Belden

Belden Xtra-Guard™ Flex Cables

Longer service life in every kind of motion, backed by a 10-year warranty

Product Bulletin

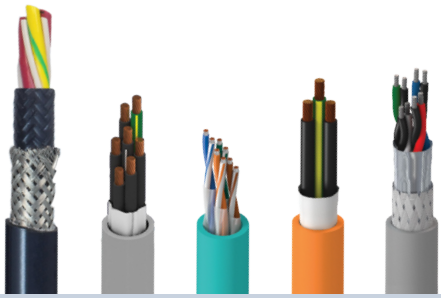


Cable failure in moving equipment stops production and pulls technicians into unplanned maintenance. Belden Xtra-Guard Flex consolidates the Belden and Alpha Wire flexing lines into one family of four motion-matched options, so the right cable is easy to specify and built to outlast the duty cycle.

- Specifying the right cable takes one decision instead of five brochures: tray, control, continuous torsional and continuous bending. MachFlex is retiring and Alpha Wire part numbers carry over.
- Cables stay in service longer, with flex life from 1 million to 20 million cycles by family and tic-toc and twist testing per MIL-C-13777G. Concentric construction also improves noise rejection.
- Rugged jackets stand up to oils, solvents, chemicals and abrasion, including washdown environments, with UL Oil Res. I/II ratings and Class I Division 2 suitability per Article 501.
- A 10-year warranty now covers every flexing cable. Order a single 100-foot reel through either Alpha Wire or Belden distributors, so low-volume machine builds are no longer a stocking problem.

Key Features

- 2 to 65 conductors, with shielded constructions available across all four families and jacket options in oil-resistant PVC, thermoplastic elastomer and polyurethane
- Flex life from 1 million to 20 million cycles depending on family, verified by tic-toc and twist testing per MIL-C-13777G, with concentric stranding for longer service life
- Tray cable family carries UL TC-ER, PLTC, MTW and WTTC ratings; the control, torsional and continuous bending families are UL AWM rated
- UL sunlight resistant, UV and abrasion resistant, suitable for NFPA 79 applications and for Class I Division 2 locations, with a 10x bend radius static and dynamic
- Supports operating temperature range of -40°C to +105°C



Belden Xtra-Guard Flex cables carry power and signal through the moving parts of a plant: exposed tray runs to motors and drives, drag chains on gantries and pick-and-place cells, plus the torsional joints of welding and paint robots that twist through 360 degrees, cycle after cycle.

Your Benefits

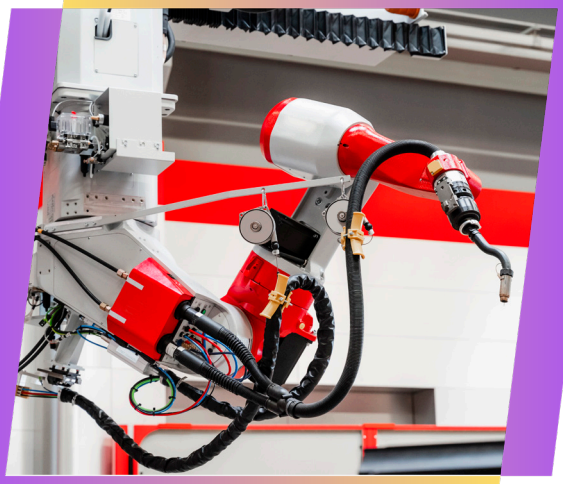
A flex cable that fails mid-cycle takes the line with it, and the replacement rarely happens during a planned maintenance window. Specifying the wrong construction for the motion is the most common cause, and until now that meant reconciling five overlapping brochures with different naming conventions. Matching the cable to the motion in four clear families removes the guesswork, and longer service life pushes replacement out of the maintenance budget. Warranty coverage now runs 10 years across the whole line. Alpha Wire part numbers carry over, so nothing has to be relearned or requalified, and either distributor network can now supply the full range.

Markets

Automotive manufacturing runs the highest concentration of welding and paint robots, where torsional flex life determines maintenance intervals. Machine building specifies flex cable into every axis it ships, and low order minimums suit short production runs. Material handling depends on conveyors, transfer shuttles and gantries in continuous motion. Food and beverage, chemical and consumer packaged goods plants add frequent washdown with FDA-approved chemicals and solvents. Oil and gas adds hazardous location requirements in Class I Division 2 areas.

Applications

Exposed tray runs carry control and power from cable trays to motors, drives, control panels, sensors, actuators and valves without conduit at fixed intervals, which lowers plant infrastructure cost. Drag chains on gantries, cranes, conveyors, transfer shuttles, pick-and-place cells and fast-cycling machine tools take continuous bending travel. Torsional joints in welding and paint robots twist through 360 degrees, across articulated, Cartesian, SCARA and delta configurations. Motion control covers high-speed vision systems, encoder and resolver feedback, case formers, case packers, conveying, vacuum packaging and PLC-controlled equipment and assemblies.



Belden Xtra-Guard Flex cable portfolio



Belden Xtra-Guard Flex Part No.	Cable Type	Voltage/ Resistance	Flex Cycles	Flex Type	Shielding	Duty Cycle	Insulation	Jacket	Temperature range
Control Tray Cable TC-ER									
XM Series	Control (TC-ER)	600V/1000V	12 million	Rolling Bending Random	Unshielded Braid	Moderate-High	PVC/Nylon	PVC	-5°C to +90°C
M18000LW/KW	Control (PLTC, PLTC-ER)	600V	1 million	Stationary	Unshielded	Low-Moderate	PVC/Nylon	PVC	-25°C to +90°C
MP10000KW/LW	Control (PLTC, PLTC-ER)	300V/600V	1 million	Stationary	Unshielded	Low-Moderate	PVC/Nylon	PVC	-25°C to +90°C
Flexible Control									
65000 Series	Control (AWM)	600V	1 million	Bending Random	Unshielded Braid	Low-Moderate	PVC	PVC	-5°C to +90°C
Continuous Torsional									
867000 & 87000 Series	Control (AWM)	600V	1 million	Torsion	Unshielded Spiral Shield	High	TPES	PU	-10°C to +80°C
Continuous Bending									
85000 Series	Control (AWM)	600V	14 million	Rolling Bending Random	Unshielded Braid	High	PVC	PVC	-5°C to +90°C
86000 Series	Data	300V	6 million	Rolling Bending Random	Unshielded Foil+Spiral Foil+Braid	High	SR-PVC	PVC	-10°C to +105°C
90000 Series	Control (AWM. PLTC, Vision Systems)	600V	1 million	Rolling Bending Random	Unshielded Braid	Low-Moderate	PVC/Nylon	TPE	-5°C to +90°C
F Series	Control (AWM)	600V	20 million	Rolling Bending Random	Unshielded	High	PVC/Nylon	TPE	-5°C to +90°C

Formerly cataloged under MachFlex or Alpha Wire, these series are now consolidated into Belden Xtra-Guard Flex. Alpha Wire Xtra-Guard Flex is retiring as a standalone name. MachFlex is retiring as a standalone name.

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