

1		2		3		4		5		6	
METRIC IF IN DOUBT ASK		SRH220DR PERFORMANCE									
ELECTRICAL DATA											
MEASUREMENT RANGE SUPPLY VOLTAGE SUPPLY CURRENT SUPPLY REVERSE POLARITY PROTECTION SHORT CIRCUIT PROTECTION, OUTPUT TO GROUND SHORT CIRCUIT PROTECTION, OUTPUT TO SUPPLY OVER VOLTAGE PROTECTION POWER ON SETTLEMENT RESOLUTION		20° TO 360° IN 1° INCREMENTS. 9V TO 30Vdc UNREGULATED AND 5V ±0.5Vdc REGULATED. ≤25mA (12.5mA PER CHANNEL). YES. YES. IN 5V REGULATED MODE ONLY. UP TO 40VOLTS (-40 TO +60°C). <1s. 12 BIT (0.025% OF MEASUREMENT RANGE).									
NON LINEARITY TEMPERATURE COEFFICIENT		± 0.4%. < ±30ppm/°C IN 5V REGULATED MODE. < ±110ppm/°C IN 9 - 30V MODE.									
OUTPUT OPTIONS DIRECTION		RATIOMETRIC ANALOGUE, PWM OR ABSOLUTE ANALOGUE. FACTORY PROGRAMMED TO INCREASE OR DECREASE WITH CW SHAFT ROTATION.									
A1, A6 (0.5 to 4.5V) VOLTAGE OUTPUT RANGE (9-30V SUPPLY) VOLTAGE OUTPUT RANGE (5V SUPPLY) MONOTONIC RANGE		ABSOLUTE VOLTAGE FROM 0.5 TO 4.5V OVER MEASUREMENT RANGE, (± 3%). RATIOMETRIC OUTPUT VOLTAGE FROM 10% TO 90%, (± 1%) OF V SUPPLY OVER MEARSUREMENT RANGE. 0.25V (5%) AND 4.75V (95%) NOMINAL.									
A4, A7 (0.1 to 4.9V) VOLTAGE OUTPUT RANGE (9-30V SUPPLY) VOLTAGE OUTPUT RANGE (5V SUPPLY) MONOTONIC RANGE		ABSOLUTE VOLTAGE FROM 0.1 TO 4.9V OVER MEASUREMENT RANGE, (± 3%). RATIOMETRIC OUTPUT VOLTAGE FROM 2% TO 98%, (± 1%) OF V SUPPLY OVER MEARSUREMENT RANGE. 0.05V (1%) AND 4.95V (99%) NOMINAL.									
LOAD RESISTANCE OUTPUT NOISE INPUT/ OUTPUT DELAY		10Kohms MINIMUM (RESISTIVE TO GROUND). ≤1mV RMS. 2.5ms TYP, 0.15ms (SEE ORDERING CODE).									
P1, P2 AND P3 OUTPUT OPTION PWM FREQUENCY		244Hz, (STANDARD) ± 20% OVER TEMPERATURE RANGE. FOR 500Hz AND 1KHz SEE ORDERING CODE. 0V AND 5V NOMINAL, (± 3%). 0V AND V SUPPLY, (± 1%). 10% TO 90% OVER MEASUREMENT RANGE. 5% 95% NOMINAL. 10Kohms MINIMUM (RESISTIVE TO GROUND). <15 MICROSECONDS TYPICAL.									
PWM LEVELS (9-30V SUPPLY) PWM LEVELS (5V SUPPLY) DUTY CYCLE MONOTONIC RANGE LOAD RESISTANCE RISE/FALL TIME (244, 500 AND 1000Hz)											
MECHANICAL DATA											
MECHANICAL ANGLE TORQUE MAXIMUM OPERATING SPEED WEIGHT MOUNTING PHASING		360° CONTINUOUS 120 gm.cm. 3600°/SECOND. 51gms. 2 x M4 SCREWS. SEE FIG 1.									
ENVIRONMENTAL DATA											
OPERATIONAL TEMPERATURE RANGE (5V SUPPLY) OPERATIONAL TEMPERATURE RANGE (9 TO 30V SUPPLY)		-40 TO + 140°C, (SEE FIG. 3). -40 TO +135.7°C WITH V SUPPLY = 9Vdc, (SEE FIG.3). DERATE UPPER LIMIT BY 1.7°C FOR EACH 1V INCREASE IN V SUPPLY, e.g. -40 TO +100°C WITH V SUPPLY = 30Vdc, (SEE NOTE BELOW). NOTE. EXCESSIVE TEMPERATURE WILL CAUSE THE INTERNAL VOLTAGE REGULATOR TO SHUT DOWN TO PROTECT THE CIRCUIT FROM DAMAGE DUE TO OVERHEATING.									
SEALING		AMP CONNECTOR (WHEN FULLY MATED) - IP68. DEUTSCH CONNECTOR (WHEN FULLY MATED)- IP67.									
TESTED TO: STORAGE TEMPERATURE VIBRATION SHOCK LIFE ELECTROMAGNETIC INTERFERENCE EMC		-55 TO +140°C. BS EN 60068-2-64; 1995 SEC 8.4 (31.4 gn rms,) 20 TO 2000Hz RANDOM. 3 METRE DROP ONTO CONCRETE AND 2500g. 20 MILLION OPERATIONS, (10 MILLION CYCLES OF +/- 75°). BS EN 61000-4-3 (1999) TO (100V/METRE), 80MHz TO 1GHz AND 1.4GHz TO 2.7GHz. COMPLIES TO DIRECTIVE 2004/108/EC									
OEM OPTIONS		NON LINEAR LAW, SWITCH OUTPUTS, CLAMP VOLTAGES, ALTERNATIVE PWM FREQUENCIES, DIFFERENT OUTPUT PHASING CHI/CH2, DIFFERENT INPUT/OUTPUT DELAY OPTIONS.									
SCALE		IF CONTROL DIMENSIONS (Kc) ARE SPECIFIED THEY ARE TO BE SUBJECT TO 100% INSPECTION OR STATISTICAL PROCESS CONTROL.		D No		MATERIAL		TOLERANCES: IN-LINE WITH PENNY & GILES STANDARDS 55-301 SURFACE TEXTURE VALUES IN MICROMETRES (nm) TO BS1134:PT2. ALL MACHINED SURFACES TO BE 1.6		TITLE	
UNLESS STATED		FIRST USED ON						ALL SCREW THREADS TO BS3643 PT.2: EXTERNAL CLASS: 6g INTERNAL CLASS: 6H		DUAL REDUNDANT, SEALED ROTARY HALL SENSOR WITH AMP 1.5 SUPERSEAL OR DEUTSCH 'DT' CONNECTOR.	
THIRD ANGLE PROJECTION TO BS 8888		MASS (g)		VOL. (mm ³)		REF.		FINISH		CLEAN	
</											

FIG. 2 OUTPUT LAW FOR 3 DIFFERENT ANGLES.

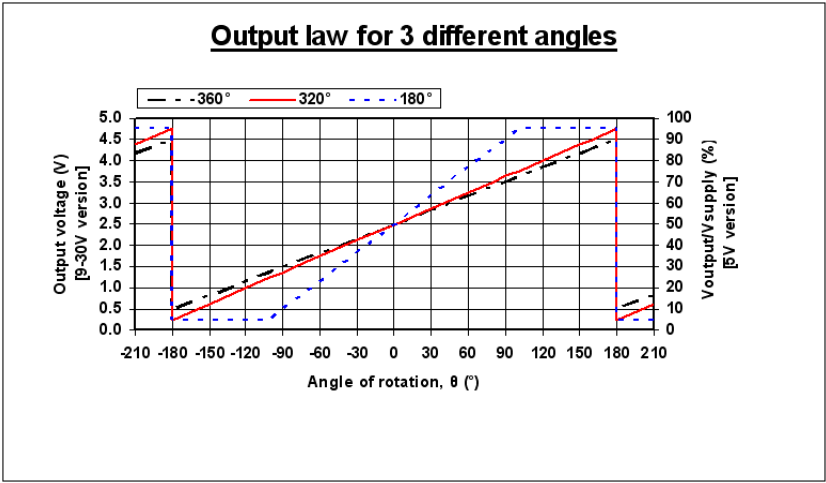


FIG. 3 MAXIMUM OPERATING TEMPERATURE DERATING.

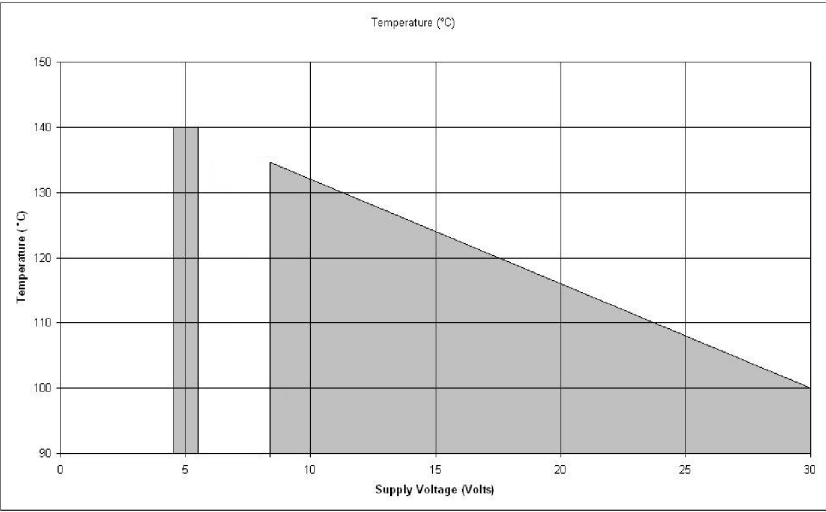
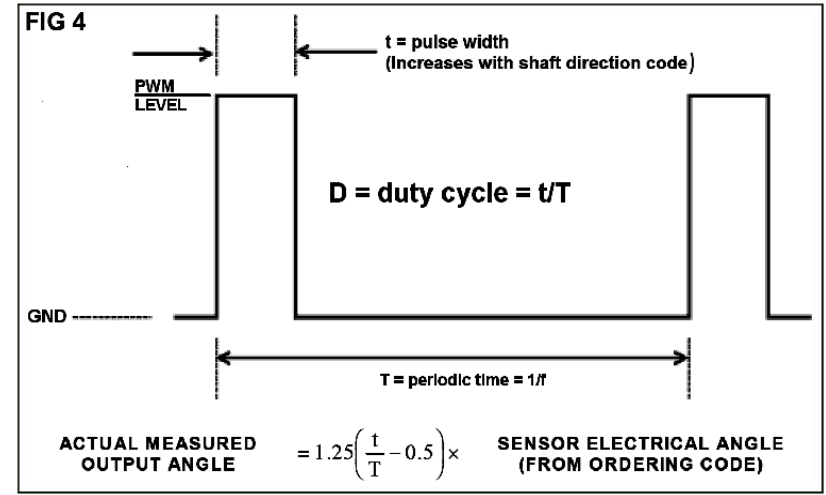


FIG. 4 PWM OUTPUT CHARACTERISTICS.



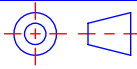
1		2		3		4		5		6					
METRIC IF IN DOUBT ASK		ISS		DATE		DRAWN		ECR No.		CHK		APP			
		3A		17/05/10		K.T		10593/9		M.B		M.B			
SRH220DR PERFROMANCE A2 (0 - 10V) OUTPUT OPTION															
ELECTRICAL DATA															
MEASUREMENT RANGE		20° TO 360° IN 1° INCREMENTS													
SUPPLY VOLTAGE		13.5 -30Vdc UNREGULATED													
SUPPLY CURRENT		≤ 30mA (15mA PER CHANNEL).													
SUPPLY REVERSE POLARITY PROTECTION		YES													
OUTPUT SHORT CIRCUIT PROTECTION TO GND		YES													
OUTPUT SHORT CIRCUIT PROTECTION TO SUPPLY		YES													
POWER ON SETTLEMENT		≤ 10ms													
RESOLUTION		12 BIT (0.025% OF MEASUREMENT RANGE)													
NON-LINEARITY		≤ 0.4% OF RANGE													
TEMPERATURE COEFFICIENT		<±125PPM/°C													
OVER VOLTAGE PROTECTION		UP TO 40V (-40 TO +60°C)													
OUTPUT(FIG 5)															
DIRECTION		FACTORY PROGRAMMED TO INCREASE OR DECREASE WITH CW SHAFT ROTATION													
A2 OUTPUT															
VOLTAGE OUTPUT RANGE		NOMINALLY 0.2Vdc TO 9.8Vdc (±0.2V)													
LOAD RESISTANCE		10KΩ MINIMUM (RESISTIVE TO GND)													
OUTPUT NOISE		<1 mVRrms													
INPUT / OUTPUT DELAY		3.5 ms													
MECHANICAL DATA															
MECHANICAL ANGLE		360° CONTINUOUS													
TORQUE		120gm.cm.													
WEIGHT		51gms													
MOUNTING		2 x M4 SCREWS													
PHASING		SEE FIG 1.													
ENVIRONMENTAL															
OPERATIONAL TEMPERATURE RANGE (FIG 6)		-40 TO 115°C WITH VSUPPLY = 13.5VDC DERATE UPPER TEMPERATURE LIMIT BY 0.91°C FOR EACH 1VDC INCREASE IN VSUPPLY E.G. -40 TO 100°C WITH VSUPPLY = 30VDC NOTE: EXCESSIVE TEMPERATURE WILL CAUSE THE INTERNAL VOLTAGE REGULATOR TO SHUT DOWN TO PROTECT THE CIRCUIT FROM DAMAGE THROUGH OVERHEATING.													
SEALING		AMP CONNECTOR (WHEN FULLY MATED) – IP68 DEUTSCH CONNECTOR (WHEN FULLY MATED) – 1P67													
TESTED TO:															
STORAGE TEMPERATURE		-55 TO 140°C													
VIBRATION		BS EN 60068-2-64; 1995 SEC 8.4 (31.4 gn rms) 20 TO 2000HZ RANDOM													
SHOCK		3M DROP ONTO CONCRETE AND 2500g HIGHSHOCK													
LIFE		20 MILLION OPERATIONS, (10 MILLION CYCLES OF +/- 75°).													
ELECTROMAGNETIC INTERFERENCE		BS EN 61000-4-3(1999) TO 100V/M, 80MHZ TO 1GHZ AND 1.4GHZ TO 2.7GHZ													
EMC		COMPLIES TO DIRECTIVE 2004/108/EC													
SCALE		IF CONTROL DIMENSIONS (Kc) ARE SPECIFIED THEY ARE TO BE SUBJECT TO 100% INSPECTION OR STATISTICAL PROCESS CONTROL.		D No		MATERIAL		TOLERANCES: IN-LINE WITH PENNY & GILES STANDARDS 55-301 SURFACE TEXTURE VALUES IN MICROMETRES (μm) TO BS1134:PT2. ALL MACHINED SURFACES TO BE 1.6/√		TITLE		PENNY + GILES		A3	
UNLESS STATED				FIRST USED ON				ALL SCREW THREADS TO BS3643 PT.2: EXTERNAL CLASS: 6g INTERNAL CLASS: 6H		DUAL REDUNDANT, SEALED ROTARY HALL SENSOR WITH AMP 1.5 SUPERSEAL OR DEUTSCH 'DT' CONNECTOR.		PART NUMBER:		SHT 3 OF 3 SHTS	
		MASS (g)		VOL. (mm³)		REF.		FINISH		CLEAN		SRH220DR			
THIRD ANGLE PROJECTION TO BS 8888															
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FIG 5 OUTPUT LAW FOR 4 DIFFERENT ANGLES

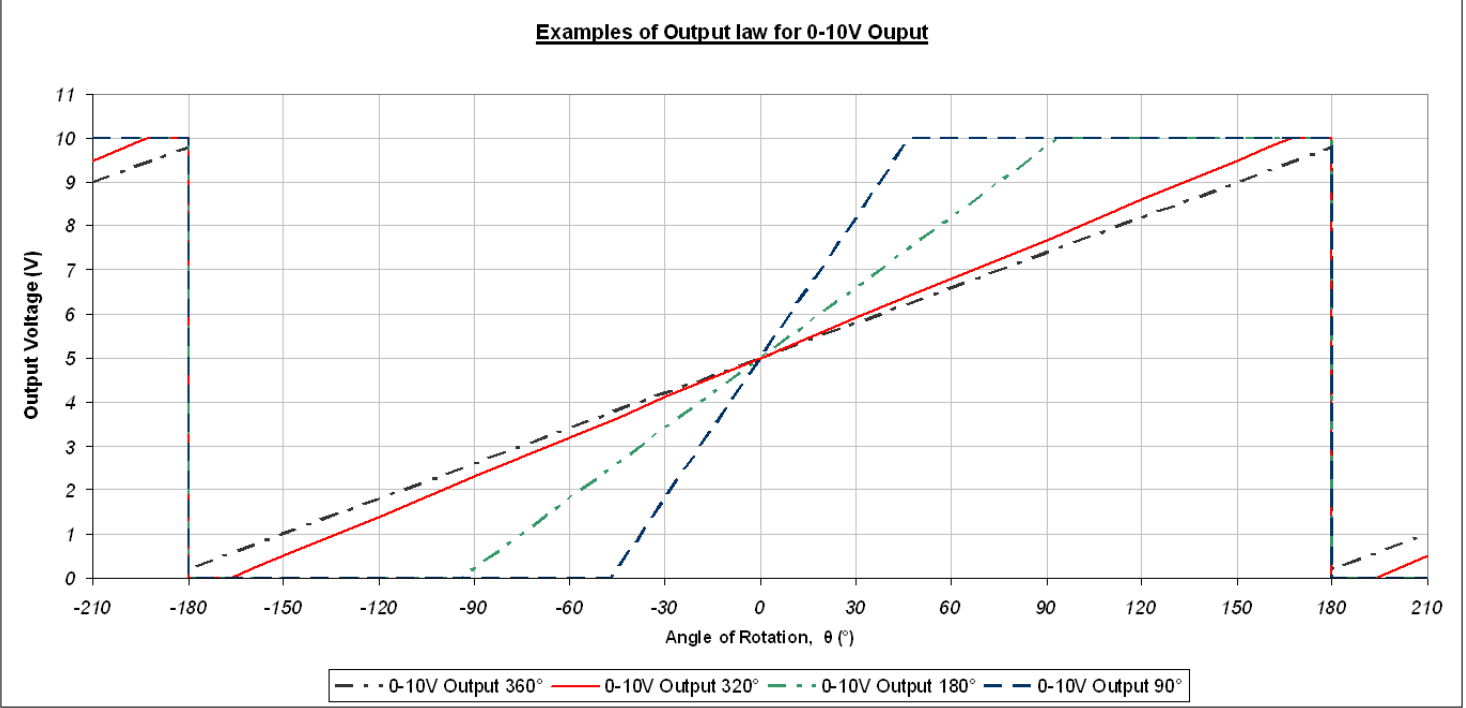


FIG 6 MAXIMUM TEMPERATURE DERATING

