ANHUI FEICHUN SPECIAL CABLE CO., LTD.
安徽飞纯特种电缆有限公司

INDUSTRIAL DRAG CHAIN & SPECIAL CABLE SPECIALIST · WWW.FEICHUNCABLES.COM

PRODUCT SPECIFICATION — TPE SHIELDED PROFIBUS DP DATA CABLE FOR E-CHAIN® / DRAG CHAIN SYSTEMS, 50 V RATED, 150 Ω

FC-CFBUS (2×0.25)

TPE Profibus DP Data Cable | 2 × 0.25 mm² Twisted Pair (≈ 24 AWG) | 150 Ω Characteristic Impedance
Tinned Cu Braid Shield (≈ 90% Coverage) | TPE/TPE Insulation | Oil-, UV- & Bio-Oil-Resistant | Halogen-Free

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BUS 50 V DATA | PROFIBUS DP | 150 Ω | TPE SHIELDED | HALOGEN-FREE | CLASS 6.6.4 LIFE

DOCUMENT FC-PDS-CFBUS-2x025-2026-001
REVISION Rev. A1 | **DATE** 2026-02-11
CLASS Product Data Sheet | TPE Profibus DP Data Cable
STANDARD DIN EN 60228 | IEC 61158 | DIN EN 50170

★ HIGHLIGHTED SPECIFICATION

CFBUS 2×0.25

CFBUS.001 · 150 Ω · TPE · Shielded

≡ igus® chainflex® CFBUS.001

PROFIBUS DP

⟲ CROSS-REFERENCE — DIRECT REPLACEMENT FOR IGUS® CHAINFLEX® CFBUS

This product is the **Feichun direct replacement** for the **igus® chainflex® CFBUS.001** (CFBUS 2×0.25) premium TPE Profibus DP data cable. Identical conductor construction, impedance characteristics, shielding performance, and drag chain bending compatibility. **No design changes required** — drop-in replacement for existing E-Chain® installations.

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FEATURED SPECIFICATION

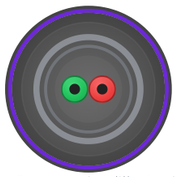
PRODUCT PARAMETERS — CFBUS.001 (2×0.25)	
Type designation	**FC-CFBUS (2×0.25)**
Product series	chainflex® CFBUS — TPE Profibus data cable
Core configuration	**2 × 0.25 mm² (1 twisted pair)**
AWG equivalent	**≈ 24 AWG**
Conductor material	Bare Cu, special flex-optimized stranding
Characteristic impedance	**150 Ω**
Rated voltage	**50 V (signal only)**
Shielding	Tinned Cu braid, ≈ 90% optical coverage
Cable outer diameter (Ø max.)	**8.5 – 9.0 mm**
Copper weight (Cu-index)	**32 kg/km**
Approx. total weight	**≈ 84 kg/km**
Outer sheath colour	**Violet (Profibus standard)**
Min. bending radius (chain)	**10 × d ≈ 85 – 90 mm**
igus® life class	**Class 6.6.4 (highest)**

TYPE DESIGNATION DECODE

CFBUS	**Series:** chainflex® Bus cable — TPE fieldbus data cable for drag chain applications
.001	Catalogue number: **Profibus DP**, 2 × 0.25 mm², TPE premium variant
2×0.25	**2 conductors**, each **0.25 mm²** (≈ 24 AWG), arranged as one twisted pair
150 Ω	Characteristic impedance matched to **Profibus DP** (IEC 61158 / EN 50170)

CABLE CONSTRUCTION

- **Conductor:** Special flex-optimized bare copper stranding, 2 × 0.25 mm² (≈ 24 AWG) per DIN EN 60228. Ultra-fine strands for maximum bending cycle life in data-critical applications.
- **Core insulation:** TPE compound, colour-coded — green (Data A / RxD/TxD−) and red (Data B / RxD/TxD+) per Profibus convention.
- **Pair stranding:** Tightly twisted pair (1 pair) with controlled lay length to maintain 150 Ω impedance through bending cycles.
- **Shield:** High-flex tinned copper wire braid, optical coverage ≈ 90%. Maintains EMI suppression after millions of bending cycles.
- **Outer sheath:** TPE compound — ■ violet (Profibus standard colour). Low-adhesion surface, highly abrasion-resistant, oil-resistant (mineral and bio-oil), UV-resistant, halogen-free, silicone-free.
- **Construction type:** Shielded twisted pair (STP), optimized for drag chain duty.



Cross-section (illustrative): 2 × 0.25 mm² twisted pair
Green (Data A) + Red (Data B)
Tinned Cu braid shield (≈ 90%)
TPE outer sheath (violet) | Ø 8.5 – 9.0 mm

CORE IDENTIFICATION

- **Data A (Green)** — RxD/TxD− | Profibus Line A
- **Data B (Red)** — RxD/TxD+ | Profibus Line B
- **Shield (Drain)** — Tinned Cu braid | Connect to connector housing / PE

ℹ PROFIBUS DP WIRING CONVENTION

Connect **Green → Pin 3 (A)** and **Red → Pin 8 (B)** on a standard 9-pin D-Sub Profibus connector. The braid shield must be connected to the connector housing for 360° shielding contact. Ensure bus termination resistors are enabled on the first and last node.

SIGNAL CHARACTERISTICS

Z₀ **150 Ω characteristic impedance** — precisely matched to the Profibus DP physical layer specification (IEC 61158 Type 3). Controlled pair twist geometry ensures impedance stability through millions of drag chain bending cycles.

DYNAMIC PERFORMANCE — DRAG CHAIN DATA

MIN. BEND RADIUS	TRAVEL DISTANCE	LIFE CLASS	OUTER Ø
10 × d	**400 m+**	**6.6.4**	**≈ 8.5 mm**
≈ 85 – 90 mm	Ultra-long stroke	Highest igus® rating	Max. 9.0 mm

✓ HIGHEST MECHANICAL LIFE RATING

igus® Life Class **6.6.4** represents the highest cable durability classification, confirming suitability for extreme-duty drag chain installations with **ultra-long travel distances exceeding 400 m**. The controlled-twist pair construction maintains stable 150 Ω impedance and data integrity throughout the entire mechanical life of the cable.

TEMPERATURE & ENVIRONMENTAL

MOVING (DRAG CHAIN)	FIXED INSTALLATION
−35 / +70 °C	**−40 / +70 °C**
Dynamic flex use	Stationary routing

−40 °C ——— +70 °C

TYPICAL APPLICATIONS

APPLICATION	ENVIRONMENT	KEY REQUIREMENT
Port & harbour cranes	Marine / heavy industrial	400 m+ travel, oil, UV, salt
Stacker cranes (AS/RS)	Automated warehousing	Long stroke, high speed
Semiconductor cleanroom	ISO cleanrooms	Halogen- & silicone-free
Automotive production lines	Welding cells, paint shops	Oil, coolant, EMI
Profibus DP fieldbus networks	Any drag chain with bus	150 Ω, up to 12 Mbit/s

✓ PROFIBUS DP PHYSICAL LAYER COMPLIANCE

This cable meets the Profibus DP physical layer requirements defined in **IEC 61158 Type 3** and **EN 50170**. The 150 Ω impedance, controlled capacitance, and high-coverage braid shield ensure reliable data transmission at rates from 9.6 kbit/s to 12 Mbit/s in electrically noisy industrial environments.

APPLICABLE STANDARDS & PROPERTIES

SIGNAL & ELECTRICAL DATA	
Characteristic impedance (Z_0)	`150 Ω ± 15 Ω`
Rated voltage	`50 V (signal level)`
Conductor resistance @ 20 °C	`≤ 74 Ω/km`
Mutual capacitance	`≈ 28 – 30 pF/m`
Max. bus speed (Profibus DP)	`Up to 12 Mbit/s`
Max. segment length	100 m @ 12 Mbit/s / 1 200 m @ 93.75 kbit/s

⛔ DATA / SIGNAL CABLE ONLY — NOT FOR POWER

This is a **communication / fieldbus data cable** rated at 50 V. It carries only milliamp-level signal current and must **never** be connected to power circuits. The 0.25 mm² conductors are designed exclusively for Profibus DP data transmission.

- `IEC 61158` Type 3 / `EN 50170` — Profibus DP physical layer
- `DIN EN 60228` / `VDE 0295` — Conductor construction
- `DIN EN 60811-404` — Oil resistance (mineral & bio-oil)
- `IEC 60332-1-2` — Flame retardance (single cable)
- Halogen-free per `IEC 60754` | Silicone-free
- UV-resistant | Voltage: `50 V` (signal) | Impedance: `150 Ω`

Profibus DP | 150 Ω Impedance | TPE / TPE | Oil-Resistant | Halogen-Free | Silicone-Free | Flame Retardant | UV-Resistant

📋 ORDER REFERENCE & CONTACT

For inquiries and orders, please reference:
`FC-CFBUS (2×0.25)` ≡ igus® chainflex® CFBUS.001
Protocol: **Profibus DP** | Impedance: **150 Ω** | TPE premium grade
Contact: **Tech@feichuncables.com** | **+86 138 5512 3218**
CFBUS series also available for other fieldbus protocols (EtherCAT, PROFINET, CANopen) · Custom lengths on request.

All values are nominal unless otherwise specified. Tolerances and additional technical data available