INCH-POUND
MIL-DTL-15291/11B
6 February 2006
SUPERSEDING
MIL-S-15291/11A(SH)
22 July 1991

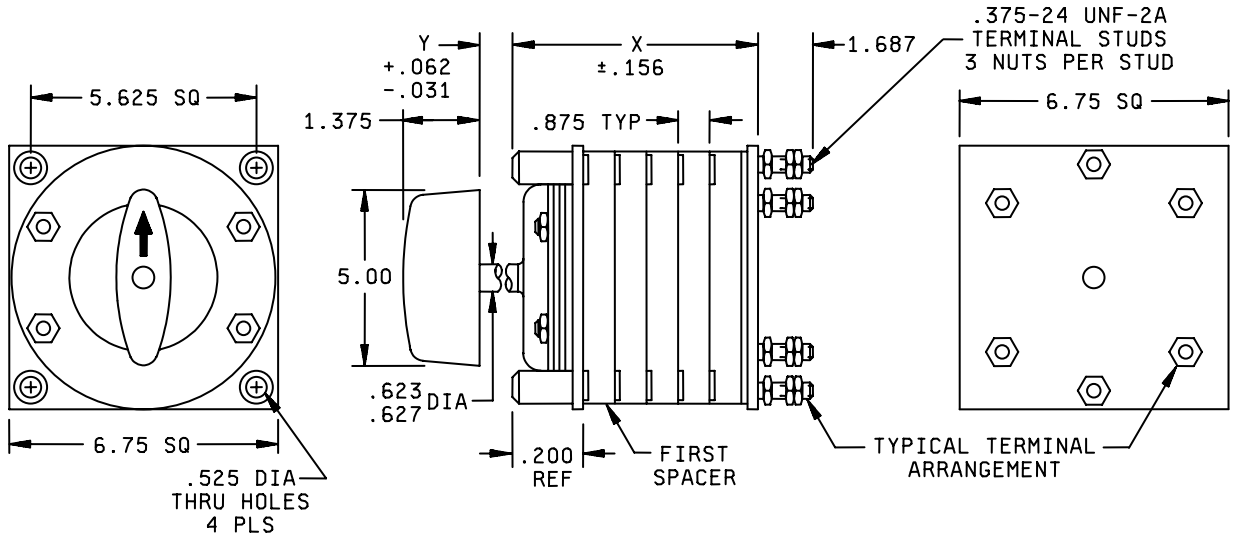
DETAIL SPECIFICATION SHEET

SWITCHES, ROTARY, SNAP ACTION CLASS 20SR FRONT MOUNTED, BACK CONNECTED

Inactive for new design after 17 April 1981. For new design, use MIL-DTL-15291/12

This specification is approved for use by all Departments and Agencies of the Department of Defense.

The complete requirements for acquiring the switch described herein shall consist of this specification and the latest issue of MIL-DTL-15291.



NOTES:
1. Dimensions are in inches.
2. Unless otherwise specified, tolerance is ± .015.

FIGURE 1. Class 20SR switch (up to 6 studs).

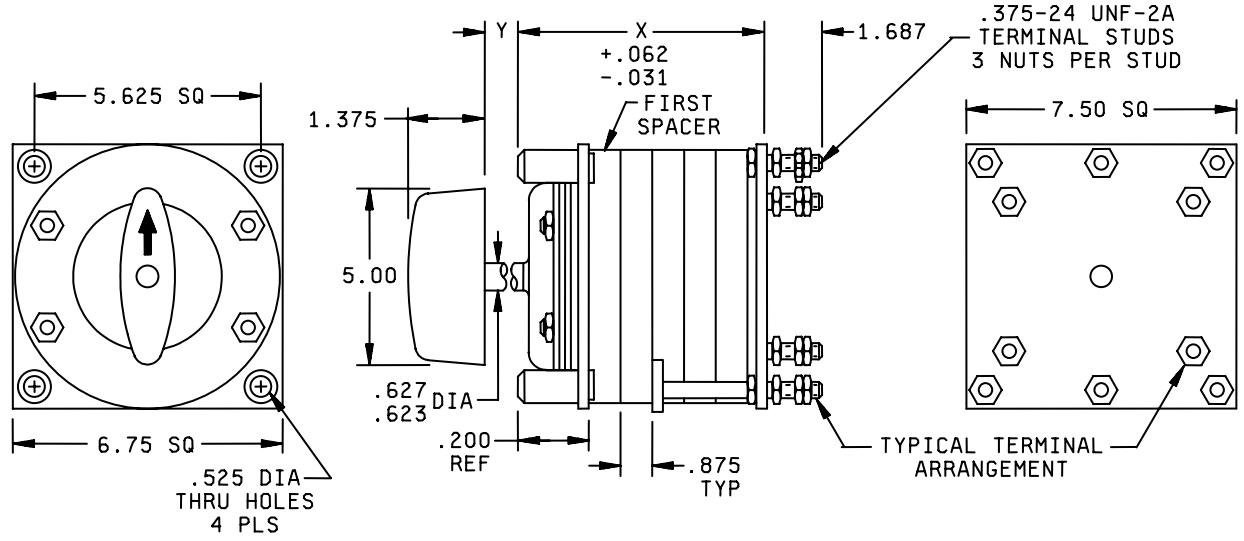


FIGURE 2. Class 20SR switch (up to 10 studs).

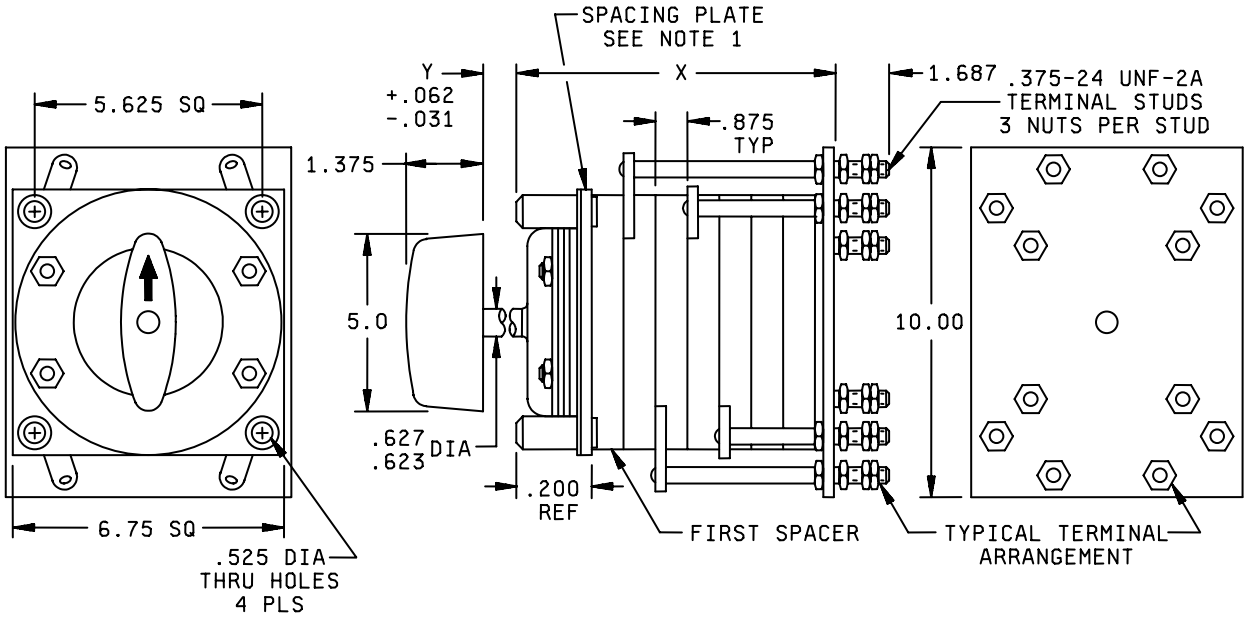
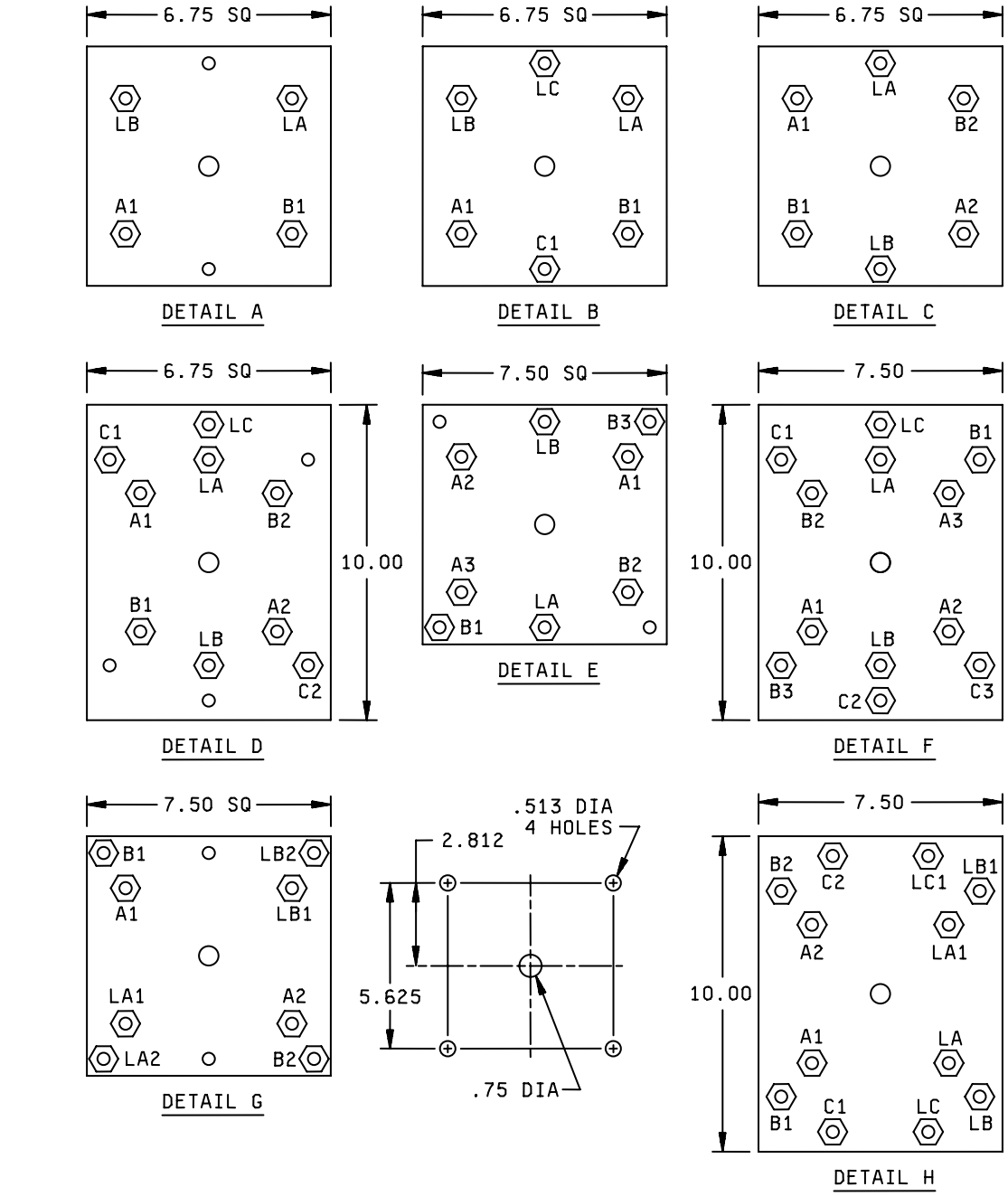


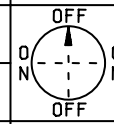
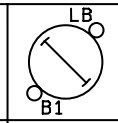
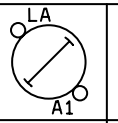
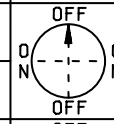
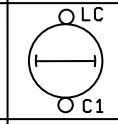
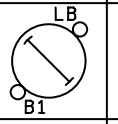
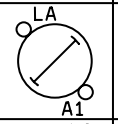
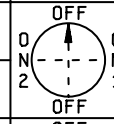
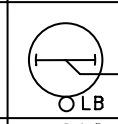
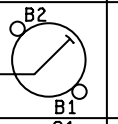
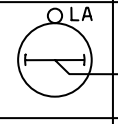
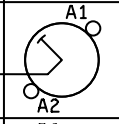
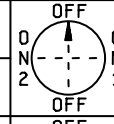
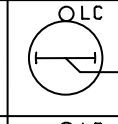
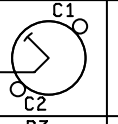
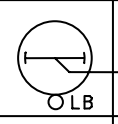
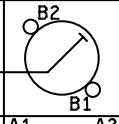
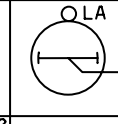
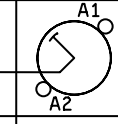
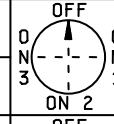
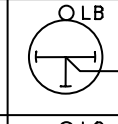
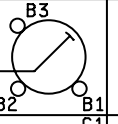
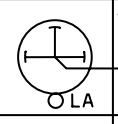
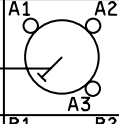
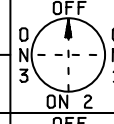
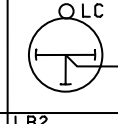
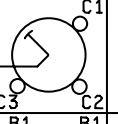
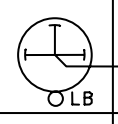
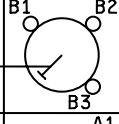
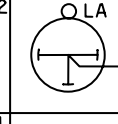
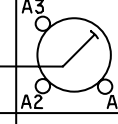
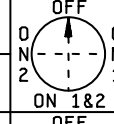
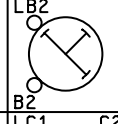
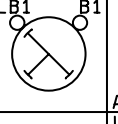
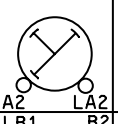
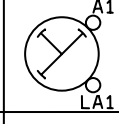
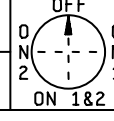
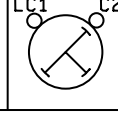
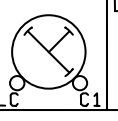
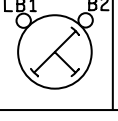
FIGURE 3. Class 20SR switch (up to 12 studs).



NOTE: Terminal studs viewed from rear.

FIGURE 4. Mounting dimensions and terminal stud locations.

TABLE I. Type and switching characteristics.

M15291/11 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 20SR2A1	FIG 1&4 DETAIL A 72	4.937 .437											
-002 20SR3A1	FIG 1&4 DETAIL A 72	5.812 .437											
-003 20SR2B1	FIG 1&4 DETAIL B 72	6.687 .437											
-004 20SR3B1	FIG 3&4 DETAIL C 72	8.437 .437											
-005 20SR2E1	FIG 2&4 DETAIL D 72	6.687 .437											
-006 20SR3E1	FIG 3&4 DETAIL E 72	8.437 .437											
-007 20SR4F1	FIG 2&4 DETAIL E 72	6.687 .437											
-008 20SR6F1	FIG 3&4 DETAIL F 72	8.437 .437											

REQUIREMENTS:

Applicable specification: MIL-DTL-15291.

Dimensions and mounting: See figures 1, 2, 3, and 4.

Switching characteristics: 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): 100 inch-pounds.

Vibration: 50 Hz, MIL-STD-167-1.

Shock: High impact, MIL-S-901.

Contact resistance: 1.5 milliohms maximum.

Dielectric withstanding voltage: 2,000 V rms.

Insulation resistance: 200 megohms minimum.

Temperature rise: 50°C maximum.

Mounting bolts: (4), 1/2 diameter, length, and headstyle to suit application. Bolts not furnished.

Handle: M15291/12-100

Terminal marking: Terminal marking shall be in accordance with details A through H, as specified in table I.

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)	200	500	6,000	8	4,000
Direct current	200	250	4,000	3	---

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 arrangements, 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 in 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 Hz											
	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	200	6,000	200	6,000	200	6,000	200	6,000	200	6,000	200	6,000
	DC											
	120 volts				250 volts				350 volts			
	Resistive or lamp load		Inductive load 1/		Resistive or lamp load		Inductive load 1/		Resistive or lamp load		Inductive load 1/	
	Amp.	Operations	Amp.	Operations	Amp.	Operations	Amp.	Operations	Amp.	Operations	Amp.	Operations
All	200	4,000	---	---	200	4,000	200	4,000	---	---	---	---

1/ 0.025 henry for inductive circuit.

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

TABLE IV. Application and acquisition guide.

M15291/8 dash number	Type designation	For replacement only In new design, use M15291/9	Circuit configuration
-001	20SR2A1	M15291/12-001	A (off-on-off-on)
-002	20SR3A1	M15291/12-002	A (off-on-off-on)
-003	20SR2B1	M15291/12-003	B (off-on 1-off-on 2)
-004	20SR3B1	M15291/12-004	B (off-on 1-off-on 2)
-005	20SR2E1	M15291/12-005	E (off-on 1-on 2-on 3)
-006	20SR3E1	M15291/12-016	E (off-on 1-on 2-on 3)
-007	20SR4F1	M15291/12-007	F (off-on 1-on 1 & 2-on 2)
-008	20SR6F1	M15291/12-008	F (off-on 1-on 1 & 2-on 2)

Referenced Documents:
MIL-DTL-15291
MIL-S-901
MIL-STD-167 -1

Changes from previous issue: Marginal notations are not used in this revision to identify changes with respect to the previous issue due to the extent of the changes.

Custodians:
Navy - SH
DLA - CC

Preparing activity:
DLA - CC

(Project 5930-1908)

NOTE: The activities listed above were interested in this document as of the date of this document. Since organizations and responsibilities can change, you should verify the currency of the information above using the ASSIST Online database at http://assist.daps.dla.mil/ .