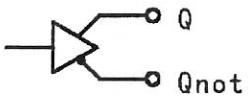


TITLE		REV.	REVISIONS	DATE	REVISED	APPROVED
INCREMENTAL ENCODER SPECIFICATION		(2)	Slow speed change	Feb. 7, '02	K. Shibuya	M. Yamashita
5 S P - 0 0 8 1	[1]MODEL	$\text{MSK} - \text{015} - \text{1024} - \text{00}$ <p style="text-align: center;"> MODEL FUNCTION No. OUTPUT PULSE GEAR </p>				
	[2]NAME	KIT TYPE MAGNETIC ENCODER				
	[3]EXTERNAL VIEW	5-201066				
	[4]OUTPUT SIGNALS	DUAL SQUARE WAVE IN QUADRATURE WITH INDEX SIGNAL				
	[5]MECHANICAL SPECIFICATION	<p>5-1)SLEW SPEED $\text{@ } 18000$ $\pm 2000 \text{ r/min.}$</p> <p>5-2)ALLOWABLE INPUT ANGLE ACCELERATION 10000 rad/s^2</p> <p>5-3)MOMENT OF INERTIA $6.3 \times 10^{-4} \text{ kg} \cdot \text{m}^2$</p> <p>5-4)WEIGHT APPROX. 0.2 kg (SENSOR, WITHOUT CABLE) APPROX. 0.6 kg (GEAR)</p> <p>5-5)AIR GAP $0.15 \pm 0.1 \text{ mm}$</p>				
	[6]ENVIRONMENTAL SPECIFICATION	<p>6-1)VIBRATION RESISTANCE 98 m/s^2 (10~2000 Hz 2 HOURS EACH IN X, Y, Z DIRECTIONS)</p> <p>6-2)SHOCK RESISTANCE 196 m/s^2 (11 ms, 2 TIMES EACH IN X, Y, Z DIRECTIONS)</p> <p>6-3)OPERATING TEMPERATURE $0 \sim +85 \text{ }^\circ\text{C}$</p> <p>6-4)STORAGE TEMPERATURE $-20 \sim +90 \text{ }^\circ\text{C}$</p> <p>6-5)CONSTRUCTION IP54</p> <p>6-6)HUMIDITY $95 \% \text{ RH}$ (+40 °C, 8 HOURS)</p>				
	[7]ELECTRICAL SPECIFICATION	<p>7-1)SUPPLY VOLTAGE $\text{DC} 5 \pm 0.5 \text{ V}$ (RIPPLE LESS THAN 3%)</p> <p>7-2)CURRENT REQUIREMENT 100 mA Max. (NO LOAD)</p> <p>7-3)OUTPUT CIRCUIT LINE DRIVER (RS-422A)</p>				
	PROVIDE					
	PHOTO	<p style="text-align: center;">26C31</p> <p style="text-align: right;">(和文 5 S P - 0 0 8 1)</p>				
	WARE:H	DRAWN BY JUL. 9. 1999 H. Kanno	CHECKED BY Jul. 9. '99 K. Shibuya	APPROVED BY Jul. 9. '99 M. Yamashita	DRAWING No. 5 S P - 0 0 8 1	

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13.7.29
CUSTOMER SUPPORT Dept.



S S P - 0 0 8 1

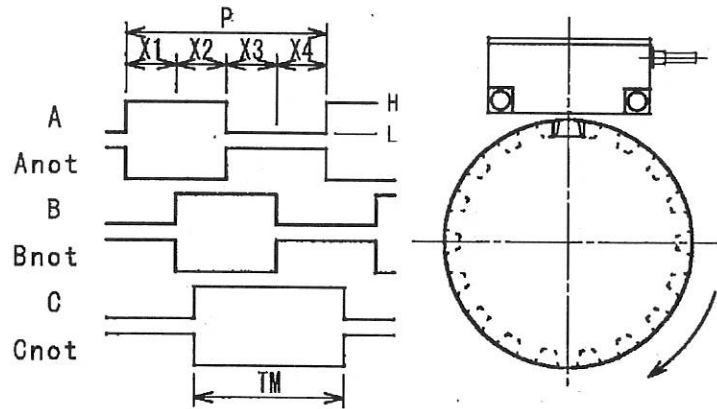
TITLE	REV.	REVISIONS	DATE	REVISED	APPROVED

- 7-4) OUTPUT VOLTAGE [H] $\geq 2.4 \text{ V}$ ($V_{CC}=4.5 \text{ V}$)
- 7-5) OUTPUT VOLTAGE [L] $\leq 0.4 \text{ V}$ ($V_{CC}=5.5 \text{ V}$)
- 7-6) RISE/FALL TIME $\leq 100 \text{ nS}$ (CABLE 1 m END)
@ 18000
- 7-7) FREQUENCY RESPONSE (A, B, C) $0 \sim 42000 \text{ r/min.}$
- 7-8) BY-PASS CAPACITOR $0.15 \mu\text{F}$
(CONNECTED BETWEEN 0 V, +5 V AND CASE)

REFERENCE
ONLY

[8] OUTPUT WAVEFORM AND DIVISION ACCURACY

- 8-1) PITCH $1.0T \pm 0.2T$ ($T=360^\circ/1024$)
- 8-2) SYMMETRY $X1+X2=0.5T \pm 0.2T$
 $X2+X3=0.5T \pm 0.2T$
- 8-3) PHASE SHIFT $X_n \geq 0.09T$ ($n=1, 2, 3, 4$)
- 8-4) SIGNAL WIDTH OF C CHANNEL $T_M=0.5 \sim 4T$
(POSITIONAL RELATIONSHIP OF A&B CHANNELS
AND C CHANNEL IS NOT SPECIFIED)



THIS FIGURE SHOWS THE WAVEFORMS WHEN A GEAR IS ROTATED CW VIEWING INDEX SLIT SIDE.

PROVIDE

PHOTO

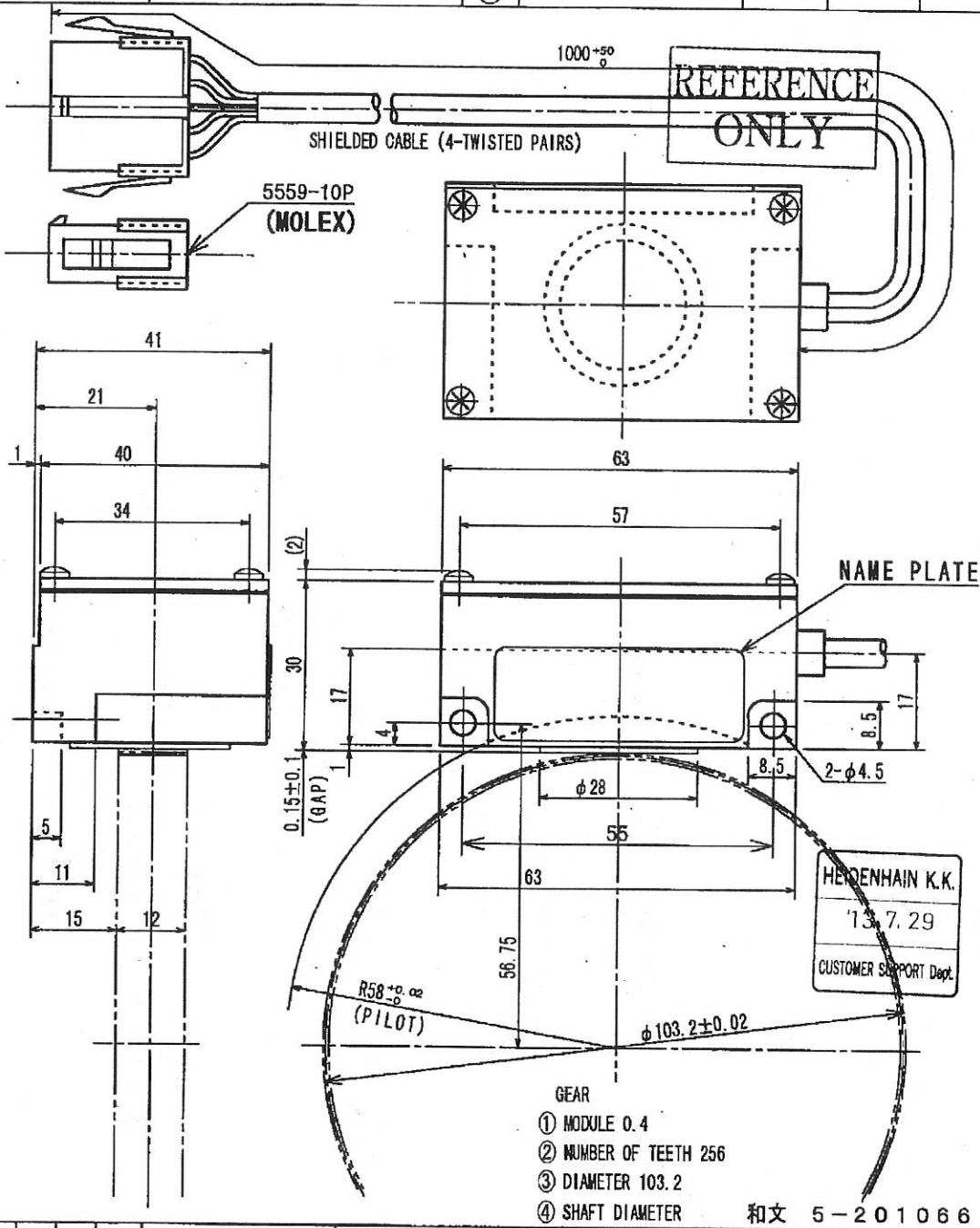
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'13. 7. 29
CUSTOMER SUPPORT Dept.

WARE.H.	DRAWN BY JUL. 9. 1999 H. Kanno	CHECKED BY JUL. 9. '99 K. Chibuya	APPROVED BY JUL. 9. '99 M. Yamashita	DRAWING No. SSUMTAK 5 S P - 0 0 8 1	2 3
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TITLE	REV.	REVISIONS	DATE	REVISED	APPROVED																																															
<div style="float: left; width: 15%; border: 1px solid black; padding: 2px;"> 1800-SSS 3 3 </div> <div style="float: right; border: 1px solid black; padding: 5px; margin-top: 20px;"> REFERENCE ONLY </div> <p>[9]CABLE AND CONNCTION</p> <p>9-1)CABLE 5GP-0023 (4-TWISTED PAIRS, PACKAGE SHIELD)</p> <p>9-2)CABLE LENGTH 1000 $\begin{smallmatrix} +50 \\ 0 \end{smallmatrix}$ mm</p> <p>9-3)CABLE DIAMETER ϕ 5 mm</p> <p>9-4)CONNECTOR 5559-10P (MOLEX)</p> <p>9-5)MATCHING CONNECTOR 5559-10R 1PC (MOLEX) (ATTACHED) 5556 T2L 10 pcs (MOLEX)</p> <p>9-6)CONNECTION</p> <table border="1" style="width:100%; border-collapse: collapse; margin: 10px 0;"> <thead> <tr> <th>PIN No.</th> <th>SIGNAL</th> <th>SYMBOL</th> <th>COLOR OF CABLE</th> </tr> </thead> <tbody> <tr><td>1</td><td>+5 V</td><td>Vcc</td><td>WHITE</td></tr> <tr><td>2</td><td>0 V</td><td>0 V</td><td>BLACK</td></tr> <tr><td>3</td><td>A</td><td>PCA</td><td>RED</td></tr> <tr><td>4</td><td>\bar{A}</td><td>*PCA</td><td>PINK</td></tr> <tr><td>5</td><td>B</td><td>PCB</td><td>GREEN</td></tr> <tr><td>6</td><td>\bar{B}</td><td>*PCB</td><td>BLUE</td></tr> <tr><td>7</td><td>C</td><td>PCC</td><td>YELLOW</td></tr> <tr><td>8</td><td>\bar{C}</td><td>*PCC</td><td>ORANGE</td></tr> <tr><td>9</td><td>-</td><td>-</td><td>-</td></tr> <tr><td>10</td><td>-</td><td>SS</td><td>SHIELD</td></tr> </tbody> </table> <p style="text-align: center;">※SHIELD IS NOT CONNECTED TO THE CASE.</p> <p>[10]WARRANTY SUMTAK WARRANTS ITS NEW PRODUCTS AGAINST DEFECTS IN MATERIALS AND WORKMANSHIP UNDER NORMAL USE AND SERVICE FOR PERIOD OF ONE (1) YEAR FROM THE DATE OF ORIGINAL SHIPMENT.</p> <div style="text-align: right; margin-top: 20px;"> <table border="1" style="border-collapse: collapse;"> <tr><td style="padding: 2px;">HEIDENHAIN K.K.</td></tr> <tr><td style="text-align: center; padding: 2px;">'13. 7. 29</td></tr> <tr><td style="padding: 2px;">CUSTOMER SUPPORT Dept.</td></tr> </table> </div>						PIN No.	SIGNAL	SYMBOL	COLOR OF CABLE	1	+5 V	Vcc	WHITE	2	0 V	0 V	BLACK	3	A	PCA	RED	4	\bar{A}	*PCA	PINK	5	B	PCB	GREEN	6	\bar{B}	*PCB	BLUE	7	C	PCC	YELLOW	8	\bar{C}	*PCC	ORANGE	9	-	-	-	10	-	SS	SHIELD	HEIDENHAIN K.K.	'13. 7. 29	CUSTOMER SUPPORT Dept.
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WARE.H	DRAWN BY JUL. 9. 1999 H. Kanono	CHECKED BY Jul. 9. 1999 K. Shibuya	APPROVED BY Jul. 9. 1999 M. Yamashita	DRAWING No. SSUMTAK 5SP-0081	3 3																																															

DRAWING NO.
5-201066

CONNECTION DRAWING NO.	MARK	REVISIONS	DATE	REVISED BY	APPROVED BY
	○				
	○				
	○				



HEDENHAIN K.K.
'13.7.29
CUSTOMER SUPPORT Dept.

- GEAR
- ① MODULE 0.4
 - ② NUMBER OF TEETH 256
 - ③ DIAMETER 103.2
 - ④ SHAFT DIAMETER

和文 5-201066

PROVIDE									
	D	C	B	A	DWG. NO. . TYPE. NORM.	NAME OF PART	MATERIAL	DIMENSIONS	REMARKS
					TYPE	DRAWN BY		CHECKED BY	Jul. 9. '99 K. Ohbayashi
PHOTOGRAPH					MSK-015-1024-00	DESIGNED BY	Jul. 8. 1999 H. Kanno	APPROVED BY	Jul. 9. '99 M. Yamashita
					SUMITAK CO., LTD.			UNITS	3RD. ANGLE
					SCALE	TITLE		mm	PROJECTION
WAREHOUSING					1 / 1	MAGNETIC ENCODER EXTERNAL VIEW	DRAWING NO.		
							5-201066		