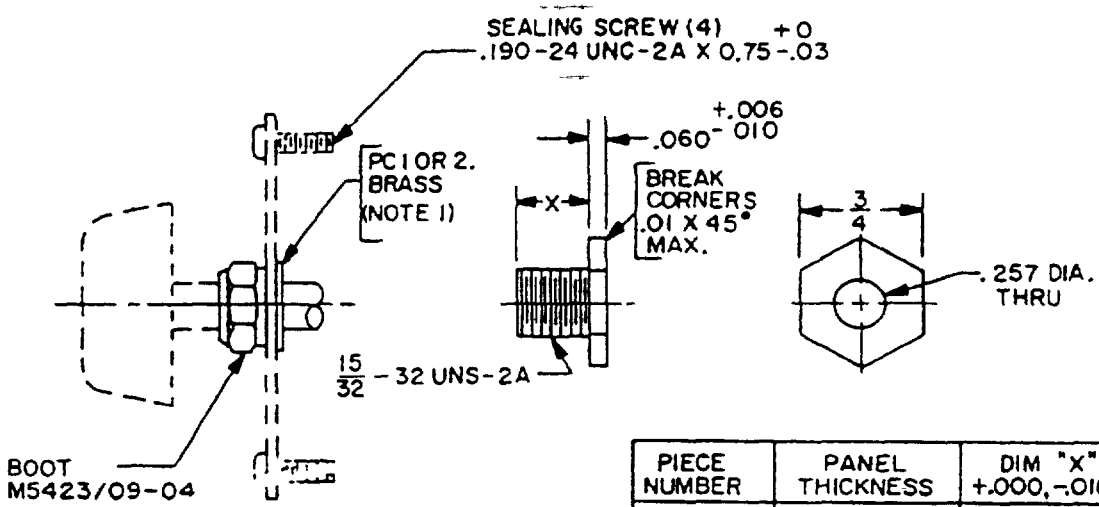
	DC											
	120 volts				250 volts				350 volts			
	Resistive or lamp load		Inductive load[3]		Resistive or lamp load		Inductive load[3]		Resistive or lamp load		Inductive load[3]	
	Amp.	Operations	Amp.	Operations	Amp.	Operations	Amp.	Operations	Amp.	Operations	Amp.	Operations
F----	10	10,000	10	10,000	5	10,000	5	10,000	2	10,000	2	10,000
F[2]	--	---	--	---	-	---	-	---	1	10,000	1	10,000
A, B[2]	10	10,000	10	10,000	5	10,000	5	10,000	2	10,000	2	10,000
A, B	10	20,000	15	10,000	-	---	-	---	-	---	-	---

[1]Switching characteristic F is not rated for 500 volts in class 1SR

[2]Single pole break – all other ratings are based on breaking both sides of the line in accordance with figures 1 and 2 of MIL-S-15291

[3]0 24 henry for inductive circuit

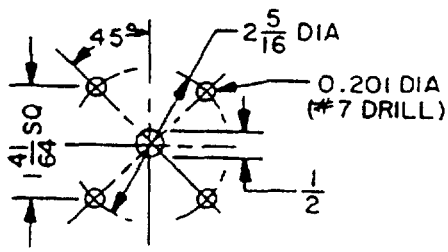
Dripproof mounting: Switches listed in table I as having four-point mounting and "Y" dimension not less than 7/16 inch can be mounted with a kit (see figure 5), to effect a dripproof seal between switch and mounting panel Panel drilling must comply with figure 6 Kits not supplied unless specified (see 6.2 of MIL-S-15291)



PIECE NUMBER	PANEL THICKNESS	DIM "X" +.000,-.010
1	1/16	5/32
2	1/8	7/32

NOTE.
1 Finish shall be zinc and dichromate, ASTM B 633

FIGURE 5 *Kit for panel seal mounting*



NOTE
1 Do not chamfer mounting holes Breaking 1/64 maximum permissible

FIGURE 6 *Panel drilling for mounting kit*

APPLICATION AND ACQUISITION GUIDE: PIN and type designation cross reference shall be as shown in table IV

TABLE IV. *Application and acquisition guide*

M15291/1 dash No	Type designation	For new or existing design	For replacement	Circuit configuration
-001	1SR2A1	X		A (off-on-off-on)
-002	1SR3A1	X		A (off-on-off-on)
-003	1SR4A1	X		A (off-on-off-on)
-004	1SR5A1	-		A (off-on-off-on)
-005	1SR3B1	-		B (off-on-off-on 2)
-006	1SR4B1	-		B (off-on 1-off-on 2)
-007	1SR4F1	-		F (off-on 1-on 1 & 2-on 2)
-008	1SR6F1	-		F (off-on 1-on 1 & 2-on 2)

Revision letters are not used to denote changes due to the extensiveness of the changes

Preparing activity:
Navy - SH
(Project 5930-N663-2)