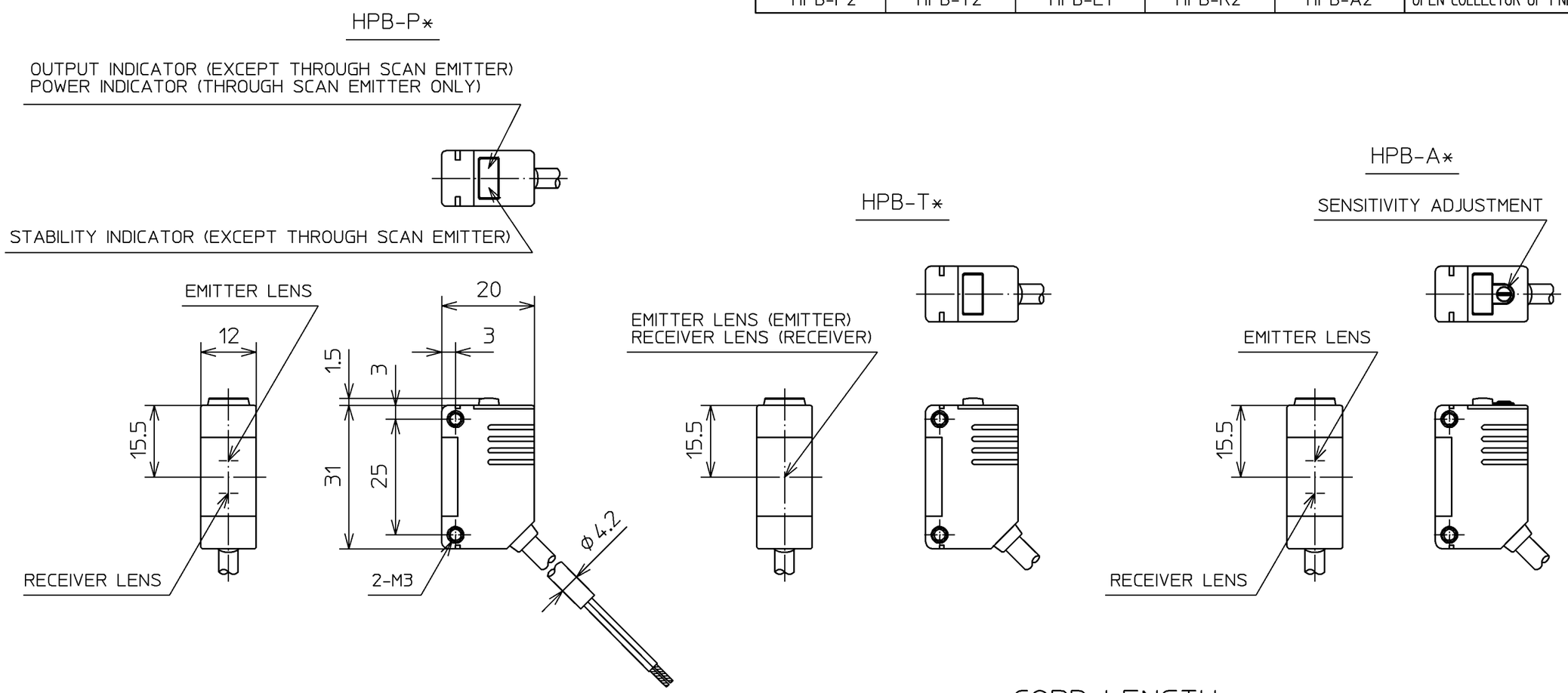
Yamatake Corporation

製品仕様書
SPECIFICATIONS

POLARIZED RETROREFLECTIVE SCAN	THROUGH SCAN			DIFFUSE SCAN	OUTPUT
	SET	EMITTER	RECEIVER		
HPB-P1	HPB-T1	HPB-E1	HPB-R1	HPB-A1	OPEN COLLECTOR OF NPN TRANSISTOR
HPB-P2	HPB-T2	HPB-E1	HPB-R2	HPB-A2	OPEN COLLECTOR OF PNP TRANSISTOR

DIMENSIONS



CORD LENGTH

CATALOG LISTING	CORD LENGTH
HPB-**	2000min
HPB-**-L05	5000min
HPB-**-L10	10000min

3 LENS DIAMETER
- POLARIZED RETROREFLECTIVE SCAN : φ7
- THROUGH SCAN : φ9
- DIFFUSE SCAN : φ8

2 CORD
- OIL RESIST 0.2mm^2
- COLOR GRAY (EXCEPT THROUGH SCAN EMITTER)
  BLACK (THROUGH SCAN EMITTER ONLY)

NOTE 1 MATERIAL
- CASE : PC/ABS RESIN ALLOY/BLACK
- LENS : PC RESIN (EXCEPT POLARIZED RETROREFLECTIVE SCAN)
  PMMA RESIN (POLARIZED RETROREFLECTIVE SCAN ONLY)

改番 REV.	来歴 RECORD	日付 DATE	担当 BY	検閲 APPD.
03	JE099-2166	10-6 '99	T.K.	T.N
02	JE099-2013	6-15 '99	Y.N	T.N
01	JE098-2111	7-30 '98	T.K	T.N

作成DR. T.Koike Dec.8 '97		尺度SCALE 1:1	記入のない公差 TOL. UNLESS NOTED ±0.8 ±2°
検図CHK. H.Matsuno 12-26 '97	形番 MODEL	HPB SERIES	
認可APPD S.Nonaka 12-26 '97	名称 NAME	PHOTOELECTRIC SWITCH	
日付DATE	図番 NO.	AD41940E	改番REV. 03 1/2

SR. No.

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2	03

Yamatake Corporation

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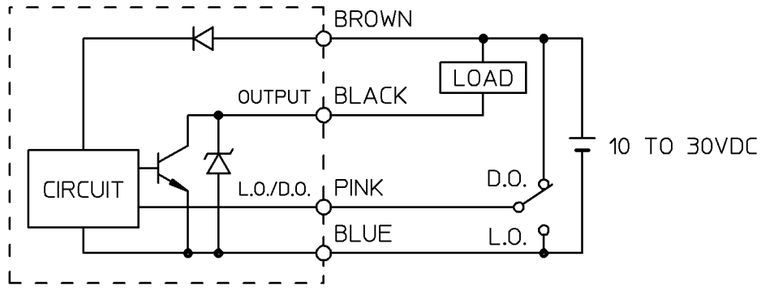
SPECIFICATIONS

CATALOG LISTING	HPB-P1	HPB-P2	HPB-T1	HPB-T2	HPB-A1	HPB-A2
SCANNING TYPE	POLARIZED RETROREFLECTIVE SCAN		THROUGH SCAN		DIFFUSE SCAN	
SUPPLY VOLTAGE	10 TO 30VDC (RIPPLE 10% max.)					
CURRENT CONSUMPTION	30mA max.		55mA max. EMITTER : 30mA max. RECEIVER : 25mA max.		30mA max.	
SCANNING DISTANCE	2.5m (REFLECTOR:FE-RR8)		10m		500mm	
TARGET	OPAQUE MATERIALS MORE THAN Ø80 (REFLECTOR:FE-RR8)		OPAQUE MATERIALS MORE THAN Ø9		WHITE PAPER (*1) 200X200mm	
OPERATING ANGLE	SENSOR : 1 TO 10° / REFLECTOR : 40° min.		2 TO 20°			
HYSTERESIS					20% max. OF SCANNING DISTANCE	
OPERATING MODE	CONVERTIBLE LIGHT OPERATED / DARK OPERATED CHANGEOVER TERMINAL CONNECTED TO 0V OR LEFT OPEN : LIGHT OPERATED / CONNECTED TO Vcc : DARK OPERATED					
OUTPUT MODE	HPB-*1 : OPEN COLLECTOR ON NPN TRANSISTOR HPB-*2 : OPEN COLLECTOR ON PNP TRANSISTOR					
OUTPUT	LOAD CURRENT:100mA (RESISTIVE LOAD),OUTPUT WITHSTAND VOLTAGE:30V,SATURATION VOLTAGE:2V max. (AT 100mA LOAD CURRENT) SHORT CIRCUIT PROTECTION					
RESPONSE TIME	1ms max.		1.5ms max.		1ms max.	
LIGHT SOURCE	RED LED		INFRARED LED			
INDICATOR	EXCEPT HPB-E1 : ORANGE 'ON' WITH OUTPUT / GREEN 'ON' WITH STABLE LIGHT HPB-E1 : ORANGE 'ON' WITH POWER ON					
AMBIENT LIGHT	INCANDESENT LIGHT : 5000lx max. / SUNLIGHT : 20000lx max.					
OPERATING TEMPERATURE	-25 TO +60°C					
STORAGE TEMPERTURE	-40 TO +70°C					
HUMIDITY	35 TO 85%RH (WITHOUT CONDENSATION)					
INSULATION RESISTANCE	20MΩ min. (AT 500VDC)					
DIELECTRIC STRENGTH	1000VAC 50/60Hz 1MINUTE					
VIBRATION	10 TO 55Hz 1.5mm DOUBLE AMPLITUDE 2HOURS IN EACH DIRECTION OF X,Y,Z					
SHOCK	500m/s^2 10TIMES IN EACH DIRECTION OF X,Y,Z					
SEALING	IP67 (IEC STANDARD)					
WEIGHT	APPROX.60g (ONLY SENSOR WITH CABLE 2m)					
PROTECTION	FALSE PULSE PROTECTION (50ms typ.) REVERSE POLARITY PROTECTION					
EMC	EN61000-4-2:1995	LEVEL 3				
	ENV50140:1993	LEVEL 3				
	ENV50204:1995	LEVEL 3				
	EN61000-4-4:1995	LEVEL 3				
	IEC255-5:1977	LEVEL 1				
	ENV50141:1993	LEVEL 3				

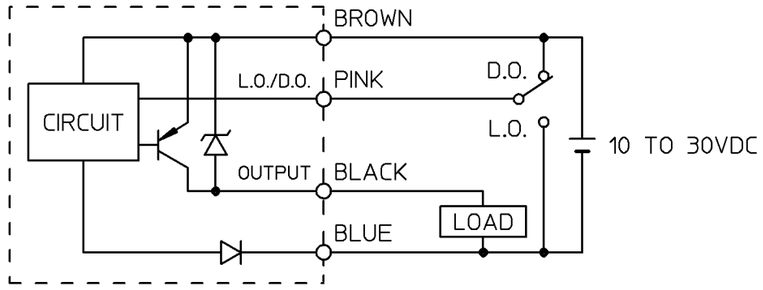
*1 KODAK GRAYCARD 90%

WIRING

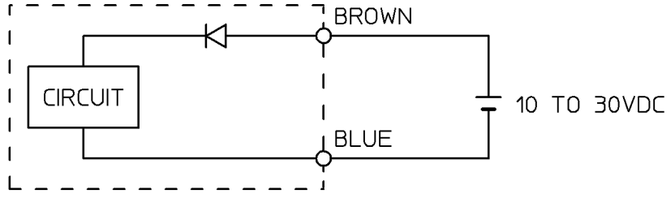
NPN TYPE : POLARIZED RETROREFLECTIVE SCAN
THROUGH SCAN RECEIVER
DIFFUSE SCAN



PNP TYPE : POLARIZED RETROREFLECTIVE SCAN
THROUGH SCAN RECEIVER
DIFFUSE SCAN



THROUGH SCAN EMITTER



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03	~	~	~	
02	~	~	~	
01	~	~	~	

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日付 DATE	図 番 NO.	AD41940E	改番 REV. 03

2/2

SR. No.

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"RESTRICTIONS ON USE"

This product has been designed, developed and manufactured for general-purpose application in machinery and equipment.

Accordingly, when used in applications outlined below, special care should be taken to implement a fail-safe and/or redundant design concept as well as a periodic maintenance program.

- Safety devices for plant worker protection
- Start/stop control devices for transportation and material handling machines
- Aeronautical/aerospace machines
- Control devices for nuclear reactors

Never use this product in applications where human safety may be put at risk.