



Encoder feedback drag-chain cable

Encoder Feedback Cable

Multi-pair + DC supply screened PUR drag-chain encoder cable



30/300 V UL AWM

Twisted Pairs + Supply

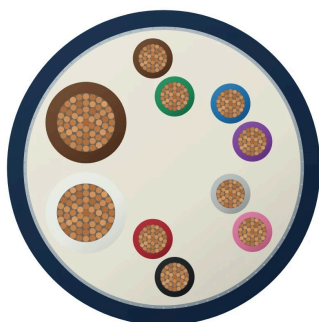
DESINA RAL 6018

Application

High-flexibility measuring-system cable combining low-capacitance PP signal twisted pairs (0.14–0.25 mm²) for differential clock/data tracks with larger 0.5–1.0 mm² DC supply cores, overall ≥ 85 % tinned copper braid and DESINA green RAL 6018 PUR jacket.

Typical uses: CNC Spindle & Linear Encoders, Semiconductor Wafer Stages, Coordinate Measuring Machines, Servo Packaging & Printing Axes, Robotics & Gantry Position Scales

Construction



Cross-section, not to scale

- 1 Signal & DC supply conductors
- 2 Low-capacitance insulation
- 3 Differential pair & supply lay-up
- 4 PTFE / fleece sliding wrap
- 5 Overall EMC braid screen
- 6 Outer motion jacket

IEC 60228 Class 6

Technical data

Typical values

Rated voltage U0/U 300 V (UL AWM) · 350 V peak (VDE)

AC test voltage 1500 V AC core/core · 1000 V AC core/screen

Screen / Field control Tinned copper braid ≥ 85 % (+ pair screens on C types)

Capacitance ≈ 50 pF/m (core/core) · ≈ 90 pF/m (core/screen)

Insulation resistance ≥ 1000 MΩ·km at 20 °C

Temperature, flexing −40 °C to +80 °C

Temperature, fixed installation −50 °C to +80 °C

Max. conductor temperature +80 °C

Min. bending radius, moving 7.5 × OD in energy chain

Min. bending radius, fixed 4 × OD

Max. travel speed 5 m/s gliding · 10 m/s unsupported

Max. acceleration Up to 50 m/s²

Oil resistance DIN EN 50363-10-2 · UL Oil Res I & II

Flame retardance IEC 60332-1-2 · UL 1581 FT1 / VW-1

Halogen-free / Smoke density IEC 60754-1/2 halogen-free PUR density

Hydrolysis & microbes Hydrolysis-resistant polyether PUR (EN ISO 846)

Standards Heidenhain / Siemens / Sick / Fanuc feedback spec

Sizes

12 standard constructions

Tick the sizes you need and send this page to info@tebaoflex.com or WhatsApp +86 185 9591 3361.

Order designation	Configuration	Typical encoder interface	Outer Ø ≈ mm	Total Cu kg/km	Weight ≈ kg/km	Min. bend R chain mm
EnDat / SSI / HIPERFACE 8–12 core encoder cables 4 sizes						
☐ ENC-FD-CP 4×2×0.14+4×0.5	4×2×0.14 + 4×0.5	Heidenhain / Incremental + 5 V Sense	8.5	48	92	64
☐ ENC-FD-CP 4×2×0.25+2×1.0	4×2×0.25 + 2×1.0	EnDat / SSI Long-Run Feedback	8.8	56	104	66
☐ ENC-FD-CP 3×2×0.14+2×1.0	3×2×0.14 + 2×1.0	Absolute EnDat / BiSS-C Encoder	7.8	42	82	58
☐ ENC-FD-CP 2×2×0.14+2×(0.5)C	2×2×0.14 + 2×(0.5)C	Sick HIPERFACE Feedback	7.6	40	78	57
SinCos 1 Vpp / TTL / Fanuc 12–18 core encoder cables 6 sizes						
☐ ENC-FD-CP 4×2×0.14+4×0.14+4×0.5	4×2×0.14 + 4×0.14 + 4×0.5	16-Pin Incremental + Commutation	9.1	58	112	68
☐ ENC-FD-CP 3×(2×0.14)C+4×0.14+2×0.5	3×(2×0.14)C + 4×0.14 + 2×0.5	Siemens SinCos 1 Vpp Measuring	9.4	66	124	70
☐ ENC-FD-CP 3×(2×0.14)C+4×0.14+4×0.22+2×0.5	3×(2×0.14)C + 4×0.14 + 4×0.22 + 2×0.5	Multi-Track SinCos + Thermal	10.2	79	146	76
☐ ENC-FD-CP 8×2×0.18	8×2×0.18	TTL / HTL 16-Core Differential	8.6	52	98	64
☐ ENC-FD-CP 10×0.14+2×0.5	10×0.14 + 2×0.5	12-Core Standard Rotary Encoder	7.9	41	84	59
☐ ENC-FD-CP 12×0.22+2×0.5	12×0.22 + 2×0.5	Fanuc / Mitsubishi Pulse Coder	8.7	54	102	65
Digital 24 V / Single-cable serial encoder cables 2 sizes						
☐ ENC-FD-CP 2×(2×0.20)C+(2×0.38)	2×(2×0.20)C + (2×0.38)	24 V Digital DRIVE-CLiQ Style	7.1	38	72	53
☐ ENC-FD-CP 1×2×0.22+2×0.5	1×2×0.22 + 2×0.5	4-Wire Single-Pair Digital Encoder	6.4	29	58	48

– Larger 0.5 mm² and 1.0 mm² cores inside each configuration supply 5 V DC power and remote voltage-sense lines to prevent encoder brownouts.

Electrical parameters by conductor gauge

6 sizes

Core cross-section	Circuit function	Max. DCR @ 20 °C Ω/km	Max. current at +30 °C (A)	Mutual C pF/m≈	AC test V _{rms}
0.14 mm ² (AWG 26)	Differential Sin/Cos, Clock & Data	138.0	2.0	48	1,500
0.18 mm ² (AWG 25)	TTL / HTL Incremental Channels	108.0	2.5	50	1,500
0.22 mm ² (AWG 24)	Serial Data & Commutation Tracks	87.0	3.0	52	1,500
0.25 mm ² (AWG 24)	Long-Distance EnDat / SSI Data	79.0	3.5	52	1,500
0.50 mm ² (AWG 20)	5 V / 12 V DC Encoder Supply + Sense	39.0	6.0	60	1,500
1.00 mm ² (AWG 18)	Long-Run 5 V DC Supply (> 30 m)	19.5	10.0	65	1,500

- Connect remote sense cores (Up sense / 0 V sense) at the encoder plug so the servo drive regulates $5.0\text{ V} \pm 5\%$ directly at the optical sensor head.

Standards and approvals

- ✓ CE & RoHS 2 / REACH Compliant
- ✓ UL AWM Style 20236 / 20233 (80 °C 30 V / 300 V)
- ✓ DESINA Measuring-System Green (RAL 6018)

Certifications



Management systems: ISO 9001, ISO 14001, ISO 45001

Request a quotation

Send the size, length and destination. An application engineer replies within 2 business hours.

WhatsApp / phone

+86 185 9591 3361

Email

info@tebaoflex.com

Web

tebaoflex.com/cables/encoder-feedback-cable



Typical values for this cable type, based on DIN VDE 0812 / UL AWM Style 20236. Values for your order are confirmed in the quotation. Subject to change without notice. Jiangsu Tebaoflex Special Cable Co., Ltd., Taicang, Jiangsu, China.