ANHUI FEICHUN SPECIAL CABLE CO., LTD.
安徽飞纯特种电缆有限公司
SPECIAL & HIGH-TEMPERATURE CABLE SPECIALIST | FEP · SILICONE · PTFE · PFA

DOCUMENT FC-PDS-FEP-HT-2026-002
REVISION Rev. A1 | **DATE** 2026-02-11
CLASS Product Data Sheet | High-Temperature Electronic Cable
STANDARD UL 758 | IEC 60228 | NFPA 262

PRODUCT SPECIFICATION — FEP INSULATED HIGH-TEMPERATURE ELECTRONIC & INSTRUMENT CABLES — BELDEN CROSS-REFERENCE

FEP High-Temp Series

Replacing Belden 83754 (4C × 14 AWG Shielded Control) & Belden 88778 (6 Pair × 22 AWG Individually Shielded Instrument)
FEP Insulation & Jacket | −70 °C to +200 °C | 300 V Rated | Plenum (CMP) Rated | Red Jacket

Contact: Tech@feichuncables.com | +86 138 5512 3218 | www.feichuncables.com

A BELDEN 83754 REPLACEMENT | 4 × 14 AWG | FEP / FEP | FOIL + BRAID SHIELD

B BELDEN 88778 REPLACEMENT | 6 × 2 × 22 AWG | FEP / FEP | INDIVIDUAL PAIR SHIELDS

★ PRODUCT A — CONTROL CABLE
FC-83754
4C · 14 AWG · FEP · 300 V
Replaces: Belden 83754

★ PRODUCT B — INSTRUMENT CABLE
FC-88778
6 Pr · 22 AWG · FEP · 300 V
Replaces: Belden 88778

CROSS-REFERENCE — DIRECT REPLACEMENT FOR BELDEN 83754 & 88778

These products are **direct equivalent replacements** for **Belden 83754** and **Belden 88778** high-temperature electronic cables. Identical conductor constructions, FEP insulation and jacket materials, voltage ratings (300 V), shielding configurations, and outer dimensions. Drop-in compatible with no design changes required.

SPECIFICATION COMPARISON — AT A GLANCE

PARAMETER	FC-83754 (≡ BELDEN 83754)	FC-88778 (≡ BELDEN 88778)
Description	4C Shielded Control Cable	6 Pair Individually Shielded
Cores × AWG	4 × 14 AWG	6 × 2 × 22 AWG
Stranding	7 × 22 (Tinned Cu)	7 × 30 (Tinned Cu)
Cross-section / core	≈ 2.08 mm²	≈ 0.33 mm²
Insulation / Jacket	FEP / FEP	FEP / FEP
Jacket Colour	■ Red	■ Red
Shielding	Al Foil 100% + TC Braid 85%	Individual Al Foil 100% / pair
Outer Diameter	7.90 mm (max 8.15)	7.85 mm (max 8.15)
Cable Weight	≈ 146 kg/km	≈ 104 kg/km
Copper Weight	≈ 95 kg/km	≈ 42 kg/km
Current Capacity @25 °C	14.4 A / core	1.96 A / core
Rated Voltage	300 V	300 V
Temperature Range	−70 to +200 °C	−70 to +200 °C
Capacitance	≈ 98 pF/m	≈ 102 pF/m
Impedance	50 Ω	—

OPERATING TEMPERATURE (BOTH MODELS)

MINIMUM	MAXIMUM — RATED	TOTAL SPAN
−70 °C	+200 °C	270 °C
Continuous	Continuous operation	Full range

−70 °C ——— +200 °C

FEP Advantage: Fluorinated ethylene propylene (FEP / Teflon™ type) insulation and jacket provide an extreme 270 °C operating span (−70 °C to +200 °C), far exceeding PVC, PE, and PUR alternatives. FEP offers outstanding chemical resistance, near-zero moisture absorption, inherent flame retardancy, and very low

PRODUCT A — FC-83754 (REPLACES BELDEN 83754)

FC-83754 — FULL SPECIFICATION	
Feichun model	FC-83754
Belden equivalent	Belden 83754
Description	4-Core Shielded Control Cable (FEP)
Core configuration	4 × 14 AWG (4 cores)
Conductor stranding	7 × 22 (tinned Cu, stranded)
Cross-section per core	≈ 2.08 mm²
Insulation material	FEP (fluorinated ethylene propylene)
Jacket material	FEP ■ Red
Shielding — layer 1	Aluminium foil (100% coverage)
Shielding — layer 2	Tinned Cu braid (85% coverage)
Outer diameter (Ø)	7.90 mm (max 8.15 mm)
Outer diameter (inch)	0.311" (max 0.321")
Cable weight	≈ 146 kg/km (98 lbs/kft)
Copper weight (est.)	≈ 95 kg/km
Current capacity @25 °C	14.4 A / core
Rated voltage	300 V
Temperature range	−70 °C to +200 °C
Capacitance (conductor-to-conductor)	≈ 98 pF/m
Impedance	50 Ω

DUAL-LAYER SHIELDING DETAIL

FC-83754 employs a **dual-layer overall shield**: an inner 100% aluminium/polyester foil tape bonded to a drain wire, plus an outer 85% coverage tinned copper braid. This combination provides exceptional electromagnetic interference (EMI) rejection across a wide frequency range — the foil blocks high-frequency noise while the braid handles low-frequency interference and provides excellent mechanical protection and grounding continuity.

TYPICAL APPLICATIONS — FC-83754

PRODUCT B — FC-88778 (REPLACES BELDEN 88778)

FC-88778 — FULL SPECIFICATION	
Feichun model	FC-88778
Belden equivalent	Belden 88778
Description	6-Pair Individually Shielded Instrument Cable
Core configuration	6 × 2 × 22 AWG (6 pairs / 12 cores)
Conductor stranding	7 × 30 (tinned Cu, stranded)
Cross-section per core	≈ 0.33 mm²
Insulation material	FEP (fluorinated ethylene propylene)
Jacket material	FEP ■ Red
Shielding (per pair)	Aluminium foil (100% coverage)
Shielding type	Individual pair shields (ISIP)
Outer diameter (Ø)	7.85 mm (max 8.15 mm)
Outer diameter (inch)	0.309" (max 0.321")
Cable weight	≈ 104 kg/km (70 lbs/kft)
Copper weight (est.)	≈ 42 kg/km
Current capacity @25 °C	1.96 A / core
Rated voltage	300 V
Temperature range	−70 °C to +200 °C
Capacitance (pair-to-pair)	≈ 102 pF/m

INDIVIDUAL PAIR SHIELDING DETAIL

ISIP — INDIVIDUALLY SHIELDED INDIVIDUAL PAIRS

FC-88778 provides **100% aluminium foil shielding on each of the 6 twisted pairs independently**. This architecture eliminates crosstalk between pairs, ensuring signal isolation critical for multi-channel analogue measurement and data acquisition. Each pair includes a dedicated drain wire for easy shield termination.

TYPICAL APPLICATIONS — FC-88778

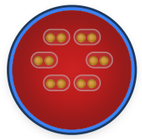
- **Analogue instrumentation:** 4–20 mA current loops, 0–10 V signal transmission, thermocouple extension — individual pair shields prevent inter-channel crosstalk
- **Data communication:** RS-232, RS-422, RS-485 serial links in industrial environments requiring noise immunity at elevated temperatures

smoke generation — meeting NFPA 262 plenum (CMP) requirements without additional flame-retardant additives.

CABLE CROSS-SECTION (ILLUSTRATIVE)



FC-83754 — 4 × 14 AWG
Al foil + 85% TC braid shield
FEP jacket (red) | 7.90 mm Ø



FC-88778 — 6 × 2 × 22 AWG
Individual Al foil per pair
FEP jacket (red) | 7.85 mm Ø

- **Industrial control circuits:** 24 V DC / 220 V AC control loops in process plants, CNC machines, and automation systems requiring high-temperature tolerance
- **Fire alarm systems:** FPLP / CMP-rated plenum installations per NFPA 262 — inherent FEP flame retardancy and low smoke
- **Power supply distribution:** 14 AWG conductors carry up to 14.4 A, suitable for powering field devices, solenoid valves, and motor starters in harsh environments
- **High-EMI environments:** Chemical plants, power stations, and offshore platforms where dual-layer shielding is essential to protect signal integrity

✓ KEY ADVANTAGE — FC-83754

The 14 AWG conductor provides a robust **14.4 A current capacity per core**, combined with 85% braid shielding for superior EMI protection and mechanical ruggedness. Ideal for **high-current control and power circuits** in extreme-temperature and high-interference industrial environments.

CORES	AMPACITY	BRAID COVERAGE	OD
4 × 14 AWG	14.4 A per core @25 °C	85% Tinned copper	7.90 mm nominal

- **Process control:** DCS / PLC field wiring in chemical, petrochemical, and refinery installations — FEP withstands aggressive chemicals and extreme heat
- **Multi-channel measurement:** Laboratory, test bench, and R&D environments requiring high signal fidelity across multiple isolated channels simultaneously

✓ KEY ADVANTAGE — FC-88778

Individual pair shielding provides **exceptional crosstalk isolation** between all 6 pairs, enabling high-precision multi-channel analogue and data signals to coexist in a single cable. The FEP construction ensures **+200 °C** continuous operation with inherent chemical resistance and plenum-grade flame performance.

PAIRS	AMPACITY	PAIR SHIELDS	OD
6 × 2 × 22 AWG	1.96 A per core @25 °C	6 × 100% Al foil individual	7.85 mm nominal

APPLICABLE STANDARDS & COMPLIANCE

- `UL 758` — Appliance wiring materials (FEP insulation)
- `NFPA 262` — Plenum cable fire test (CMP/FPLP rated)
- `IEC 60228` — Conductors of insulated cables (stranded)
- `UL 2556` — Wire and cable test methods
- Voltage: `300 V` | Temp: `−70 °C to +200 °C`
- Flame: `CMP / FPLP` (Plenum) | Low smoke, halogen-free combustion

FEP Insulation	300 V Rated	−70 to +200 °C
Plenum (CMP)	Low Smoke	Chemical Resistant

ORDER REFERENCE & CONTACT

Product A: FC−83754 (replaces Belden 83754) — 4C × 14 AWG, dual shield
Product B: FC−88778 (replaces Belden 88778) — 6 Pr × 22 AWG, ISIP shield
Contact: **Tech@feichuncables.com | +86 138 5512 3218 | www.feichuncables.com**
Custom lengths, colour codes, and conductor configurations available on request.

All data are nominal and subject to normal manufacturing tolerances.
The company reserves the right to modify specifications without prior notice.
FC-83754 replaces Belden 83754 | FC-88778 replaces Belden 88778 | FEP / 300 V / +200 °C.