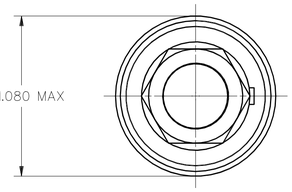
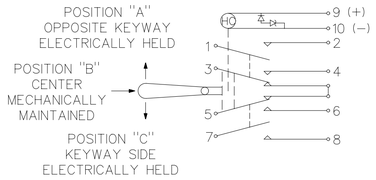
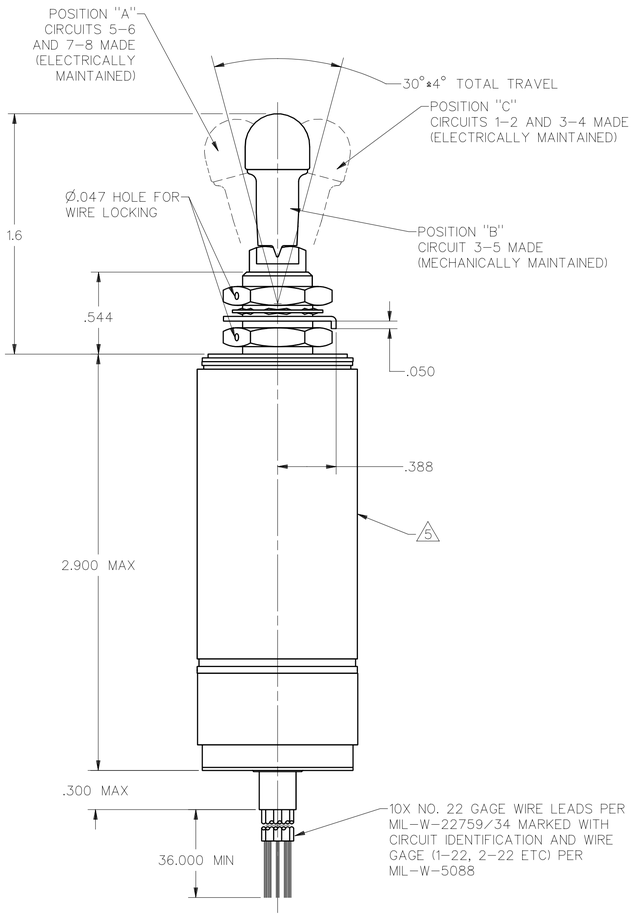
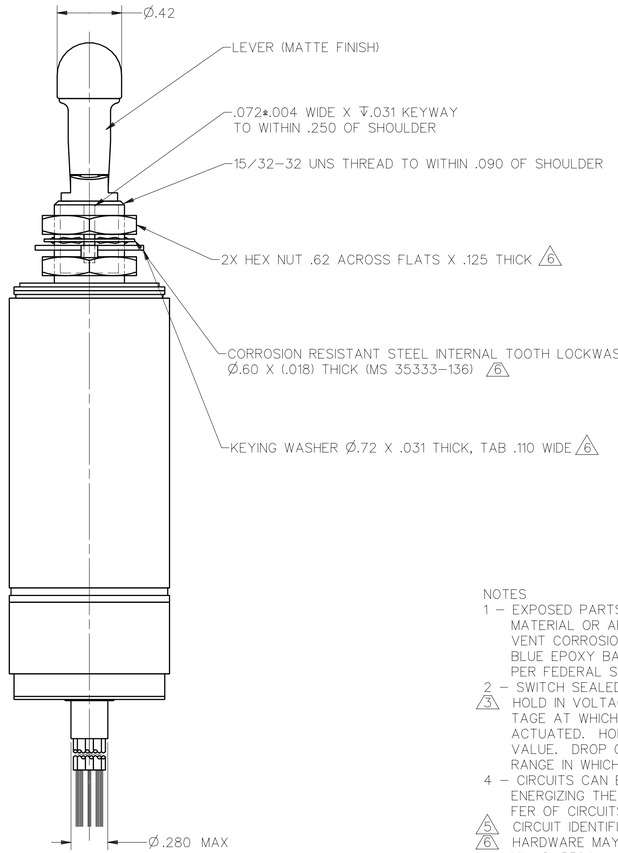




MOVEABLE CONTACT MOVES OPPOSITE TO DIRECTION OF TOGGLE HANDLE

CIRCUIT DIAGRAM





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
6 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		
CONSTRUCTION:			
ENCLOSURE DESIGN	SEALED TO 1 X 10–6 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		
ELECTRICAL CHARACTERISTICS:			
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 (≈60 Hz FOR 5 SEC)		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		
MECHANICAL CHARACTERISTICS: 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		
LIFE:			
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		
ENVIRONMENTAL:			
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-E
ISSUE M 2 PAGE 1 OF 1
RELEASE NO PR-23000 REPLACES

REVISIONS
A PR23000 L.J.K. 19 SEP 97

DRAWN L J K 19SEP97 CHECK
DDM/CAD CHECK CHECK CHECK

MASTER REDUCED
ANSI Y14.5M–1982 APPLIES

FED. MFG. CODE 91929
MICRO SWITCH a Honeywell Division

SWITCH – TOGGLE (MAGNETIC HOLD–IN)

CATALOG LISTING
29ET20–3B–E

THIRD ANGLE PROJECTION
SCALE 2 : 1
DO NOT SCALE PRINT

UNLESS OTHERWISE SPECIFIED TOLERANCES ARE

ONE PLACE	(.0)	±.030
TWO PLACES	(.00)	±.015
THREE PLACES	(.000)	±.005
ANGLES		±

WEIGHT 10 OZ MAX