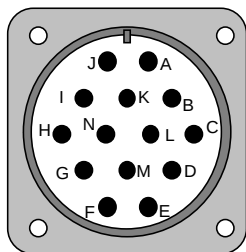


## Hollow shaft ABSOLUTE EnDat encoders ECN – EQN series



|                                                                                |                  | Single turn                               | Multi turn    | Single turn                                                                                      | Multi turn |
|--------------------------------------------------------------------------------|------------------|-------------------------------------------|---------------|--------------------------------------------------------------------------------------------------|------------|
|                                                                                |                  | ECN 425                                   | EQN 437       | ECN 413                                                                                          | EQN 425    |
| Valori posizione assoluta - <i>Absolute position values</i>                    |                  | EnDat 2.2                                 | EnDat 2.2     | EnDat 2.2                                                                                        | EnDat 2.2  |
| Codice EnDat – EnDat code                                                      |                  | EnDat 22                                  | EnDat 22      | EnDat 01                                                                                         | EnDat 01   |
| Nr. di giri totali – Total nr. of turns                                        |                  | -                                         | 4.096         | -                                                                                                | 4.096      |
| Alimentazione – <i>Power Supply</i>                                            | Vdc              | 3,6....5,25 V                             | 3,6....5,25 V | 5 V ± 5%                                                                                         | 5 V ± 5%   |
| Corrente a vuoto – <i>Current consumption without load</i>                     | mA               | ≤ 150 mA                                  | ≤ 160 mA      | ≤ 180 mA                                                                                         | ≤ 200 mA   |
| Posizioni al giro - <i>Positions per rev</i>                                   |                  | 33.554.432 (25 bits)                      |               | 8192 (13 bits)                                                                                   |            |
| Codice posizione assoluta – <i>Code for absolute position</i>                  |                  | Pure Binary                               |               | Pure Binary                                                                                      |            |
| Velocità elettrica / risoluzione<br><i>Elec. Permissible speed/at accuracy</i> |                  | ≤ 12000 rpm for continuous position value |               | 512: ≤ 5000 rpm/± 1 LSB, ≤ 12000 rpm/± 100 LSB<br>2048: ≤ 1500 rpm/± 1 LSB, ≤ 12000 rpm/± 50 LSB |            |
| Tempo di calcolo - <i>Calculation time t<sub>cal</sub></i>                     |                  | ≤ 5 μs                                    |               | ≤ 0.25 μs                                                                                        |            |
| Segnali Incrementali - <i>Incremental signals</i>                              |                  | Without                                   |               | SinCos 1 Vpp                                                                                     |            |
| Sinusidi al giro - <i>Line Counts per rev.</i>                                 |                  | -                                         |               | 512 or 2048 SinCos                                                                               |            |
| Segnali – <i>Signals</i>                                                       |                  | -                                         |               | Cos+, Sin+, Data+, RefCos, RefSin, Data-, Clock                                                  |            |
| Frequenza di taglio - <i>Cutoff freq. -3 dB</i>                                |                  | -                                         |               | 512 lines: ≤ 100 kHz, 2048 lines: ≤ 200 kHz                                                      |            |
| Accuratezza - <i>System accuracy</i>                                           |                  | ± 20"                                     |               | 512 lines: ± 60", 2048 lines: ± 20"                                                              |            |
| Cavo di collegamento – <i>Connection cable</i>                                 | m                |                                           |               | 1 m                                                                                              |            |
| Albero cavo – <i>Hollow shaft</i>                                              | mm               |                                           |               | Ø 12                                                                                             |            |
| Velocità massima - <i>Max speed</i>                                            | rpm              |                                           |               | ≤ 6000 rpm / ≤ 12000 rpm                                                                         |            |
| Inerzia – <i>Inertia</i>                                                       | kgm <sup>2</sup> |                                           |               | 4,3 x 10 <sup>-6</sup> kgm <sup>2</sup>                                                          |            |
| Vibrazioni max.– Vibrations (IEC 60068 2-6)                                    |                  |                                           |               | 55 to 2000 Hz: ≤ 300 m/s <sup>2</sup>                                                            |            |
| Temperatura max – <i>Max temperature</i>                                       |                  |                                           |               | Up = 5 V: 100°C                                                                                  |            |
| Grado di protezione – <i>Protection deg.</i>                                   |                  | IP                                        |               | IP 67 at housing; IP 64 at shaft inlet                                                           |            |
| Peso – <i>Weight</i>                                                           |                  | kg                                        |               | 0,3                                                                                              |            |

### Encoder HEIDENHAIN - EnDat01 – connettore/connector GR.20 14 pin



| PIN | Segnali - signals | Colore - color                          |
|-----|-------------------|-----------------------------------------|
| A   | ( A ) / (cos)     | verde/nero - green/black                |
| B   | ( B ) / (sin)     | blu/nero - blue/black                   |
| C   | data              | grigio -grey                            |
| D   | ( A- ) / (refcos) | giallo/nero - yellow/black              |
| E   | ( B- ) / (refsin) | rosso/nero - red/black                  |
| F   | data-             | rosa - pink                             |
| G   | clock             | viola - violet                          |
| H   | clock-            | giallo - yellow                         |
| I   | +5Vdc & sensor    | marrone/verde+blu - brown/green+blu     |
| J   | 0V & sensor       | bianco/verde+bianco - white/green+white |
| K   | shield            | schermo - shield                        |