AP58

PROGRAMMABLE PHOTOELECTRIC INCREMENTAL ROTARY ENCODER

The programmable photoelectric incremental rotary encoder AP58 is used to establish an informational link between the key machine components, industrial robots, comparators and NC or DRO units.

The encoder is used in automatic control, on-line gauging, process monitoring systems, etc.

The AP58 programmable incremental encoder can be programmed to set desired pulse number per revolution from 1 to 65536. This f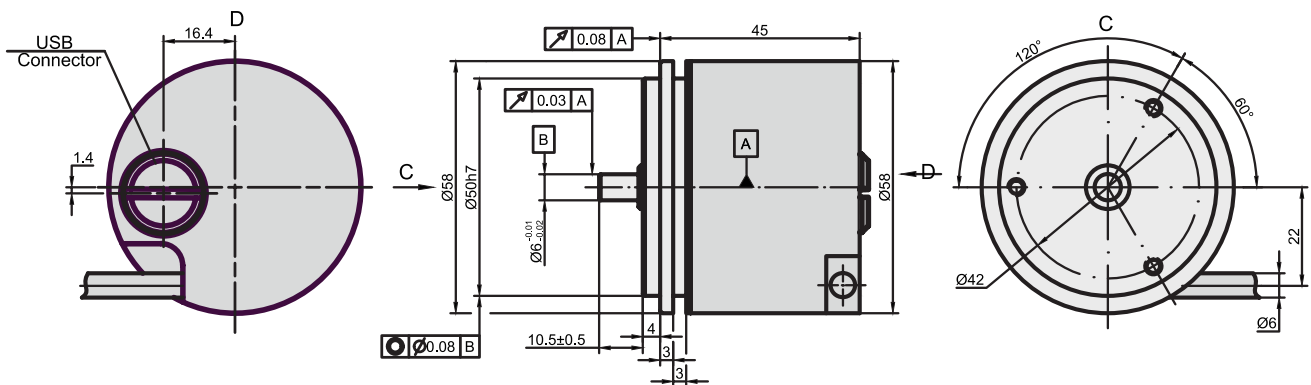unction makes it an universal incremental encoder that perfectly suits specific needs in many applications and machines.

The programming tool consists of a USB cable and Windows compatible software.

The program is supplied for free and can be found on Precizika Metrology web-site and installed in any PC fitted with a Windows operating system (Windows XP or later).
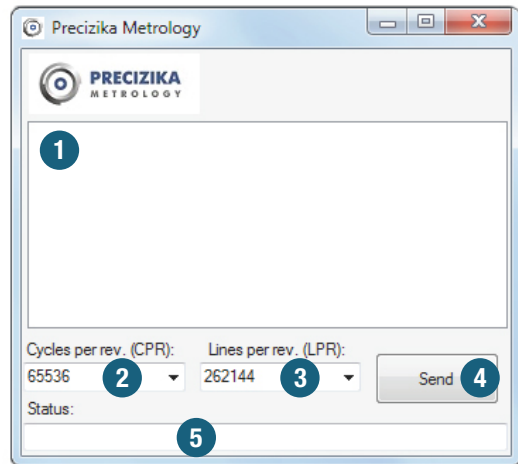
MECHANICAL DATA

Pulse number per shaft revolution	from 1 to 65536
Maximum shaft speed: Maximum shaft load: - axial - radial (at shaft end)	12000 rpm 10 N 20 N
Accuracy (T1-period of lines on disc in arc. sec.)	$\pm 0.1 T_1$ arc. sec
Starting torque at 20°C	≤ 0.01 Nm
Rotor moment of inertia	< 15 gcm
Protection (IEC 529)	IP64

Maximum weight without cable	0.25 kg
Operating temperature	-10...+70 $^{\circ}$C
Storage temperature	-30...+80 $^{\circ}$C
Maximum humidity (non-condensing)	98 %
Permissible vibration (55 to 2000 Hz)	≤ 100 m/s^2
Permissible shock (11 ms)	≤ 1000 m/s^2

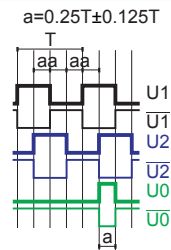| Encoder type	L1	Other dimensions
A58M	45 mm	See A58 series data sheet
A58B	48,5 mm	See A58 series data sheet
A58C	51 mm	See A58 series data sheet
A58C2	48,5 mm	See A58 series data sheet
A58C3	54 mm	See A58 series data sheet
A58D	41,5 mm	See A58 series data sheet

SOFTWARE

1. List of encoders connected for multi-programming

2. Number of Cycles Per Revolution (CPR) in the drop-down menu

3. Number of lines Per Revolution (LPR) in the drop-down menu

4. Program the encoder according to desired parameters

5. Current operation status indication field

ELECTRICAL DATA

VERSION	AP58-F ⊓⊔ TTL; ⊓⊔ HTL
Power supply - Max. supply current (without load)	+5 V ± 5 %; +(10 to 30) V
Light source	LED
Incremental signals	Differential square-wave U1/$\overline{U1}$ and U2/$\overline{U2}$. Signal levels at 20 mA load current: - low (logic "0") < 0.5 V at U_P=+5 V - low (logic "0") < 1.5 V at U_P=10 to 30 V - high (logic "1") > 2.4 V at U_P=+5 V - high (logic "1") > (UP-2) V at U_P=10 to 30 V
Reference signal	One differential square-wave U0/$\overline{U0}$ per revolution.
Maximum operating frequency	< 2 MHz
Direction of signals	U2 lags U1 for clockwise rotation (viewed from shaft side)
Maximum rise and fall time	< 0.5 µs
Standard cable length	1m, without connector
Maximum cable length	25m
Output signals	

$a=0.25T\pm0.125T$

Note:

1. *Maximum working rotation speed (with proper encoder counting) is limited by maximum operating frequency and maximum mechanical rotation speed.*

2. *If cable extension is used, power supply conductor cross-section should not be smaller than 0.5 mm².*

ACCESSORIES

CONNECTORS FOR CABLE	B12 12-pin round connector	C12 12-pin round connector	D9 9-pin flat connector	D15 15-pin flat connector	RS10 10-pin round connector	ONC 10-pin round connector

COUPLING	SC30

ORDER FORM

AP58X - XXXX - XXX - XXX/X - X

TYPE:	PULSE NUMBER PER REVOLUTION:	SUPPLY VOLTAGE:	CABLE LENGTH:	CONNECTOR TYPE:	COUPLING:
M - A58 B - A58B C - A58C C2 - A58C2 C3 - A58C3 D - A58D	1 ... 65536	05V - +5V 30V - +(10 to 30) V* *only for AP58M with HTL output	AR 01 - 1m AR 02 - 2m AR 03 - 3m ...	W - without connector D9 - flat, 9 pins C12 - round, 12 pins RS 10 - round, 10 pins	0 - without coupling 1 - with coupling
ORDER EXAMPLES:	1) AP58-1024-05V-AR01/W -0 2) AP58B-2500-05V -AR03/W -1 3) AP58-16384-30V-AR01/W -1				