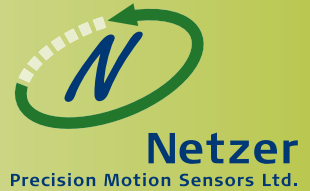


DL-25

Absolute position, rotary Electric Encoder™



The DL-25 is a member of the DL series of Electric Encoders, based on Netzer Precision proprietary technology. These encoders offer many advantages, some unparalleled:

- IP-65
- High precision.
- High tolerance to temperature, shock, moisture, EMI, RFI and magnetic fields.
- Digital SSI output.

The DL-25 is suited to demanding application such as: aerospace, medical, instrumentation, automation, etc.



The internally shielded, DC operated Electric Encoder™ includes an electric field generator, a field receiver, a sinusoidal shaped dielectric rotor, and processing electronics.

The outputs signals of Electric Encoder™ are analog Sine / Cosine representing the rotation angle or digital outputs presenting the absolute position.



Mechanical

Total weight	25 gr
Outer diameter / profile	25 / 20 mm
Material , case / shaft	Aluminum / Stainless steel
Starting torque	30×10^{-4} N.m
Shaft radial force (max)	100 N

Electrical

Supply voltage	$5V \pm 5\%$
Current consumption	~ 180 mA
Interconnection	250 mm AWG-30 shielded cable (1.5m max)

Environment - common to all types

EMC	IEC 6100-6-2, IEC 6100-6-4
Operating temperature range	-40°C to +70°C
Shock endurance	IEC 60068-2-27 ; 100 g for 11 ms
Vibration endurance	IEC 60068-2-6 ; 20 g 10 – 2000 Hz
Protection	IP 65

Performance

Electrical Cycles – Fine/Coarse channels	16/ 3
Angular resolution (using 12 bit A/D conversion)	17 bits (131,072 CPR)
Static error (with offset compensation)	< 40 mDeg (2.5 arc-sec)
Maximum operational speed	750 rpm
Measurement range	Unlimited rotation
Direction	User configuration (CW/CCW)

Outputs options

Digital	SSi
---------	-----

Digital - SSI Interface (absolute position)

DL-25

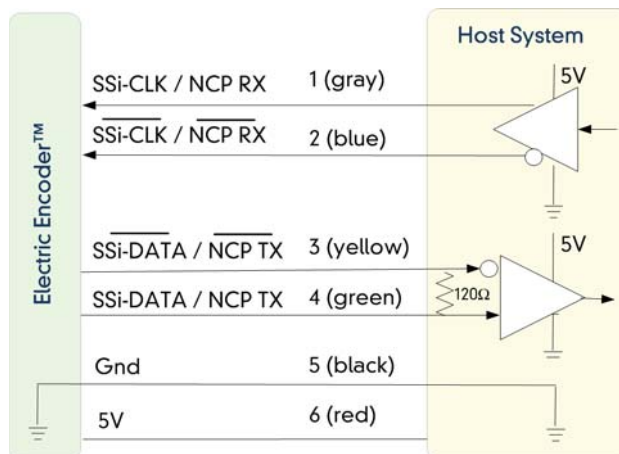
Output signal parameters

Signal latency	~250 μ Sec
Output code	Binary
Serial output SSI	Differential RS-422
Clock SSI	Differential RS-422
Monoflop time	25 μ Sec
Clock Frequency	0.5 \div 2.5 MHz
Position update (Max)	30KHz

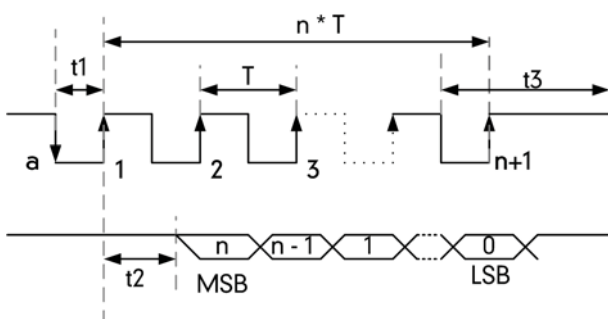
SSI - Wires color code

#	Name	Color	Function
1	Clock +	Grey	SSI Clock
2	Clock -	Blue	
3	Data -	Yellow	SSI Data
4	Data +	Green	
5	GND	Black	Ground
6	+5V	Red	Power supply

Synchronous Serial Interface (SSI) allows for serial transmission of absolute position data from the Electric Encoder™ responding to controller clock pulses. The Encoder and controller are linked by clock and data differential signal lines.

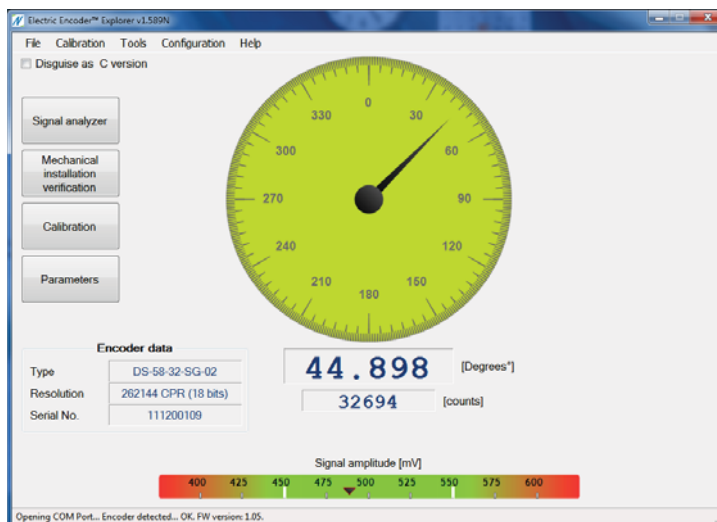


SSI data transmission timing diagram



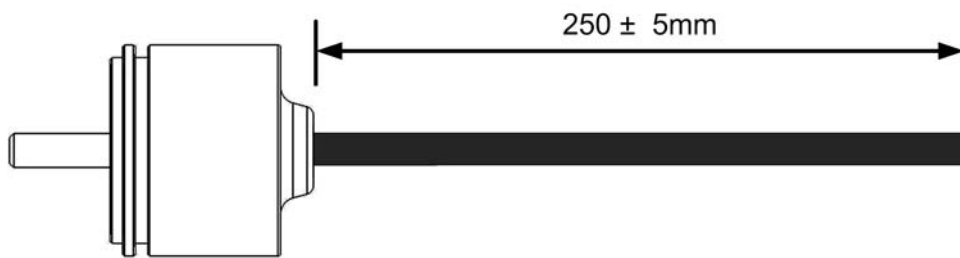
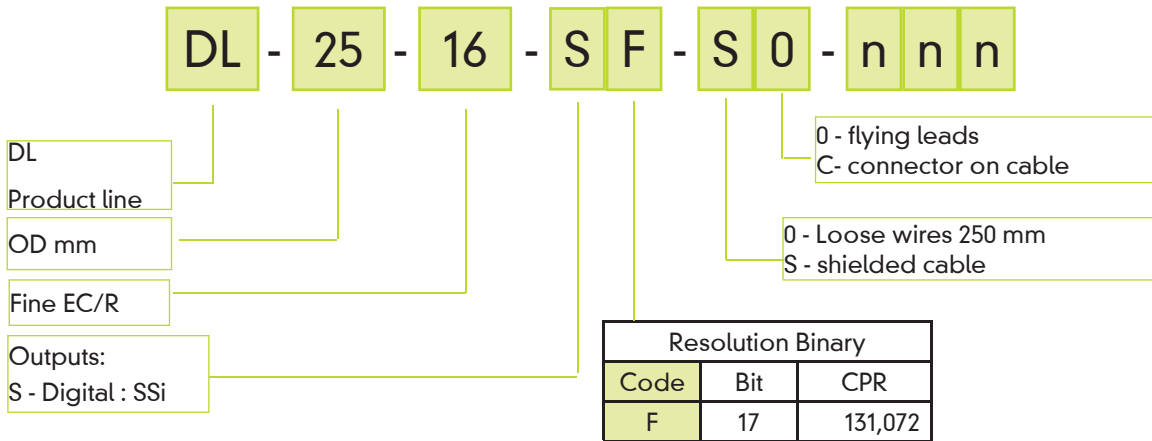
n = total number of data bits.
 T = clock period (sec) - user defined.
 1/T = clock frequency 0.5 \div 2.5 MHz (user defined).
 t1 = minimum time required for the encoder to freeze data and preset the shift registers before receiving the first rising edge to prompt the MSB
 t2 = data transmission delay (increases with cable length)
 t3 = required delay to refresh position data between subsequent position reads.

Electric Encoder Explorer (windows XP / 7)
 Provides set of tools for configuration , (BIT) Build in tests - setup , Zero (index) definition.



Ordering

DL-25



Netzer Cat No.: CB00014

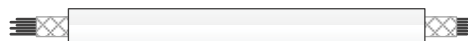
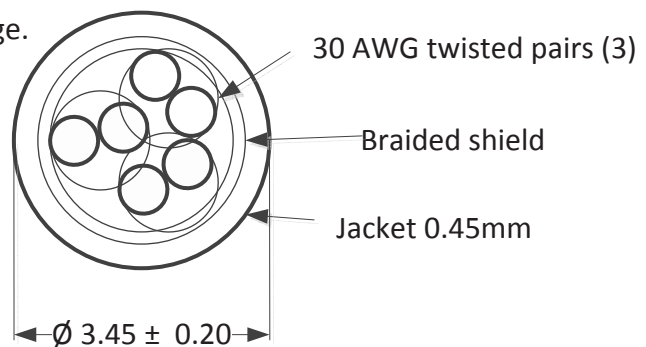
30 AWG twisted pair (3) : 2 (30 AWG 25/44 tinned copper , 0.15 PFE to $\varnothing 0.6 \pm 0.05$).

Cable: Three 30 AWG twisted pairs.

Shield: Tinned copper braided 95% min. coverage.

Jacket: 0.45 silicon rubber to $\varnothing 3.45 \pm 0.2$

Pair #	Color
1	Red / Black
2	Gray / Blue
3	Green / Yellow



DL-25

