

Speciality Cable Solutions



**High Performance
Solutions for Challenging
Environments**

As a leader in signal transmission solutions, Belden offers a broad range of high performance wire and cable products for demanding environments.

Speciality Cable Solutions

Belden® is at the forefront of technology in the use of high-temperature fluoropolymers in wire insulation and cable jackets.

While this technology remains the backbone of the military and aerospace industries, it has also been successfully used in applications within telecommunications, automotive, medical and sensor markets, and in other areas where temperature resistance is critical.

Our reputation as a provider of solutions for high performance wire and cable applications keeps us driven to continuously raise the bar on innovative designs to meet your challenges.

Whether your application is suited for a standard product or requires performance enhancements such as increased mechanical toughness, resistance to extreme temperatures, Belden will deliver the very best solution.

Service Leadership

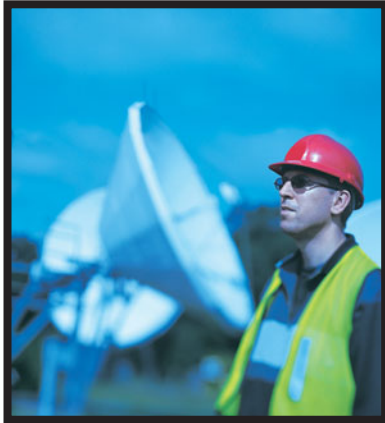
Belden has established a strong reputation for innovation and creativity. For more than 100 years, we have been a leader in the production of high performance communication cables, offering our customers effective and innovative solutions for wire and cable systems requiring specific technical expertise.

As a global leader in signal transmission solutions, we offer customers direct access to a wider range of products and services than ever before. This access to global resources makes us an ideal supplier and development partner, providing you with world-class product, design and quality leadership.

New investments in resources and technology enable us to offer:

- Short enquiry response times
- Fast order acknowledgement
- Stocking arrangements designed to meet your needs
- Shorter lead times
- World class logistics
- Engineering and design expertise from around the globe
- A service package tailored to your needs





Design and Engineering Leadership

With an established reputation for innovation, we can handle any connectivity need. We meet or surpass all standards, while at the same time creating new ones for the aerospace, electronic and communication industries.

As a leader in cable technology and signal transmission solutions, Belden® has the ability and the experience to deliver the right solution. Our experienced project teams have access to first-class designers from all over the world – and working together with you, we are able to find the right solution for any application.

Quality Leadership

As you would expect from a global leader, our commitment to quality and reliability is second to none. Our cables are manufactured according to the most rigorous quality processes in the industry and tested to meet all major European and international standards.

Speciality Cable – Application Overview

Segment	Application	Product Type						
		Zyrad	Trakrad	Equipment / Hook-up Wire	Cathodic Protection	Coaxial	Thermocouple	Tie Cords / Lacing Tapes
Aerospace	Airframe and aircraft wiring			Y				
	Airfield lighting			Y				
	Avionics			Y				
	Harness wiring / harness ties						Y	Y
	Missile systems wiring			Y				
Defence / Marine	Antennas			Y		Y		
	Base stations	Y		Y		Y		
	General military communications			Y		Y		
	High intensity lighting			Y				
	Radar systems			Y		Y		
Nuclear	Nuclear power wiring	Y		Y			Y	
	Radiation tolerant applications			Y				
	Waste disposal			Y			Y	
Automotive	Brake sensors	Y		Y				
	Car seat heating systems			Y				
	Catalytic converters	Y		Y				
	Gearbox cables	Y		Y				
	Harness wiring / harness ties						Y	Y
Industrial	Class F motors and transformers	Y						
	Domestic appliances	Y		Y				
	Ink jet printer manufacture			Y				
	Specialised lighting	Y		Y				
	Power generation	Y		Y				
	Pressure transducers	Y						
	Industrial sensor systems	Y				Y		
	Inductive loop systems	Y						
	Suspending objects in hazardous applications							Y
	Under floor heating			Y				
White goods / small appliances	Y		Y					
Cathodic Protection	Gas pipelines / Oil platforms				Y			
	Underground structures				Y			
	Water storage tanks				Y			
Rapid Transit	Rewiring rail locomotives / carriages		Y					
	Underground railway wiring		Y					
Thermocouple	Connecting sensors to devices						Y	
	Accurate instrumentation and control						Y	
	Accurate temperature measurement						Y	

Product Leadership

Belden® manufactures a wide range of extremely efficient communication cables. Belden has become recognised as a world leader in the supply of speciality cables for the aerospace, electrical, OEM and distribution industries.

Our product range includes:

- High temperature cables
- Cross-linked cables
- Halogen-free cables
- Coaxial cables
- Silicone cables
- Fire resistant aero engine cables
- MaxFlite® Ethernet cables (in-flight entertainment cables)
- Celltec™ (high temperature, foamed fluoropolymer)
- Seamless Wrap PTFE cables



Speciality Cable Product Overview – Crosslinked Cable

	Product Code				
	Zyrad 400	Zyrad 500	Zyrad 555	Zyrad 700	Trakrad
Key Characteristics	High abrasion resistance Flame retardant Thin wall insulation	Excellent abrasion resistance Class "F" UL 3288/9 temperature resistance Flame retardant	Excellent abrasion resistance Class "F" temperature resistance Flame retardant	High abrasion resistance Halogen-free / low-smoke Flame retardant	Enhanced oil resistance Flame retardant
Conductor (AWG)*	min 24 max 4/0	24 4/0	24 4/0	22 4/0	20 3/0
Conductor Type					
Copper	Y				
Tin Plated Copper		Y	Y	Y	Y
Service Temp °C	min -65 max 125	-65 150 **	-65 155 **	-20 150	-65 125
Voltage Rating (V)					
150	Y				
300	Y				
600	Y	Y	Y	Y	
1000	Y		Y	Y	
1900 / 3300					Y
Colour Range	Available in 11 standard colours and striped colour options				Grey
Approvals	Belden holds a variety of international approvals, including: British standards, European norms, Nato standards, UL/CSA approvals and Military standards.				

* AWG numbers are approximate and relate to the nearest metric cross sectional area

** Will withstand varnish bake temperatures of 190°C and short term exposure at 250°C



Speciality Cable Product Overview – Equipment/Hook-up Wire

	Insulation / Jacket Type					
	PTFE	EFGLAS	FEP	PEEK	Polyimide (Kapton™)	ETFE
Chemical Resistance Rating	5	5	5	4	4	4
Temperature Rating (5 = Outstanding, 1 = Good)	5	5	4	4	4	3
Key Characteristics	Outstanding chemical resistance Highly flexible at low temperature Non flammable / non toxic	Outstanding chemical resistance Improved abrasion resistance Excellent mechanical strength	Outstanding chemical resistance Highly flexible at low temperature Non flammable / non toxic	Outstanding chemical resistance Excellent radiation resistance Zero halogen content	Lightweight Mechanically tough Low-smoke / low toxicity	Good chemical resistance Excellent impact strength High flex life
Conductor (AWG)	min 30 max 2/0	22 2/0	30 10 *	26 12	30 2/0	30 10 *
Conductor Type						
Silver Plated Copper	Y		Y	Y	Y	Y
Nickel Plated Copper	Y	Y		Y	Y	
Tin Plated Copper			Y			Y
Service Temp °C	min -75 max 260	-75 260	-75 200	-75 200	-75 200	-75 150
Voltage Rating (V)	min 250 max 10000	600 600	250 10000	600 600	250 5000	600 5000
Colour Range	Available in 11 standard colours and striped colour options					
Approvals	Belden holds a variety of international approvals, including: British standards, European norms, Nato standards, UL/CSA approvals and Military standards.					

* Larger conductor sizes available on request

Speciality Cable Product Overview – Specialist Cables

	Product Type				
	Coaxial	Thermocouple	Multicore	Cathodic Protection	Tie Cords / Lacing Tape
Key Characteristics	Excellent chemical resistance Highly flexible at low temperature Non flammable / non toxic	Dissimilar conductors in one cable Insulation provides performance and economic benefits in hazardous environmental conditions.	Customised design solution of up to 61 twisted pairs available for individual applications. Cable components include conductor, insulation, screen, jacket and armour if required.	Inert to groundbed acids Resistant to salt water Excellent abrasion resistance	Braided PTFE coated glass yarn Superior strength Outstanding chemical resistance Excellent flex life
Insulation Type	PTFE (FEP Jacket)	FEP / PFA / PTFE Polyimide	ETFE / FEP / PFA / PEEK / PTFE Polyimide, Zyrad	PVDF / ECTFE (PE Jacket)	PTFE
Conductor (AWG)	min 30 max 18	32 10	Various	12 (4 mm ²) 2/0	Not applicable
Conductor Type	Silver plated copper Silver plated copper covered steel	Twisted pair Multi conductor Flat twin, Single shot Types E / J / K / N / T / Vx / U Tolerances to BS EN 60584-2 (previously BS 4937-20)	Twisted pair Multi conductor	Tin annealed stranded copper	Not applicable
Service Temp °C	min -75 max 260	As per insulation type – see equipment wire overview	As per insulation type – see equipment wire overview	-40 80	-75 260
Colour Range	Brown (other colours on request)	Colour codes in accordance with BS4937-30 (IEC584-3)	Available in 11 standard colours and striped colour options	Black	White
Approvals	Belden holds a variety of international approvals, including: British standards, European norms, Nato standards, UL/CSA approvals and Military standards.				

GLOBAL LOCATIONS

For worldwide Industrial Sales
and Technical Support, visit:
www.belden.com/industrial



THE NETHERLANDS

Division Headquarters – Europe

Edisonstraat 9, P.O. Box 9
5928 PG Venlo, 5900 AA
The Netherlands

Phone: +31-77-3878-555
Fax: +31-77-3878-488
venlo.salesinfo@belden.com
web: www.belden-emea.com

UNITED KINGDOM

Belden Speciality Cable Solutions

Church Street
Littleborough OL15 8HG
Lancashire
United Kingdom

Phone: +44-1706-374015
Fax: +44-1706-370576

Manchester International Office Centre

Suite 13
Styal Road
Manchester M22 5WB
United Kingdom

Phone: +44-161-498-3749
Fax: +44-161-498-3762
manchester.salesinfo@belden.com