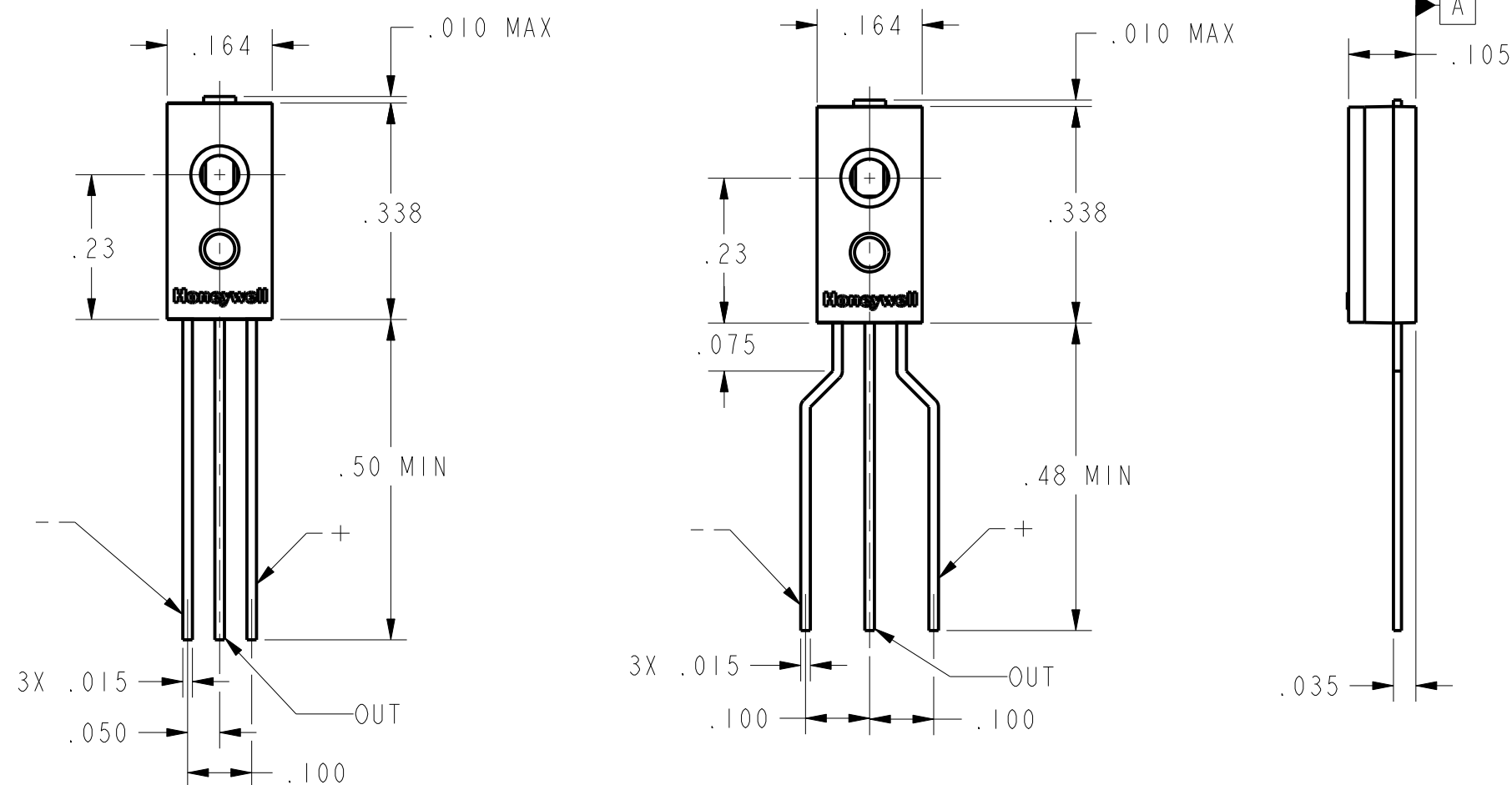


HONEYWELL  
PART NUMBER

HIH-4020 SERIES CHART 1

REV	DOCUMENT	CHANGED BY	CHECK
A	0012014	PM 24MAR05	AK

HIH-4020 SERIES



PRELIMINARY - NOT RELEASED TO PRODUCTION

OPERATING CHARACTERISTICS  
at 5.0 VDC AND 25°C UNLESS OTHERWISE NOTED

SPECIFICATION	MIN	TYP	MAX	UNIT
INTERCHANGEABILITY				
0 to 60%RH	-5		5	% RH
60% to 100%RH	-8		8	% RH
ACCURACY, (BFSL)		±3.5		% RH
ACCURACY, (2nd ORDER CURVE)		±2.5		% RH
HYSTERESIS		3		% RH
REPEATABILITY		±0.5		% RH
SETTLING TIME			70	mS
RESPONSE TIME, 1/e IN SLOW MOVING AIR		15		Sec.
STABILITY, AT 50%RH IN 1 YEAR <sup>△5</sup>		±1.2		% RH
STABILITY, AT 50%RH IN 1 YEAR <sup>△6</sup>		±0.5		% RH
POWER REQUIREMENTS				
<sup>△1</sup> VOLTAGE SUPPLY	4		5.8	VDC
CURRENT SUPPLY			500	µA
VOLTAGE OUTPUT, 2nd ORDER CURVE FIT	$V_{out} = 0.00003(\text{SENSOR RH})^2 + 0.0281(\text{SENSOR RH}) + 0.820$ , TYP at 25°C			
VOLTAGE OUTPUT, 1st ORDER CURVE FIT	$V_{out} = (V_{supply})(0.0062(\text{SENSOR RH}) + 0.16)$ TYP at 25°C			
TEMPERATURE COMPENSATION	$V_{out} = (0.0305 + 0.000044T - 0.0000011T^2)(\text{SENSOR RH}) + (0.9237 - 0.0041T + 0.000040T^2)$ , T=TEMPERATURE IN °C			
OPERATING TEMPERATURE	-40	SEE CHART	85	°C
OPERATING HUMIDITY <sup>△2</sup>	0	SEE CHART	100	% RH
STORAGE TEMPERATURE	-50		125	°C
STORAGE HUMIDITY <sup>△2</sup>	SEE CHART			% RH

NOTES

- <sup>△1</sup> - DEVICE IS CALIBRATED AT 5 VDC AND 25°C
- <sup>△2</sup> - NONCONDENSING ENVIRONMENT
- <sup>△3</sup> - CROSS-HATCHED OPERATING ZONE LIMITED TO <50 HOURS
- <sup>△4</sup> - NO SPECIFICATION ZONE
- <sup>△5</sup> - INCLUDES TESTING OUTSIDE OF THE RECOMMENDED OPERATING ZONE
- <sup>△6</sup> - INCLUDES TESTING FOR THE RECOMMENDED OPERATING ZONE ONLY
- 7 - DEVICE IS RATIO-METRIC TO SUPPLY VOLTAGE
- 8 - EXTENDED EXPOSURE TO >=90% CAUSES A REVERSIBLE SHIFT OF 3% RH
- 9 - THIS SENSOR IS LIGHT SENSITIVE AND SHOULD BE SHIELDED FROM BRIGHT LIGHT TO ACHIEVE BEST PERFORMANCE



ESD SENSITIVITY:  
CLASS 3

DESIGN UNITS: INCH  
TOLERANCES UNLESS NOTED:

NO PLACE	X	±	0.040
ONE PLACE	.X	±	0.030
TWO PLACE	.XX	±	0.015
THREE PLACE	.XXX	±	0.005
FOUR PLACE	.XXXX	±	0.0005
ANGLES	X	±	2

THIRD ANGLE PROJECTION



DRAWN	TMM	22FEB05
CHECK	AK	24MAR05

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INTERPRET PER ASME Y14.5M-1994  
OTHER HONEYWELL ENGINEERING STANDARDS MAY APPLY

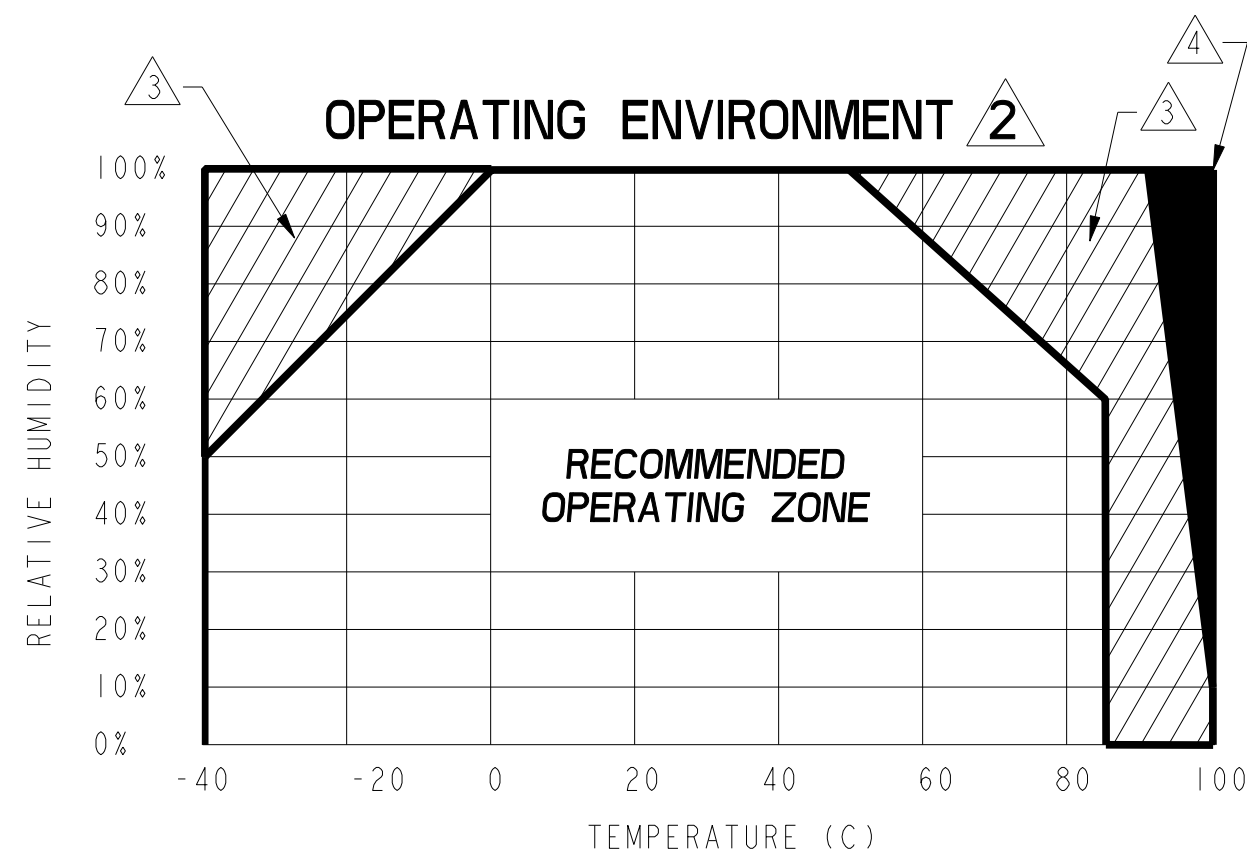
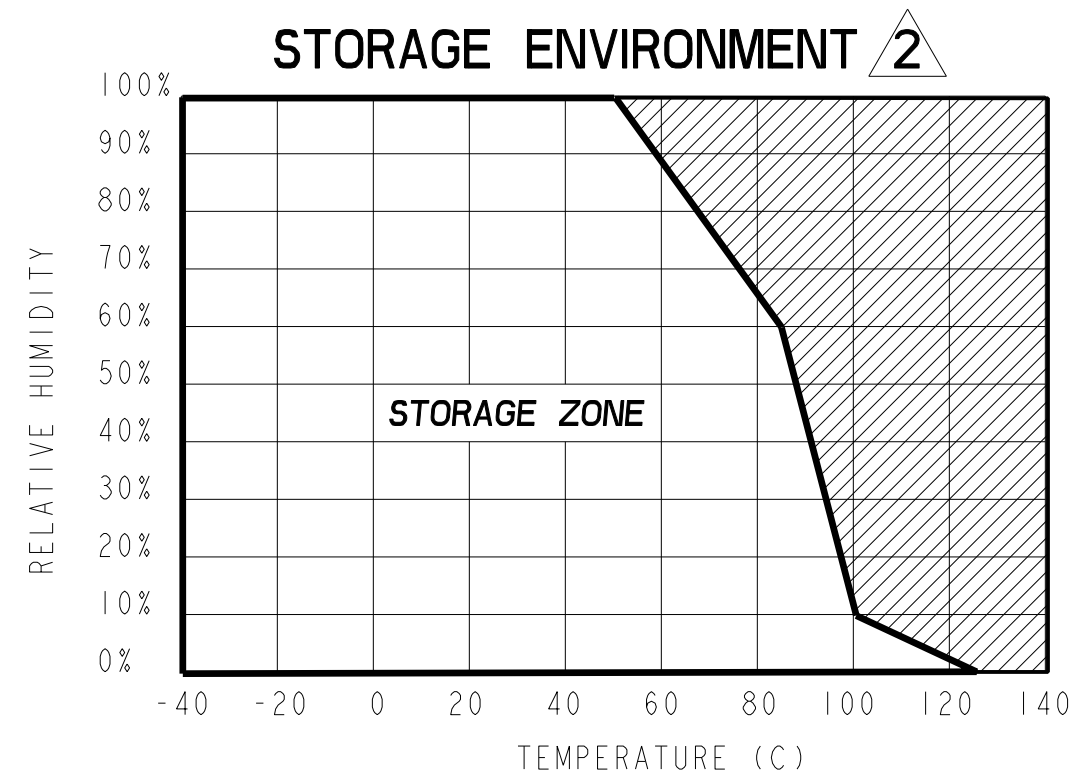
Pro/ENGINEER 3D

**Honeywell**

TITLE THERMOPLASTIC RH PACKAGE  
HIH-4020 SERIES

SIZE	TYPE	DRAWING NAME	REV
C	I	HIH-4020 SERIES CHART 1	A

SCALE 3:1 SHEET 1 OF 2



**PRELIMINARY - NOT RELEASED TO PRODUCTION**

DATA PRINTOUT (EXAMPLE)	
MODEL	HIH-4020-001
CHANNEL	92
WAFER	030996M
MRP	337313
CALCULATED VALUES AT 5 V	
Vout @ 0% RH	0.958 V
Vout @ 75.3% RH	3.268 V
LINEAR OUTPUT FOR 2% RH ACCURACY @ 25 °C	
ZERO OFFSET	0.958 V
SLOPE	30.680 mV/%RH
RH	(Vout-ZERO OFFSET)/SLOPE
	(Vout-0.958)/0.0307
RATIOMETRIC RESPONSE FOR 0 TO 100% RH	
Vout	Vsupply (0.1915 TO 0.8130)

**PRODUCT DESCRIPTION**

CATALOG LISTING	DESCRIPTION
HIH-4020-001	COVERED INTEGRATED CIRCUIT HUMIDITY SENSOR, 0.100 IN LEAD PITCH SIP
HIH-4020-002	COVERED INTEGRATED CIRCUIT HUMIDITY SENSOR, 0.050 IN LEAD PITCH SIP
HIH-4020-003	COVERED INTEGRATED CIRCUIT HUMIDITY SENSOR, 0.100 IN LEAD PITCH SIP WITH CALIBRATION AND DATA PRINTOUT
HIH-4020-004	COVERED INTEGRATED CIRCUIT HUMIDITY SENSOR, 0.050 IN LEAD PITCH SIP WITH CALIBRATION AND DATA PRINTOUT
HIH-4021-001	COVERED, FILTERED INTEGRATED CIRCUIT HUMIDITY SENSOR, 0.100 IN LEAD PITCH SIP
HIH-4021-002	COVERED, FILTERED INTEGRATED CIRCUIT HUMIDITY SENSOR, 0.050 IN LEAD PITCH SIP
HIH-4021-003	COVERED, FILTERED INTEGRATED CIRCUIT HUMIDITY SENSOR, 0.100 IN LEAD PITCH SIP WITH CALIBRATION AND DATA PRINTOUT
HIH-4021-004	COVERED, FILTERED INTEGRATED CIRCUIT HUMIDITY SENSOR, 0.050 IN LEAD PITCH SIP WITH CALIBRATION AND DATA PRINTOUT

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		SIZE	DWG TYPE	DRAWING NAME	REV
		C	I	HIH-4020 SERIES CHART 1	A
SCALE		3:1	SHEET 2 OF 2		