

BASKET SPREADER 750

3GSLTOE · 0.6/1 kV AC + 0.9/1.8 kV DC DUAL-VOLTAGE

GAALTHERM® 530 Thermoplastic Insulation · -50°C to +80°C Extreme Climate · 5×D Ultra-Flex
Aramide + Lead Central Unit · Bus/Fiber Optics Integration Ready · Arctic & Tropical Certified

0.6/1 kV AC & 0.9/1.8 kV DC -50°C to +80°C Operating Range 5 × D Bending Radius Aramide + Lead Core

BUS / Fiber Optics Variants

FC-TDS-SPR750-3GSLTOE-2026-X4V8

Rev. A | May 2026

EXTREME-DUTY — Arctic Ports · Desert Terminals · Automated Mega-Port Cranes · STS / RTG / AGV Systems

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IEC 60502-1

0.6/1 kV MV

GAALTHERM® 530

-50°C ~ +80°C

5 × D ULTRA-FLEX

TEST: 3.5 kV

ARAMIDE + LEAD CORE

AC + DC DUAL VOLTAGE

BUS/FIBER OPTICS

+90°C CONDUCTOR

14 SKUS

FC-TDS-SPR750-3GSLTOE-2026-X4V8

1 PRODUCT OVERVIEW — NEXT-GENERATION ARCHITECTURE

UPGRADE FROM SPREADER 740 · MEDIUM VOLTAGE · EXTREME CLIMATE

The **FeiChun BASKET SPREADER 750 (3GSLTOE)** is a next-generation 0.6/1 kV medium-voltage hoisting and control cable, representing a fundamental advancement over the SPREADER 740. It is engineered for automated gantry crane systems in extreme environments: Arctic terminals (-50°C), desert mega-ports (+80°C), and Industry 4.0 automated container facilities requiring integrated BUS communication and DC battery-backup compatibility.

Three key innovations define this cable: **GAALTHERM® 530 thermoplastic insulation** (vastly superior to PVC or PUR across all metrics), **5×D ultra-high flexibility** (3× better than SPREADER 740's 15×D at higher voltage), and **AC/DC dual-voltage capability** (0.6/1 kV AC + 0.9/1.8 kV DC on the same cable). The **aramide + lead central unit** adds electromagnetic shielding and vibration damping alongside the standard 10 kN tensile backup.

750 VS. 740 — KEY UPGRADES AT A GLANCE

PARAMETER	SPREADER 740	SPREADER 750
Voltage rating	300/500V AC	0.6/1 kV AC +0.9/1.8 kV DC
Insulation	PVC YI2	GAALTHERM® 530
Temp range	-20°C ~ +60°C	-50°C ~ +80°C
Min bend radius	15 × D	5 × D (3×)
Test voltage	2 kV	3.5 kV (+75%)
Conductor max	+70°C	+90°C
BUS / Fiber optics	Not available	Optional

2 KEY OPERATING PARAMETERS

EXTREME-DUTY QUICK REFERENCE

AC VOLTAGE

0.6/1

kV (Uo/U)
IEC 60502-1 MV

DC VOLTAGE

0.9/1.8

kV DC (Uo/U)
Battery backup ready

MIN BENDING

5 × D

Ultra-high flex
Best-in-class MV

TEST VOLTAGE

3.5 kV

AC · 1 min
5.8× max. oper. V

CONDUCTOR MAX

+90°C

service / +250°C SC
GAALTHERM® rated

ARAMIDE LOAD

10 kN

+ Lead EM shield
Dual-function core

3 EXTREME TEMPERATURE OPERATING ENVELOPE

-50°C TO +80°C — VS. STANDARD -20°C TO +60°C

GAALTHERM® 530 OPERATING RANGE · -50°C TO +80°C [FIXED] / -40°C TO +80°C [FLEXIBLE]

ARCTIC

COLD

NOMINAL ZONE

TROPICAL / HOT

-50°C

Fixed min.
Arctic terminal

-40°C

Flex/moving min.
N. Europe winter

+20°C

Reference
Nominal ampacity

+60°C

740 upper limit
750: full capacity

+80°C

SPREADER 750 max
Dubai / Dubai / Gulf

ARCTIC PORT PERFORMANCE (-50°C)

TROPICAL / DESERT PERFORMANCE (+80°C)

TENSILE STRENGTH RETENTION AT -50°C

PVC (standard)	40-50%	Cable fractures on bending
PUR 11YM1 (740)	50-60%	Risk of micro-cracking
GAALTHERM® 530 ✓	80-90%	Full flexibility maintained

AMPACITY DERATING AT +80°C AMBIENT

PVC / PUR cables	50% of rated	Insulation thermal limit exceeded
GAALTHERM® 530 ✓	60-65% of rated	+90°C conductor rated; safe headroom

Thermal Cycling Durability: GAALTHERM survives 5,000+ thermal cycles (-50°C to +80°C) without micro-cracking. PVC fails after 100-200 cycles; PUR after 300-500. In Arctic port operations, this means 5+ year service life vs. 1-2 years for standard cables.

Short-Circuit Thermal Limit: GAALTHERM® 530 survives transient +250°C conductor temperature (vs. +150°C for PVC/PUR). This

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CABLE CONSTRUCTION — LAYER BY LAYER

5×D · ARAMIDE+LEAD · GAALTHERM® 530



GAALTHERM® 530 Cable Cross-Section (not to scale)

- 1

Ultra-Fine Stranded Copper Conductors — Class 6 (IEC 60228)
Potentially 100+ individual fine wires per core. Micro-flexing architecture enables 5×D bending at 0.6/1kV — unprecedented for medium-voltage control cables. Rated to 0.6/1 kV Uo/U.
- 2

GAALTHERM® 530 Insulation — Thermoplastic, 0.8 mm min. wall
Advanced cross-linked thermoplastic polymer. Rated +90°C continuous / +250°C short-circuit. Maintains ≥80% tensile strength at −50°C vs. 40% for PVC. 5,000+ thermal cycles without cracking. IEC 60811-404 compliant.
- 3

Core Identification — EN 50334 colour sequence
Black conductors with white numbering. Colours: Brown, Blue, Black, Grey, White, Yellow, Green, Orange, Pink, Red, Purple, Turquoise.
- 4

Non-Woven Tape Wrapping — Advanced bending architecture
Specialised wrapping pattern allowing localised bunching during 5×D tight bends without insulation delamination. Applied to individual bundles and overall.
- 5

Central Unit — Aramide Yarn + Lead Core (Dual-Function)
Para-aramid fibres (10 kN tensile backup) + lead alloy core. Lead provides: (1) vibration/shock damping from hoisting loads; (2) low-frequency EM shielding for BUS element variants preventing power-to-control crosstalk.
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GAALTHERM® 530 Outer Sheath — Extreme Marine/Climate Duty
<0.5% moisture absorption · UV/ozone/chemical resistant · Salt-fog validated · Superior to PUR 11YM1 across all metrics · Qualified for −50°C to +80°C outdoor service.

LAYER	MATERIAL	KEY SPECIFICATION	PERFORMANCE ADVANTAGE OVER 740
Conductor	Cu Class 6, ultra-fine strand	0.6/1 kV rated	100+ fine wires/core vs. 42–84; enables 5×D at medium voltage
Insulation	GAALTHERM® 530	+90°C / +250°C SC	vs. PVC YI2 (+70°C / +150°C); 5,000+ thermal cycles vs. 100–200
Central unit	Aramide + Lead alloy	10 kN + EM shield	Lead adds vibration damping + EM shielding absent in 740
Overall sheath	GAALTHERM® 530	−50°C ~ +80°C	vs. PUR 11YM1 (−20°C ~ +60°C); Arctic + desert certified

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ELECTRICAL PARAMETERS — AC & DC DUAL-VOLTAGE

IEC 60502-1 · 0.6/1 kV + 0.9/1.8 kV DC

AC VOLTAGE SYSTEM		
Rated voltage AC U _o /U	0.6 / 1 kV	IEC 60502-1 MV
Test voltage AC (1 min)	3.5 kV	5.8× max. oper. V; 75% higher than 740's 2 kV
Ampacity gain vs. 740	+20% at same temp	GAALTHERM thermal conductivity advantage
DC DUAL-VOLTAGE SYSTEM		
Rated voltage DC U _o /U	0.9 / 1.8 kV DC	Battery backup / DC motor control
Application	Primary: 0.6 kV AC (shore power, normal hoist). Emergency: 0.9 kV DC (crane battery backup, controlled descent if shore power lost). No cable swap required.	
CONDUCTOR THERMAL RATINGS		
Max. continuous temp.	+90°C	vs. +70°C for standard 740 — 20°C headroom
Short-circuit transient	+250°C	vs. +150°C standard; allows auto-protection response
Insulation resistance	≥ 1 000 MΩ · km	Maintained after –50°C cold soak + full-load electrical test

GAALTHERM® VS. PVC ELECTRICAL PERFORMANCE		
At +80°C ambient — ampacity	PVC: 50% of rated	GAALTHERM: 60–65%
After 2500 hrs salt-fog	PVC: 20–30% weaker	GAALTHERM: no loss
At –50°C — insulation crack	PVC: micro-cracking	GAALTHERM: intact
Chemical resistance (oil)	<4–6% swelling	<0.5% swelling
UV/Ozone outdoor life	3–5 years (PVC)	20+ years
MECHANICAL & DYNAMIC		
Min. bending radius	5 × D – best-in-class for 0.6/1kV MV cables	
Max. operating speed	160 m/min hoisting; 20+ million flex cycles	
Max. tensile load (aramide)	≥ 10 kN emergency descent backup	
Torsion resistance	±25°/m (lead core adds damping)	
Max. suspension length	50 m (same as 740, despite heavier cable)	

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// Bending radius example – 36G×2.5 mm², Ø ≈ 36.2 mm
R_min = 5 × D = 5 × 36.2 mm = 181 mm → use pulley Ø ≥ 362 mm
// vs. SPREADER 740 at same OD: 15 × 36.2 = 543 mm (3× larger pulley required)

// DC dual-voltage: emergency descent scenario
Normal operation: 0.6 kV AC (shore power) → Emergency: 0.9 kV DC (battery) → Same cable, no swap ✓

// Short-circuit temp advantage at +80°C ambient
GAALTHERM® conductor max = 250°C | Headroom = 250 – 90 = 160°C SC margin above service temp
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BUS ELEMENT & FIBER OPTICS INTEGRATION — INDUSTRY 4.0 READY

CANOPEN • PROFIBUS • ETHERCAT

🔧 THREE AVAILABLE CONFIGURATIONS

Config 1: Standard
24–54 copper conductor cores (power + control only). Identical to SPREADER 740 circuit count but at 0.6/1 kV. Suitable for existing crane upgrades.

Config 2: BUS Element
Standard copper cores + integrated CAN-bus / Profibus twisted pairs (individually Cu-braid screened). Supports CANopen, Profibus, EtherCAT at 9.6–500 kbit/s. Dual-pair redundancy.

Config 3: Fiber Optics
Standard copper cores + single/multi-fiber optic strand(s). Real-time position/load feedback without electrical noise. Industry 4.0 / Smart Port compatible. Future-proof.

BUS Element Technical Detail: The BUS variant (e.g. 36G2.5+2×(2×1)C) provides 36 standard power/control cores + 2 twisted pairs individually screened with tinned copper braid — distinct from any overall cable shield. Dual-pair redundancy ensures fail-safe operation (if one bus pair is damaged, backup pair maintains PLC communication). This is critical for automated anti-sway gantry crane systems where loss of feedback signal causes crane interlock.

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COMPLETE SKU PORTFOLIO — 14 STANDARD CONFIGURATIONS + BUS VARIANT

AWG 18 / 14 / 12

2.5 MM² SERIES (AWG 14) — STANDARD & HIGH-POWER APPLICATIONS

FEICHUN PART NO.	CORES × MM²	OD (MM)	CU (KG/KM)	WEIGHT (KG/KM)	AWG	APPLICATION
03330G7A481M10	48 × 1.0	32.5	461	2 350	18	Extreme control — many circuits, smaller conductors
03330G7A241M25	24 × 2.5	30.5	576	1 750	14	Standard 20ft spreader at 0.6/1 kV
03330G7A301M25	30 × 2.5	32.6	720	2 250	14	30ft spreader, moderate power
03330G7A361M25★	36 × 2.5	36.2	864	2 800	14	40ft spreader — standard configuration (most common)
03330G7A421M25	42 × 2.5	38.5	1 008	3 500	14	40ft + auxiliary circuits
03330G7A481M25	48 × 2.5	42.5	1 152	4 050	14	Dual spreader, tandem operation
03330G7A541M25	54 × 2.5	47.0	1 296	3 900	14	Heavy-duty extreme applications

3.5 MM² SERIES (AWG 12) — HIGH CURRENT / LONG RUN APPLICATIONS

FEICHUN PART NO.	CORES × MM²	OD (MM)	CU (KG/KM)	WEIGHT (KG/KM)	AWG	APPLICATION
03330G7A201M35	20 × 3.5	32.5	672	2 200	12	High-power, limited circuit count
03330G7A241M35	24 × 3.5	33.5	806	2 350	12	20ft spreader high-current (90+ A)
03330G7A301M35	30 × 3.5	36.0	1 008	3 000	12	30ft spreader, high amperage
03330G7A361M35	36 × 3.5	39.5	1 210	3 750	12	40ft spreader, maximum ampacity (110+ A)
03330G7A421M35	42 × 3.5	44.0	1 411	4 500	12	Multiple spreaders + high-current distribution
03330G7A481M35	48 × 3.5	47.0	1 613	4 800	12	Dual-spreader tandem, high power
03330G7A541M35	54 × 3.5	47.5	1 814	5 100	12	Triple-spreader or extreme-duty systems

FEICHUN PART NO.	CONFIGURATION	OD (MM)	CU (KG/KM)	WEIGHT (KG/KM)	BUS PROTOCOL	APPLICATION
03330G7A36BM25	36G2.5 + 2×(2×1)C	43.0	~920	3 830	CANopen / Profibus / EtherCAT	40ft spreader + PLC bus communication — automated gantry cranes

BUS Variant Selection Note: The 03330G7A36BM25 provides 36 standard 2.5 mm² power/control cores + 2 individually-screened twisted pairs for BUS communication. Dual-pair redundancy is mandatory for automated crane systems — if one bus pair fails, the second maintains PLC control continuity. BUS data rates: 9.6 kbit/s to 500 kbit/s (CANopen/Profibus/EtherCAT). Additional configurations (48G + BUS, 54G + BUS, fiber optics integration) available on request.

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APPLICATION RECOMMENDATION MATRIX — 750 VS. 740
WHICH CABLE FOR WHICH PORT?

PORT ENVIRONMENT	CLIMATE	TEMPERATURE RANGE	RECOMMENDED	RATIONALE
Southeast Asia (Singapore, Jakarta)	Tropical	+20°C ~ +78°C	SPREADER 740	Within 740 range; cost-effective
Mediterranean (Marseille, Genoa)	Temperate	−5°C ~ +65°C	SPREADER 740	Operating within 740 specification
Middle East / Gulf (Dubai, Abu Dhabi)	Extreme Heat	+30°C ~ +82°C	SPREADER 750	+82°C exceeds 740 limit; GAALTHERM +90°C conductor essential
North Europe (Hamburg, Rotterdam)	Temperate-Cold	−15°C ~ +55°C	SPREADER 750	Winter events can hit −20°C+; 750 provides −50°C safety margin
Arctic (Murmansk, Siberia, Norway)	Extreme Cold	−50°C ~ +20°C	SPREADER 750 ONLY	−50°C hard requirement; 740 is not rated; only GAALTHERM 530 qualified
Automated Mega-Terminal (any climate)	Any	Any range	750 BUS Variant	PLC integration, CANbus feedback, anti-sway, battery backup DC compatibility
Industry 4.0 Smart Port	Any	Any range	750 Fiber Optic	Real-time position/load data without EMI; zero signal noise on long runs

Selection Rule of Thumb: Choose SPREADER 750 when any of these apply: (1) ambient temperature < −20°C or > +60°C; (2) DC battery backup is integrated; (3) crane uses PLC/CANbus automated control; (4) cable run > 40 m (voltage drop at 0.6/1kV significantly less than 300/500V). Choose SPREADER 740 for standard temperate/tropical ports with conventional relay-based crane control and shore power only.

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STANDARDS, CERTIFICATIONS & ORDERING INFORMATION

APPLICABLE STANDARDS		ORDERING INFORMATION	
Primary cable standard	IEC 60502-1 · DIN VDE 0282	Product family name	BASKET SPREADER 750 (3GSLTOE)
Conductor	IEC 60228 Class 6 · DIN VDE 0295	Configurations	14 standard + BUS + Fiber Optics variants
Insulation (GAALTHERM)	IEC 60811-404 · ASTM D1746	Core range	24–54 cores × 1.0 / 2.5 / 3.5 mm²
Core identification	EN 50334 · DIN VDE 0293	Standard reel	100 m / 200 m / 500 m (specify at order)
Flame retardance	IEC 60332-1-2 · DIN VDE 0482	MOQ	50 m (custom lengths available)
Mech. redundancy (aramide)	ISO 4308-1	Lead time (ex-Hefei)	20–35 working days
Salt-fog / environmental	ASTM B117 · NACE TM0175-2021	Delivery terms	FOB Shanghai / CFR / CIF on request
Certifications	CE · GOST-R · UL/CSA (on request)	Premium over SPREADER 740	+15–25% (GAALTHERM + lead core)
		20-year lifecycle saving	0.5 replacement cycles — maximum ROI

⚠ PROPRIETARY NOTICE: BASKET SPREADER 750 (3GSLTOE) is a proprietary cable design manufactured exclusively by Anhui FeiChun Special Cable Co., Ltd. GAALTHERM® 530 thermoplastic insulation specification, dual-voltage AC/DC capability (0.6/1 kV AC + 0.9/1.8 kV DC), extreme temperature range (–50°C to +80°C), aramide + lead central unit dual-function design, 5×D ultra-high flexibility architecture, 3.5 kV test voltage, and BUS/fiber optics integration protocols are proprietary and protected under Chinese Patent Law and international IP conventions. Parameters per IEC 60502-1 / IEC 60228 / IEC 60811-404 / DIN VDE 0282. Exact values confirmed by factory test report per production batch. © 2026 FeiChun Special Cables.

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