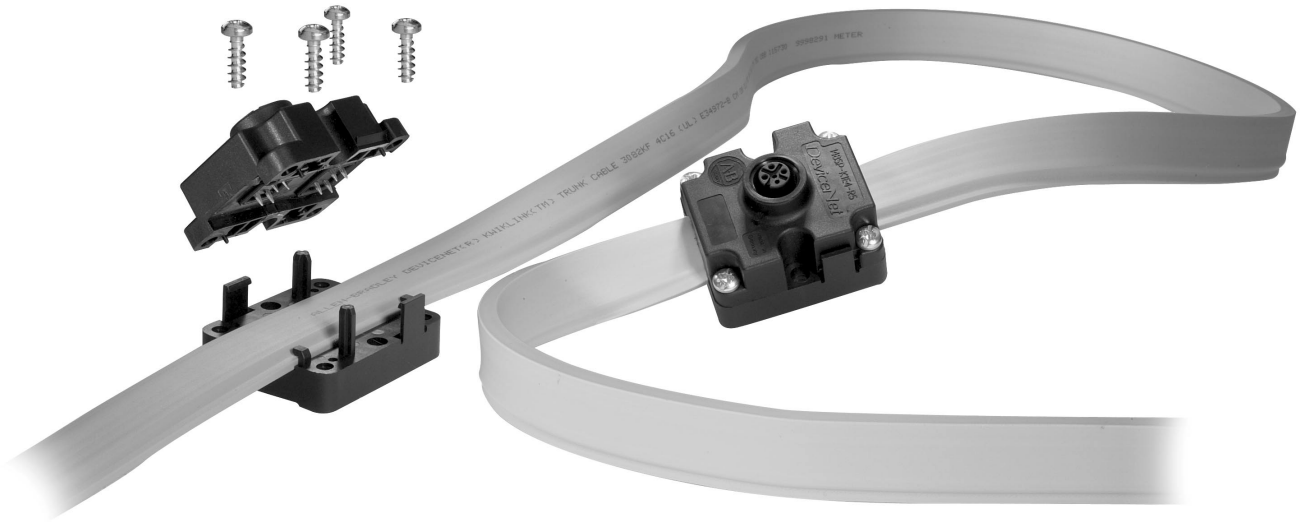
Rockwell Automation

Allen-Bradley

KwikLink™ General Purpose



This publication provides sales and application information on newly released products. The next printing of the Rockwell Automation/Allen-Bradley *Sensors* catalog will include these products and obsolete this publication.

Allen-Bradley HMIs

Introduction

General Description

DeviceNet™ is an open communication network designed to connect factory floor devices such as photoelectric sensors, inductive proximity sensors, motorstarters, drives, valve manifolds, and simple operator interfaces together without interfacing through an I/O system. It increases the amount and rate of information flowing from plant floor devices to control systems, and has the potential to substantially reduce wiring costs. Up to 64 intelligent nodes can be connected to one DeviceNet network. The ability to remove and replace devices from the network while under power without a programming tool is a distinct advantage of the DeviceNet network.

The DeviceNet network consists of a cabling system that provides both power and communication to nodes. Rockwell Automation/Allen-Bradley offers a number of media products for device connection and communication needs.

KwikLink™ Flat Media System

The KwikLink flat media system provides a simple, modular cabling method with its flat 4-wire cable and Insulation Displacement Connectors (IDCs). Designed to promote up to 50% savings in installation costs by offering a drastic reduction in labor and materials, the KwikLink system allows nodes to be added to the network quickly and easily—without severing the trunkline. Cutting or stripping of the trunkline is eliminated, as is the need for predetermined cable lengths. KwikLink offers maximum simplicity while still supporting 64 nodes.

KwikLink Heavy Duty Connectors are the original connector style for flat media. This rugged industrial connector design incorporates a removable field interface cap in a multitude of connection types including micro, mini pigtail, cable pigtail, open style, and terminator styles, in addition to splice kits for joining two separate flat media trunk sections.

KwikLink General Purpose connectors provide a simple low profile two-piece connector design for less demanding industrial applications. These micro style connectors are offered with an extremely pliable flat cable for maximum ease of installation and cable routing and are rated for use in IP67 environments.

ArmorBlock MaXum I/O is also specifically designed to provide a direct interface to the KwikLink flat media system. A full complement of accessories is also available. For complete information on system installation and associated details, see Allen-Bradley publication DN–6.7.2 and 1485–IN001A–EN–P.

Round Media— Thick Trunk System

Allen-Bradley round media thick trunk systems are based on the use of “thick cable” for DeviceNet. Allen-Bradley thick trunk cable allows maximum trunk line distance and is the original DeviceNet system configuration. Thick trunk cable is available in bulk spools or as mini male to mini female cordsets or patchcords in varying lengths. A wide variety of rugged, durable Allen-Bradley DeviceNet components are available for use in thick trunk systems. These components include drop cables, T-Ports, DeviceBox, DevicePort, PowerTap and a multitude of other components and accessories. Stainless steel versions of thick cable system components are also available. For complete information on system installation and associated details, see Allen-Bradley publication DN–6.7.2.

Round Media— Thin Trunk System

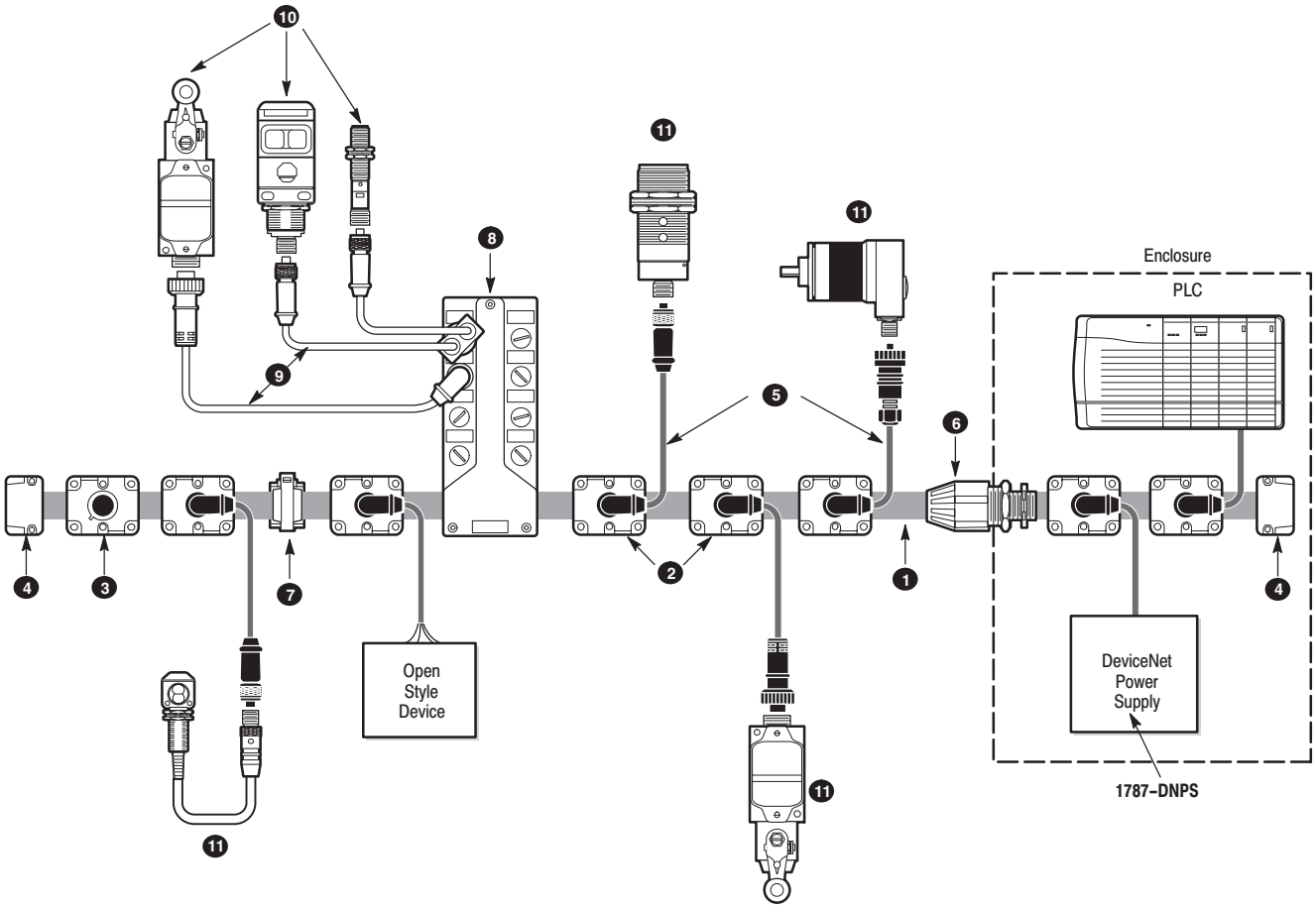
Allen-Bradley round media thin trunk systems are based on the use of “thin cable” for DeviceNet. The use of thin cable reduces maximum trunk line distances but allows for a more compact and cost effective installation for some applications. Allen-Bradley thin cable outer jacket material is TPE for additional chemical resistance. Thin trunk cable is available in a wide variety of configurations including raw spools and both micro and mini cordsets and patchcords. Similar to Allen-Bradley thick trunk systems, compatible components include T-Ports, DeviceBox, DevicePort, PowerTap, and a multitude of other components and accessories. Stainless steel versions of thin cable system components are also available. For complete information on system installation and associated details, see Allen-Bradley publication DN–6.7.2.

General Characteristics

Data Rates	125k baud	250k baud	500k baud
Flat Trunk Distance	420m (1378ft)	200m (656ft)	75m (246ft)
Thick Trunk Distance	500m (1640ft)	250m (820ft)	100m (328ft)
Thin Trunk Distance	100m (328ft)		
Max. Drop Length	6.1m (20ft)		
Cumulative Drop	156m (512ft)	78m (256ft)	39m (128ft)
Number of Nodes	64		

For detailed information on these characteristics, see Allen-Bradley publication DN 6.7.2.

Typical Configuration



See the *DeviceNet Media* Catalog.

Allen-Bradley HMIs

KwikLink™ General Purpose Flat Media System

Connectors

KwikLink General Purpose

Features

- Quick, simple installation
- Simple 2-piece, low profile housing
- Rugged, durable construction
- IP67 rated
- Designed for single use
- Integral micro connector

Specifications

Storage Temperature	–40°C to +85°C (–40°F to + 185°F)
Installation Temperature	0°C to 50°C (32°F to 122° F)
Operating Temperature	–25°C to +75°C (–13°F to +167°F)
Enclosure Rating	IP67
Vibration	0.35mm (0.014in) displacement @ 10 to 150Hz, 3 planes
Connector Body	Cover: Glass-filled polyester, type PBT Base: Glass-filled nylon, type PA66
Installation Torque	10 to 12in lbs (1.1 to 1.3Nm)
Dimensions	45mm x 40mm x 32mm (1.8in x 1.6in x 1.3in)

Description

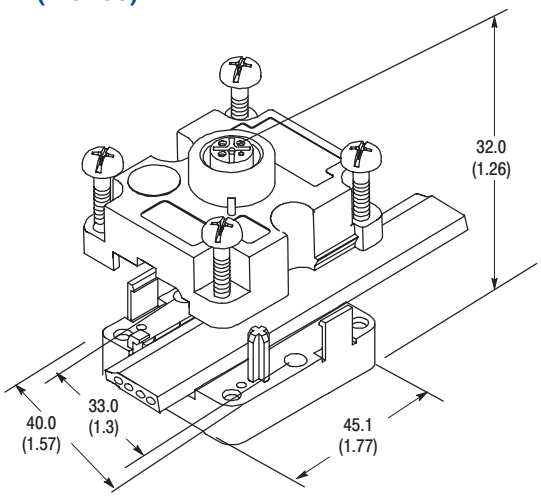
Allen-Bradley KwikLink General Purpose connectors are the next generation of the original KwikLink. Designed to interface drop cables to the flat cable trunkline with optimal plug-and-play capability at minimal cost, the KwikLink General Purpose connector's simple 2-piece design results in a low profile housing and decreases installation time.

The connector snaps onto the flat cable at any point along the trunk. Contact is made with the cable's 4 conductors by tightening 4 screws that drive the contacts through the cable jacket into the conductors.

These connectors are sealed to IP67 requirements and provide a wide working temperature range for application flexibility.

KwikLink General Purpose connectors, similar to original KwikLink, are designed for single use only and, once installed, should not be removed from the trunkline.

Dimensions—mm (inches)



Selection Guide

Connector Style	Rating	Color	Catalog Number
Micro Style	24V DC 3A	Black	**1485P–K1E4–R5**

Class 2 Flex Flat Cable

Specifications

Cable	4-conductor unshielded
Agency Approvals	UL listed and CSA certified
Operating Temperature	–25°C to +75°C (–13°F to +167°F)

Features

- Physical key to ensure proper connection alignment
- Sized to fit inside 1″ conduit
- Highly pliable PVC jacket material
- UL recognized and CSA certified

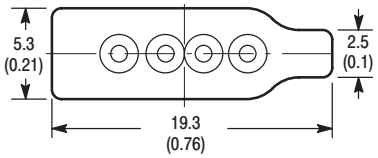
Description

KwikLink General Purpose Class 2 (CL2) flat cable is specifically designed for use with the new KwikLink General Purpose connectors. This PVC jacketed cable conforms to the same physical profile as original KwikLink flat cables, but is highly flexible for ease of installation and routing.

Note: KwikLink General Purpose Flat Cable is not recommended for use with original heavy duty KwikLink connectors.

The cable adheres to NEC Article 725, which states that for a Class 2 circuit, the power source must have a rated output of less than 30V and 100VA. In the case of DeviceNet, running at 24V, the maximum allowable current is then 100VA/24V or 4A. Therefore, KwikLink General Purpose Class 2 cable is rated to 4A at 24V DC.

Selection Guide

Dimensions—mm (inches)	Rating	Use	Jacket Material	Color	Catalog Number		
					75m Spool	200m Spool	420m Spool
	24V DC 4A (Class 2)	DeviceNet Trunk	PVC	Grey	**1485C-P1K75**	**1485C-P1K200**	**1485C-P1K420**

Allen-Bradley HMIs

KwikLink™ General Purpose Flat Media System

KwikLink™ Drop Cordsets

KwikLInk Drop Cordset

Features

- Drop cables designed exclusively for use with KwikLink systems
- Micro, mini and conductor connection
- Ratcheting coupling nut for vibration resistance

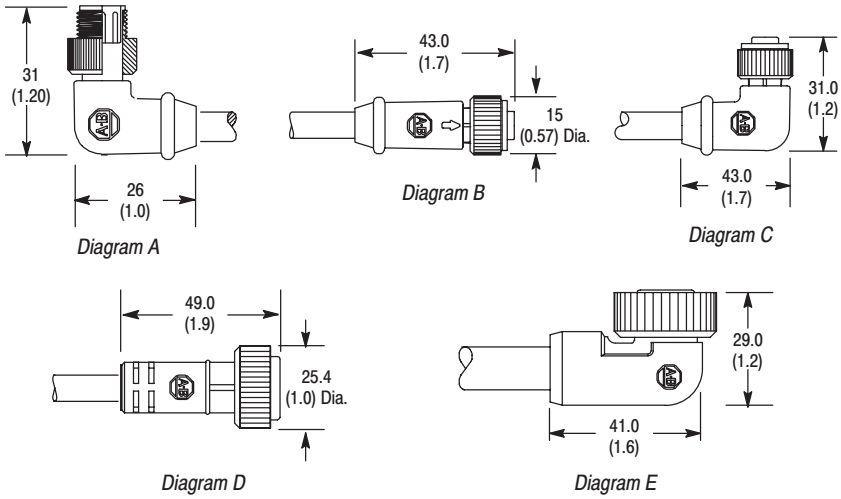
Specifications

Coupling Nut	Epoxy coated zinc
Connector	Molded oil resistant PVC
Contacts	Gold-plated palladium nickel
Cable	Oil resistant grey PVC jacket, unshielded, 22AWG power conductors, 24AWG signal conductors
Cable O.D.	6mm (0.24in)
Temperature	–20°C to +105°C (–4°F to +221°F)
Maximum Current	3 Amps

Drop Cables

Designed specifically for use with KwikLink, these drop cables come in the most common connection configurations. All trunkline connections are 90° micro male with 4-wire unshielded cable. Device connection options include 5-pin straight mini and micro as well as flying leads.

Dimensions—mm (inches)



Dimensions are approximate. Illustrations are not drawn to scale.

Selection Guide

KwikLink Drop Cable Cordsets and Patchcords

Connector Style	Dimensions (Diagram No.)	Catalog Number and Length—m (ft)					
		1 (3.3)	2 (6.5)	3 (9.8)	4 (13.1)	5 (16.4)	6 (19.7)
Rt Ang Micro Male to Conductor	A	1485K-P1F5-C	1485K-P2F5-C	—	1485K-P4F5-C	—	1485K-P6F5-C
Rt Ang Micro Male to Str Micro Female	A, B	1485K-P1F5-R5	1485K-P2F5-R5	1485K-P3F5-R5	1485K-P4F5-R5	1485K-P5F5-R5	1485K-P6F5-R5
Rt Ang Micro Male to Rt Ang Micro Female	A, C	1485K-P1F5-V5	1485K-P2F5-V5	1485K-P3F5-V5	1485K-P4F5-V5	1485K-P5F5-V5	1485K-P6F5-V5
Rt Ang Micro Male to Str Mini Female	A, D	1485K-P1F5-N5	1485K-P2F5-N5	1485K-P3F5-N5	1485K-P4F5-N5	1485K-P5F5-N5	1485K-P6F5-N5
Rt Ang Micro Male to Rt Ang Mini Female	A, E	1485K-P1F5-Z5	1485K-P2F5-Z5	1485K-P3F5-Z5	1485K-P4F5-Z5	1485K-P5F5-Z5	1485K-P6F5-Z5

Additional drop cable configurations are available, contact your local Allen-Bradley distributor.

Note: These drop cables are only for use with the KwikLink flat cable system. They are not suitable for use with standard DeviceNet round cable systems.

Accessories

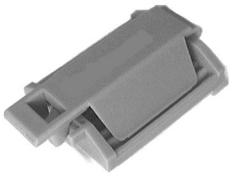
In order to support all of the options associated with the flexibility of KwikLink, Allen-Bradley offers an array of accessories including cable mounts, conduit adaptors, flat cable end caps, and threaded plugs for sealing unused micro connectors.

Catalog Number	Description
1485A–KCAP	Flat Cable End Cap
1485A–T1D5	Micro Terminator, Male
1485A–CAD	Conduit Adaptor (PG21)
1485A–FCM	Flat Cable Mounting Clamp
1485A–M12	Plastic Threaded Plug (M12)

Flat Cable End Cap

Conduit Adaptor

Micro Terminator



Mounting Clamp

M12 Threaded Plug (Plastic)

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Publication 1485–SG001A–EN–P – January, 2003

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