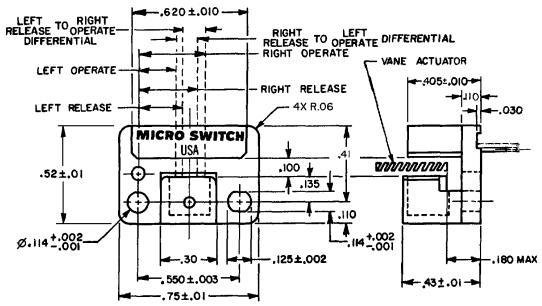
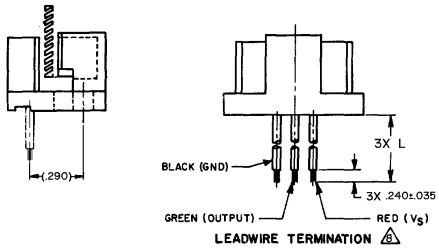
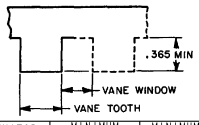
M 4AV SERIES CHART 4





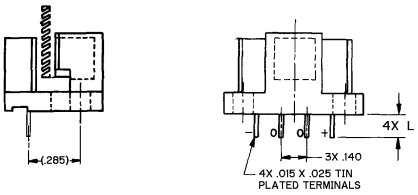
LEADWIRE TERMINATION 8



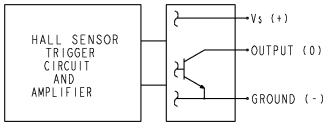
ACTUATOR THICKNESS	MINIMUM WINDOW	MINIMUM TOOTH
.040	.400	.400
.062	.400	.250

VANE ACTUATOR

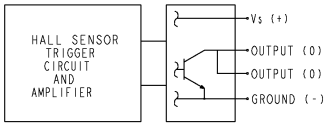
(MATERIAL TO BE ANNEALED 1010-1018 COLD ROLLED STEEL OR LOWER IN CARBON)



P C BOARD TERMINATION



SINGLE OUTPUT



DOUBLE OUTPUT

BLOCK DIAGRAM SHOWING CURRENT SINKING OUTPUT

NOTES

1. ELECTRICAL CHARACTERISTICS SPECIFIED OVER VOLTAGE AND TEMPERATURE RANGE USING AN ACTUATOR .040 THICK WITH A .400 TOOTH AND WINDOW PASSING THROUGH THE CENTER OF THE AIR GAP
2. SWITCH IS OFF (RELEASE CONDITION) WHEN VANE ACTUATOR TOOTH IS IN THE AIR GAP
3. THE OUTPUT CURRENT MAXIMUM IS TOTAL OF OUTPUT SINKING CURRENTS
4. ABSOLUTE MAXIMUM RATINGS ARE THE EXTREME LIMITS THAT THE DEVICE WILL WITHSTAND WITHOUT DAMAGE. HOWEVER, THE ELECTRICAL AND MECHANICAL CHARACTERISTICS ARE NOT GUARANTEED ABOVE THE RECOMMENDED OPERATING CONDITIONS NOR WILL THE DEVICE NECESSARILY FUNTION. RATINGS ARE TO BE CONSIDERED INDIVIDUALLY, NOT COMBINED
5. MAXIMUM CHANGE IN VANE TRAVEL MECHANICAL CHARACTERISTICS SWITCHING POINT REFERENCING 25°C AND 12Vdc INITIAL CONDITION
6. PRODUCT PERFORMANCE EVALUATED PER TS 060 192
7. WHEN HAND SOLDERING PRINTED CIRCUIT, BOARD TERMINATIONS, USE A Ø.125 THERMISTATICALLY CONTROLLED TIP OF 550°F AND APPLY TO THE TERMINALS NO LONGER THAN 6 SECONDS
8. LEADWIRES ARE 24 AWG WITH CROSSLINK POLYETHYLENE INSULATION OF Ø.060 MAX O.D.
9. MOLEX TERMINAL 22-05-3041 LOCKING FEATURE ON T2 LISTINGS MATE WITH MOLEX HOUSING 2695/6471
10. WILL MATE WITH AMP HOUSING NO.87499-B ON T1 LISTINGS ONLY
11. AMP TERMINALS 103323-4
12. LISTINGS 4AV20F-T1 AND 4AV20F-T2 HAVE A MAXIMUM TEMPERATURE RATING OF 85° C DUE TO TERMINAL BLOCK LIMITATIONS

MECHANICAL CHARACTERISTICS 1 2

SUPPLY VOLTAGE	OPERATING TEMPERATURE °C	LEFT OPERATE	LEFT RELEASE	RIGHT OPERATE	RIGHT RELEASE	DIFFERENTIAL LEFT OP TO R REL RIGHT OP TO L REL
4.5 TO 24.0 5	25°C	±.006	±.006	±.006	±.006	±.010
12.0	25°C	.213±.025	.237±.025	.337±.025	.313±.025	.10 ±.01
4.5 TO 24.0 5	-40°C TO +85°C	±.024	±.018	±.024	±.018	
4.5 TO 24.0 5	-40°C TO +125°C	±.040	±.030	±.040	±.030	±.070

ELECTRICAL CHARACTERISTICS (OPERATING CONDITION) 1 2

SUPPLY VOLTAGE	Vcc	4.5 TO 26.5 Vdc
SUPPLY CURRENT "ON"	Icc	5 TO 18.5 mA
OUTPUT VOLTAGE "ON"	Vsat	0 TO 0.4 Vdc (SINKING 20 mA)
OUTPUT VOLTAGE "ON"	Vsat	0 TO 0.5 Vdc (SINKING 40mA)
OUTPUT CURRENT "OFF"	Ileak	0 TO 10μA (PULLED UP TO 24 Vdc MAX)
OUTPUT SWITCHING RISE TIME	tr	0 TO 1.5μS (Vcc 12V, Rload 1K OHM, Cload 20pF MAX 25°C)
OUTPUT SWITCHING FALL TIME	tf	0 TO 1.0μS (Vcc 12V, Rload 1K OHM, Cload 20pF MAX 25°C)
REVERSE SUPPLY VOLTAGE CURRENT	Iccr	-2.5 TO 0 mA (-30 VOLT SUPPLY, 0 VOLT OUTPUT APPLIED)

ABSOLUTE MAXIMUM RATINGS 3 4

SUPPLY VOLTAGE	±30 VDC
VOLTAGE APPLIED TO OUTPUT	-0.5VDC TO +30VDC
OUTPUT CURRENT	±50mA
TEMPERATURE	-40°C TO +150°C
TRANSIENT SUPPLY CURRENT	±0.5 AMP 15μS MAX
TRANSIENT OUTPUT CURRENT	±0.5 AMP 15μS MAX

	CATALOG LISTING	OUTPUT STYLE	TERMINAL STYLE	DIM. L
	4AV15F	SINGLE	LEADWIRE	5.50±.25
	4AV16F	SINGLE	LEADWIRE	7.45±.25
	4AV17F	SINGLE	LEADWIRE	13.15±.50
	4AV18F	SINGLE	LEADWIRE	18.15±.50
	4AV19F	SINGLE	LEADWIRE	22.0±.5
1	4AV20F	DOUBLE	PCB	.140±.035
12	4AV20F-T1	AMP	TERMINAL	11
12	4AV20F-T2	MOLEX	TERMINAL	9

TRANSIENT CHARACTERISTICS (REFERENCE ISO 7637-1, 25°C)

INDUCTIVE LOAD OPENING	PULSE 1	DURATION <0.2mS	-110 VOLTS
INDUCTIVE LOAD OPENING	PULSE 1	DURATION <2mS	-100 VOLTS
SERIES CURRENT INTERRUPT	PULSE 2	DURATION <200mS	+150 VOLTS
LOAD DUMP	PULSE 5	DURATION <400mS	+120 VOLTS
FIELD DECAY	PULSE 36	DURATION <100nS	+200 VOLTS
NEGATIVE TRANSIENT	PULSE 39	DURATION <100nS	-200 VOLTS
RFI	1 MHz THROUGH 1000 MHz		> 40 V/M

THIRD ANGLE PROJECTION

SCALE 3:1

DO NOT SCALE PRINT

UNLESS OTHERWISE SPECIFIED TOLERANCES ARE

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

WEIGHT

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SOLID STATE VANE SWITCH

CATALOG LISTING 4AV SERIES CHART 4

ANSI Y14.5M 1982 APPLIES

MASTER REDUCED

FORMTEK

DRAWING NUMBER M 4AV SERIES CHART 4 PAGE 1 OF 2

ISSUE 5

RELEASE DATE 11 MAY 98

RELEASED BY J.A.F.

DRAWN BY J.J.A.

RELEASE REQ. DR-5009

REF-A-SIZE X102209-AV

REVISIONS

A	CO-93445	6 J W 22 SEP 98
B	PR-23614	D.C. 2 OCT 98
C	C093789	D.C. 26 OCT 98
D	99008-A	8 J Y 9 FEB 99

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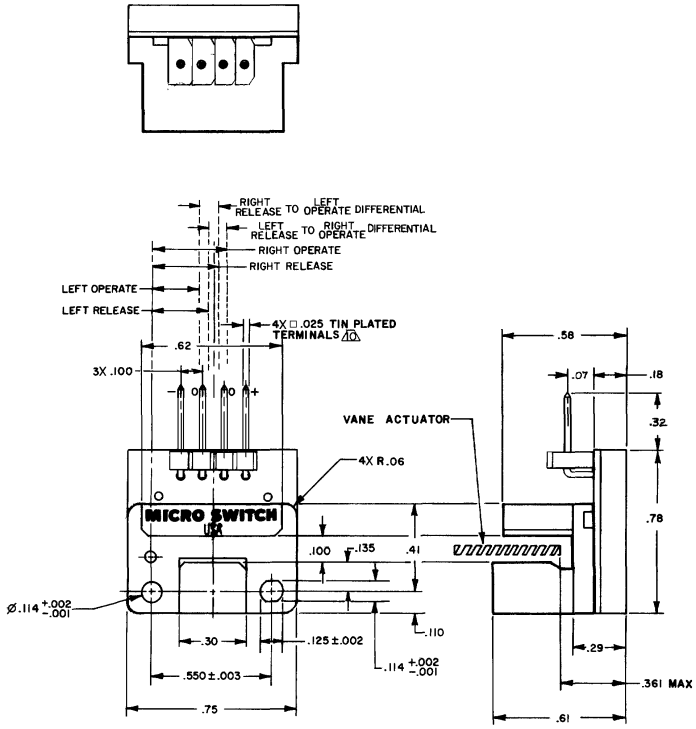
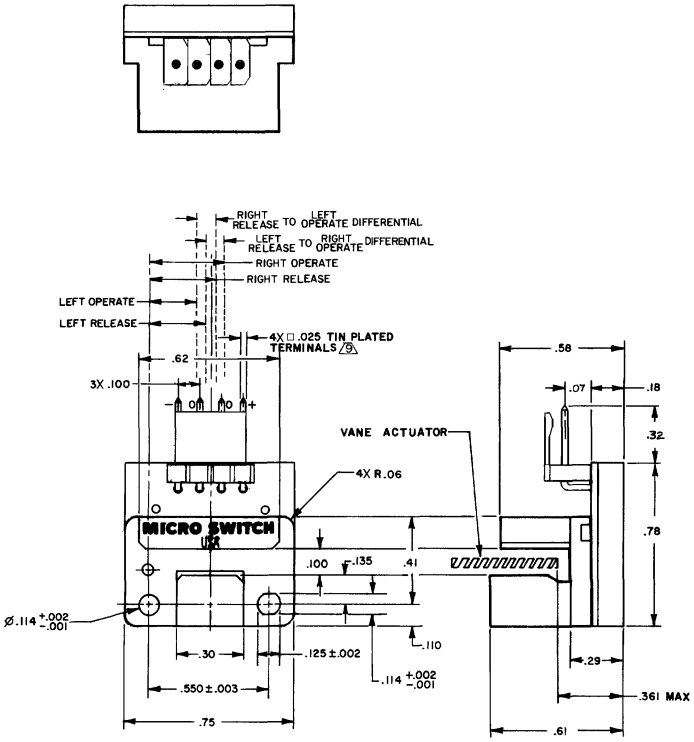
M 4AV SERIES CHART 4



STYLE T1



STYLE T2

DRAWING NUMBER	M 4AV SERIES CHART 4
PAGE	2 OF 2
RELEASED	X102209-AV
RELEASE NO.	DR-5009
ISSUE	5
DRAWN	J.A.F. 11 MAY 98
CHECKED	
DRAWN	J.J.A. 11 MAY 98
CHECK	

REVISIONS

A	PR-23514	DET 2 OCT 98
B	C093789	DET 26 OCT 98
C	94008-A	DET 19 FEB 99

FORMTEK

ANSI Y14.5M 1982 APPLIES
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SOLID STATE
VANE SWITCH

CATALOG LISTING
4AV SERIES
CHART 4

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WEIGHT

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