INCH-POUND
MIL-PRF-55629/21D
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SUPERSEDING
MIL-PRF-55629/21C
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PERFORMANCE SPECIFICATION SHEET

CIRCUIT BREAKERS, MAGNETIC, PANEL SEAL, TRIP-FREE, SERIES TRIP, DOUBLE POLE (0.2 TO 30 AMPERES)

This specification is approved 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 and MIL-PRF-55629.

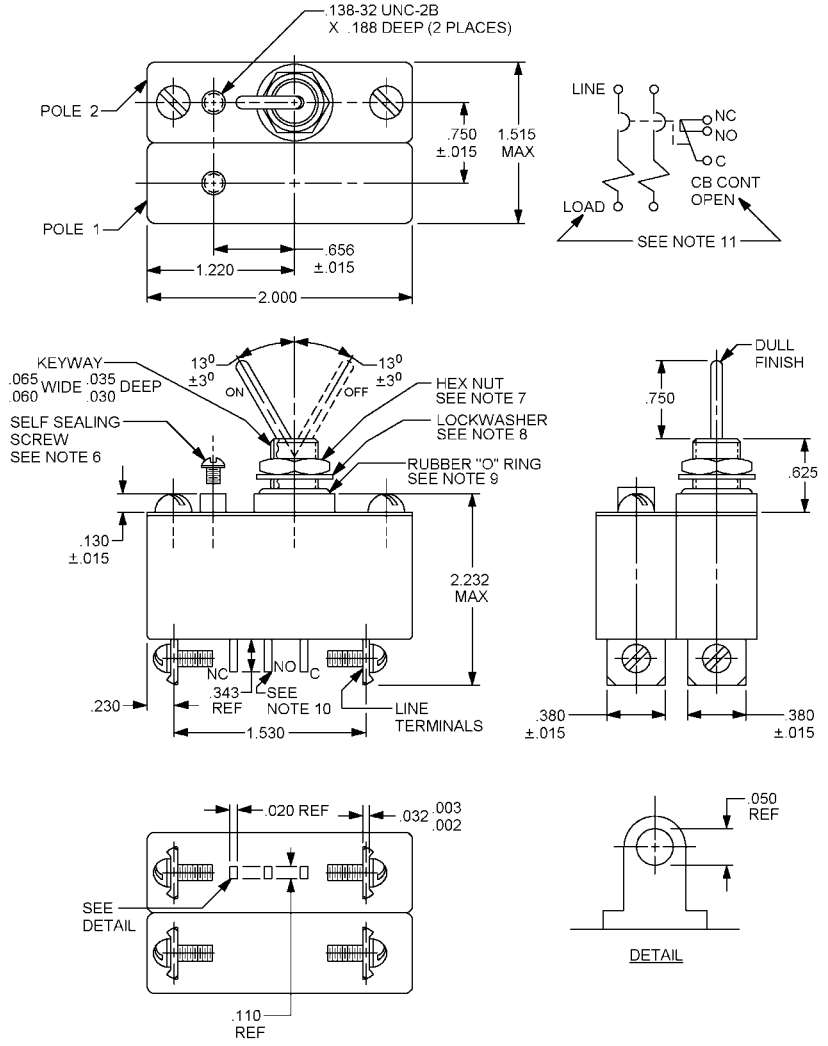


FIGURE 1. Dimensions and configurations.

Inches	mm	Inches	mm	Inches	mm	Inches	mm
.002	.05	.035	.89	.187	4.75	.750	19.05
.003	.08	.050	1.27	.188	4.78	1.220	30.99
.005	.13	.060	1.52	.230	5.84	1.515	38.48
.010	.25	.065	1.65	.250	6.35	1.530	38.86
.015	.38	.090	2.29	.343	8.71	2.000	50.80
.020	.51	.110	2.79	.380	9.65	2.232	56.69
.028	.71	.120	3.05	.510	12.95		
.030	.76	.125	3.18	.625	15.88		
.032	.81	.130	3.30	.656	16.66		

NOTES:
1. Dimensions are in inches.
2. Metric equivalents are given for general information only.
3. Unless otherwise specified, tolerance is ±.031 (0.79 mm).
4. Lockwasher, split, No. 8 NASM35338-137 or equivalent.
5 Terminal screw, No. 8, .164-32 UNC-2A, .187 ±.015 long, material - brass, tin plated (ASTM B545 or equivalent).
6. Passivated - corrosion resisting steel screw, slotted head with integral O-ring, may be replaced by the NASM3212-12 with cross-recessed head or equivalent.
7. Hex mounting nut .500 - 32 UNF-2B thread, .625 ±.010 across flats, .120/.125 thick, brass nickel plated, SAE-AMS-QQ-N-290 nonglare or equivalent; may be replaced with MS25082-B22 or equivalent.
8. Internal tooth lockwasher, .625 ±.005 O.D., .510 ±.005 I.D., .028 ±.005 thick, stainless steel.
9. O-ring, material - Material shall be selected to enable the O-ring to meet the performance requirements of this specification. Butadiene acrylonitrite has been successfully used in the past and should be considered for meeting the O-ring requirements of the specification.
10. Auxiliary switch terminals shall provide for soldered connections.
11 Physical item marking of the words “LOAD” and “CB CONT OPEN” is optional.

FIGURE 1. Dimensions and configurations - Continued.

REQUIREMENTS

Dimensions and configuration: See figure 1.

Current ratings: See table I.

High inrush: Applies unless otherwise specified. 1/

Voltage ratings: See table II. Ratings are maximum; the minimum operating voltage is limited by the internal resistance or impedance of the circuit breaker (see table I).

Auxiliary contacts:

Contact capacity shall be 10 amperes to 250 volts 60/400 Hz and 2 amperes resistive, 1 ampere inductive to 50 V dc.

Tripping-time delays: See table II.

Terminal and mounting hardware: See figure 1.

Terminals: See figure 1. Solderability is applicable to auxiliary contact terminals.

Actuator strength: 25 pounds.

Actuator operating force: 8 pounds, maximum.

Terminal strength:

Applied load: 30 pounds.

Applied torque: 10 inch-pounds.

Interrupting capacities:

2,000 amperes at 50 volts, dc.

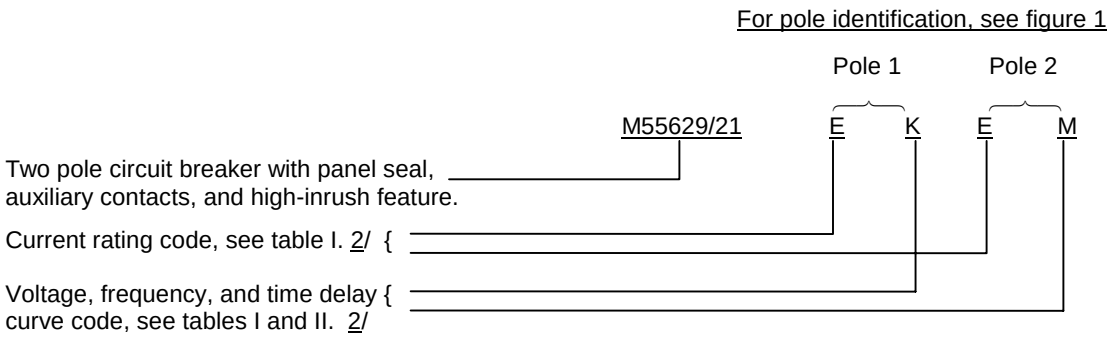
2,000 amperes at 120 volts, ac, 60 Hz.

1,500 amperes at 120 volts, ac, 400 Hz.

1,000 amperes at 240 volts ac, 60 and 400 Hz.

Seal: Panel seal test applies.

Part or Identifying Number (PIN): The PIN to be cataloged and stocked by the Government consists of the prefix M55629/21 and four succeeding code letters as follows: 1/



When circuit breakers without auxiliary contacts, the high-inrush feature (or both), are installed in new equipment, replacement spares should possess both features since it is more economic for the DoD to stock one version of these items in lieu of four. Therefore, stock numbers should not be requested (or assigned) for these special PINs.

1/ Special PINs for equipment manufacturers use only. Equipment manufacturers who do not require the high-inrush feature or auxiliary contacts in specific production applications may order circuit breakers without these features by modifying the prefix as follows: M55629/21XXXX Replace slash with A for items without auxiliary contacts (M55629A21XXXX). Replace slash with B for items without the high-inrush feature (M55629B21XXXX). Replace slash with C for items without either high-inrush feature or auxiliary contacts (M55629C21XXXX).

2/ If both poles have identical ratings, code letters will repeat for each pole. If both poles are not identical, poles 1 and 2, respectively (see figure 1) shall be coded in ascending order of the current rating code letter. If both poles have identical current ratings but different voltage, frequency, and time delay code letters, then these code letters shall be coded in ascending order.

TABLE I. Circuit breaker dash numbers and applicable characteristics.

Current rating		Voltage frequency and tripping time delay code letter from table II	Resistance or impedance ohms (max)	Current rating		Voltage frequency and tripping time delay code letter from table II	Resistance or impedance ohms (max)
Amperes	Code letter			Amperes	Code letter		
0.1	A	K or L	186 at dc	4.0	K	K or L	.113 at dc
0.1	A	M or N	142 at 60 Hz	4.0	K	M or N	.1 at 60 Hz
0.1	A	P, R, or S	350 at 400 Hz	4.0	K	P, R, or S	.3 at 400 Hz
0.250	B	K or L	24 at dc	5.0	L	K or L	.08 at dc
0.250	B	M or N	23 at 60 Hz	5.0	L	M or N	.08 at 60 Hz
0.250	B	P, R, or S	60 at 400 Hz	5.0	L	P, R, or S	.175 at 400 Hz
0.35	C	K or L	12 at dc	7.5	M	K or L	.035 at dc
0.35	C	M or N	12 at 60 Hz	7.5	M	M or N	.035 at 60 Hz
0.35	C	P, R, or S	30 at 400 Hz	7.5	M	P, R, or S	.11 at 400 Hz
0.5	D	K or L	6 at dc	10.0	N	K or L	.02 at dc
0.5	D	M or N	6 at 60 Hz	10.0	N	M or N	.02 at 60 Hz
0.5	D	P, R, or S	12 at 400 Hz	10.0	N	P, R, or S	.04 at 400 Hz
0.75	E	K or L	3 at dc	12.5	P	K or L	.016 at dc
0.75	E	M or N	3 at 60 Hz	12.5	P	M or N	.015 at 60 Hz
0.75	E	P, R, or S	7 at 400 Hz	12.5	P	P, R, or S	.03 at 400 Hz
1.0	F	K or L	2 at dc	15.0	R	K or L	.012 at dc
1.0	F	M or N	2 at 60 Hz	15.0	R	M or N	.011 at 60 Hz
1.0	F	P, R, or S	4 at 400 Hz	15.0	R	P, R, or S	.02 at 400 Hz
1.75	G	K or L	0.9 at dc	20.0	S	K or L	.007 at dc
1.75	G	M or N	0.9 at 60 Hz	20.0	S	M or N	.007 at 60 Hz
1.75	G	P, R, or S	2 at 400 Hz	20.0	S	P, R, or S	.01 at 400 Hz
2.5	H	K or L	.35 at dc	25.0	T	K or L	.006 at dc
2.5	H	M or N	.35 at 60 Hz	25.0	T	M or N	.006 at 60 Hz
2.5	H	P, R, or S	.7 at 400 Hz	25.0	T	P, R, or S	.009 at 400 Hz
3.0	J	K or L	.3 at dc	30.0	U	K or L	.005 at dc
3.0	J	M or N	.3 at 60 Hz	30.0	U	M or N	.005 at 60 Hz
3.0	J	P, R, or S	.5 at 400 Hz	30.0	U	P, R, or S	.006 at 400 Hz

TABLE II. Operating voltage, frequency, and tripping-time delay delay. 1/

Time delay percent rated current	Tripping-time delay at 25°C ±2°C (tripping time in seconds)													
	50 V dc				240 V ac, 60 Hz				240 V ac, 400 Hz					
	K		L		M		N		P		R		S	
	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min
100	no trip one hour		no trip one hour		no trip one hour		no trip one hour		no trip one hour		no trip one hour		no trip one hour	
125	100	10	12	.5	120	10	18	1	N/A	N/A	N/A	N/A	N/A	N/A
150	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	60	6	5.8	.6	500	60
200	20	2.5	1.5	.13	20	3	1.6	.16	20	2.1	2	.2	160	20
400	2	.36	.29	.031	2.3	.3	.3	.04	4	.4	.35	.035	19	2
600	1	.13	.15	Inst	.1	.13	.17	Inst	.6	Inst	.125	Inst	3.5	.250
800	.6	Inst	.06	Inst	.6	Inst	.09	Inst	.06	Inst	.05	Inst	.5	.025
1,000	.29	Inst	.05	Inst	.29	Inst	.043	Inst	.045	Inst	.036	Inst	.043	Inst
1,800 2/	no trip		no trip		no trip		no trip		no trip		no trip		no trip	

TABLE II. Operating voltage, frequency, and tripping-time delay . - Continued 1/

Time delay percent rated current	Tripping-time delay at high and low temperature °C (tripping time in seconds) 3/													
	50 V dc				240 V ac, 60 Hz				240 V ac, 400 Hz					
	K		L		M		N		P		R		S	
	-40° Max	+85° Min	-40° Max	+85° Min	-40° Max	+85° Min	-40° Max	+85° Min	-40° Max	+85° Min	-40° Max	+85° Min	-40° Max	+85° Min
100	no trip one hour		no trip one hour		no trip one hour		no trip one hour		no trip one hour		no trip one hour		no trip one hour	
125	500	.5	100	.1	500	1	100	.1	N/A	N/A	N/A	N/A	N/A	N/A
150	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	500	.5	100	.1	1500	5
200	100	.1	10	.05	100	.05	10	.05	100	.1	10	.05	500	.5
400	20	Inst	3	Inst	20	Inst	3	Inst	20	Inst	3	Inst	100	Inst
600	5	Inst	1	Inst	5	Inst	1	Inst	5	Inst	1	Inst	5	Inst
800	2	Inst	.5	Inst	.5	Inst	.5	Inst	.5	Inst	.5	Inst	.5	Inst

1/ Circuit breakers shall not trip at 100 percent rated current but must trip at 125 or 150 percent of rated current. Between 100 percent and 125 or 150 percent, they may trip. Instantaneous is defined as less than 15 milliseconds.

2/ Items without the high-inrush feature (for use in production only) are not subject to this requirement. High-inrush test shall be performed using one alternation which has a peak value of 1800 percent of rated current. 400 Hz and dc delays shall be subjected to a 400 Hz waveform, 60 Hz delays shall be subjected to a 60 Hz waveform.

3/ High and low test temperature tolerances are ±2°C.

Circuit breakers covered by this specification can replace commercial types as specified in table III providing they have equivalent current, voltage, frequency, and time delay ratings.

Circuit breakers without either auxiliary contacts or the high-inrush feature should be replaced by equivalently rated military items with both of these features.

TABLE III. Supersession and substitution data.

Superseding military part number	Superseded manufacturer part number
M55629/21XXXX	FSCM 81541
	Type APGN-66 UPGN-66

NOTES:

Referenced documents. In addition to MIL-PRF-55629, this specification sheet references the following documents. (Government documents are available on line at http://assist.daps.dla.mil/quicksearch or www.dodssp.daps.mil or from the Standardization Document Order Desk, 700 Robbins Avenue, Building 4D, Philadelphia, PA 19111-5094).

SPECIFICATIONS

Department of Defense

MIL-PRF-55629	Circuit Breakers, Magnetic, Unsealed or Panel Seal, Trip-free, General Specification For.
MS25082	Nut, Plain, Hexagon, Electrical-Thin.

Other Publications

American Society for Testing and Materials (ASTM)

ASTM-B545	Tin, Electrodeposited Coating of.

National Aerospace Standard Industries (NASM)

NASM35338	Washer, Lock-Spring, Helical, Regular (Medium) Series.
NASM3212	Screws, Machine, Pan Head, Cross-Recessed, Self-Sealing, integral Silicone O-Ring, Plain and Self-Locking.

Society of Automotive Engineers (SAE)

SAE-AMS-Q-Q-N-290	Nickel Plating (Electrodeposited).

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:
Army - CR
Navy - EC
Air force - 11
DLA – CC

Review activities:
Army - AV, CR4, MI
Navy - AS, MC, OS, SH
Air Force – 19, 99

Preparing activity:
Army - CR

Agent:
DLA - CC

(Project 5925-0361)