



- NOTES
- 1 - EXPOSED PARTS ARE OF CORROSION RESISTANT MATERIAL OR ARE SUITABLY PROTECTED TO PREVENT CORROSION, ENCLOSURE FINISHED WITH BLUE EPOXY BASED ENAMEL COLOR NO. 25184 PER FEDERAL STANDARD 595
  - 2 - SWITCH SEALED PER MIL-S-5594
  - 3 - HOLD IN VOLTAGE: THE MINIMUM SPECIFIED VOLTAGE AT WHICH THE LEVER WILL REMAIN ACTUATED. HOLD IN MAY OCCUR AT A LOWER VALUE. DROP OUT VOLTAGE: THE VOLTAGE RANGE IN WHICH THE LEVER WILL BE RELEASED
  - 4 - CIRCUITS CAN BE TRANSFERRED MANUALLY. ENERGIZING THE COIL WILL NOT CAUSE TRANSFER OF CIRCUITS
  - 5 - CIRCUIT IDENTIFICATION IS SHOWN ON SWITCH HARDWARE MAY BE FURNISHED UNASSEMBLED PER MIL-S-5594
  - 7 - SWITCHES DO NOT NECESSARILY OPERATE SIMULTANEOUSLY
  - 8 - THE DIODES ARE JANTXV TYPE AND LIMIT THE EMI SPIKES (TRANSIENTS OF DURATION LESS THAN 500 MICRO SECONDS) GENERATED BY THE SWITCH COIL SHALL NOT EXCEED 42 VOLTS
  - 9 - CONTACT HONEYWELL-MICRO SWITCH IF ADDITIONAL INFORMATION ON LOW ENERGY LOADS IS REQUIRED OR FOR HELP WITH SPECIFIC APPLICATIONS

SPECIFICATION DETAILS:			
STANDARD:	CONFORMS TO MIL-S-5594		
<b>CONSTRUCTION:</b>			
ENCLOSURE DESIGN	SEALED TO 1 X 10 <sup>-6</sup> ATM*CC/S PER MIL-S-5594 PARA.3.12 & 4.9.8		
SEAL MATERIAL	SILICONE RUBBER		
CONTACT MATERIAL & CONFIGURATION	SMOOTH GOLD PLATED SILVER CONTACTS 5		
CIRCUIT CONFIGURATION	4X S P D T		
TERMINATION	BOTTOM EXIT LEADWIRES		
WEIGHT	10 ozf (2.8N) MAX		
EXPOSED METALS	CORROSION RESISTANT OR SUITABLY PROTECTED TO PREVENT CORROSION		
ENCLOSURE PAINT	BLUE EPOXY BASED ENAMEL COLOR NO. 25184 PER FEDERAL STANDARD 595		
<b>ELECTRICAL CHARACTERISTICS:</b>			
ELECTRICAL RATINGS	VOLTAGE	INDUCTIVE	RESISTIVE
-SEA LEVEL	28 VDC	.5 A	1 A
-65,000 FEET	28 VDC	.5 A	1 A
DIELECTRIC STRENGTH & INSULATION RES		DIELECTRIC STRENGTH	INSULATION RESISTANCE
-BETWEEN ALL TERMINALS AND EXPOSED NON-CURRENT CARRYING METAL OR GROUNDED PARTS		1000V RMS, 1000µA (MAX LKG)	N/A
-BETWEEN ALL TERMINALS OF MUTUALLY INSULATED CIRCUITS, INCLUDING BETWEEN POLES		1000V RMS, 1000µA (MAX LKG)	N/A
-BETWEEN ALL UNCONNECTED TERMINALS OF THE SAME POLE		1000V RMS, 1000µA (MAX LKG)	N/A
SWITCH RESISTANCE	N/A		
RECOMMENDATION OR USE IN APPL LESS THAN .5 amps AND/OR 12 volts	YES 9		
<b>MECHANICAL CHARACTERISTICS:</b> 3			
STEADY STATE LIMITS	20-29 VDC		
HOLD IN VOLTAGE	15 VDC		
DROP OUT VOLTAGE	0-15 VDC		
OPERATING FORCE AT 30 VDC	7 lbf (31, 1 N) MAX		
OVERRIDE FORCE AT 30 VDC	10 lbf (44, 5 N) MAX		
SOLENOID RESISTANCE AT 30 VDC AND 68°F (20°C)	220 OHMS MIN		
MOUNTING STRENGTH	15 lbf-IN (1,7 NM) MAX		
ACTUATING STRENGTH	25 lbf (111,2N) PER MIL-S-5594 PARA.3.8 & 4.9.4.A 15 lbf (66,7N) PER MIL-S-5594 PARA.3.8 & 4.9.4.B		
<b>LIFE:</b>			
MECHANICAL LIFE	40,000 CYCLES MIN PER MIL-S-5594 PARA.3.10 & 4.9.6		
ELECTRICAL LIFE AT FULL RATED LOAD	20,000 CYCLES MIN PER MIL-S-5594 PARA.3.11 & 4.9.7		
<b>ENVIRONMENTAL:</b>			
TEMPERATURE RANGE	-85°F (-65°C) TO +160°F (+71°C)		
ALTITUDE RANGE	SEA LEVEL TO 65,000 FT		
SHOCK	PER MIL-S-5594 PARA. 3.14 & 4.9.10		
VIBRATION	PER MIL-S-5594 PARA. 3.13 & 4.9.9		
MOISTURE RESISTANCE	PER MIL-S-5594 PARA. 3.17 & 4.9.13		
ACCELERATION	PER MIL-S-5594 PARA. 3.15 & 4.9.11		
SALT SPRAY	PER MIL-S-5594 PARA. 3.16 & 4.9.12		
SAND AND DUST	PER MIL-S-5594 PARA. 3.18 & 4.9.14		
EXPLOSION	PER MIL-S-5594 PARA. 3.19 & 4.9.15		

DRAWING NUMBER 29ET20-3B  
 PAGE 1 OF 1  
 RELEASE NO. PR-22261  
 REPLACES  
 ISSUE 2  
 CHECK  
 REVISIONS  
 A PR22261  
 J A K  
 6 SEP 96  
 CHECK  
 DDM/CAD  
 DRAWN  
 J A K  
 16 SEP 96  
 CHECK

THIS DRAWING COVERS A PROPRIETARY ITEM AND IS THE PROPERTY OF MICRO SWITCH, A DIVISION OF HONEYWELL. THIS DRAWING IS NOT TO BE COPIED OR USED WITHOUT THE APPROVAL OF MICRO SWITCH.

FED. MFG. CODE 91828

**MICRO SWITCH** a Honeywell Division

SWITCH - TOGGLE (MAGNETIC HOLD-IN)

CATALOG LISTING  
**29ET20-3B**

UNLESS OTHERWISE SPECIFIED TOLERANCES ARE:  
 ONE PLACE (.0) ±.030  
 TWO PLACES (.00) ±.015  
 THREE PLACES (.000) ±.005  
 ANGLES ±  
 WEIGHT 10 OZ MAX

MASTER REDUCED  
ANSI Y14.5M-1982 APPLIES