

General Specifications

Model WU10, WE10 and WF10
VP cable and extension cable

GS 12B06W02-02EN-P

Introduction

The WU10, WE10 and WF10 VP cables are universal sensor cables designed for the reliable transmission of analog sensor signals in demanding industrial environments. Their robust, multicore shielded construction ensures stable signal integrity even when installed alongside high-voltage or high-current cables. Available in multiple lengths and configurations, including single and dual coax versions, these cables provide flexible and dependable connectivity between Yokogawa sensors and analyzers across a wide range of process applications.

Features WU10

- Universal sensor cable for reliable analog signal transmission
- Designed for installation in heavy industrial environments
- Multicore shielded construction to minimize interference from high-voltage and high-current cables
- Available in multiple lengths
- Available in single coax and dual coax versions
- Equipped with Variopin (VP) connector for sensor and analyzer connection
- Due to VP connector, WU10 cables provide IP67 protection when correctly installed

Features WF10

- Universal sensor cable for reliable analog signal transmission
- Robust multicore shielded design suitable for industrial applications
- Dual coax cable construction
- Effective shielding against electromagnetic interference from adjacent power cables
- Available in different cable lengths
- Also available without connector (-FF) for use as an extension cable with BA10 terminal extension box
- Cables with connectors provide IP67 protection when correctly installed



Features WE10

- Universal sensor cable for reliable analog signal transmission in demanding environments
- Multicore shielded design for stable signal integrity
- Dual coax XL cable construction
- Available in lengths up to 200 m (656 ft)
- Flame-retardant, halogen-free, and UV-resistant cable jacket
- Easy Variopin (VP) connection for SENCOM SA11 SMART adapter

■ General Specifications for WU10 Single coax cable

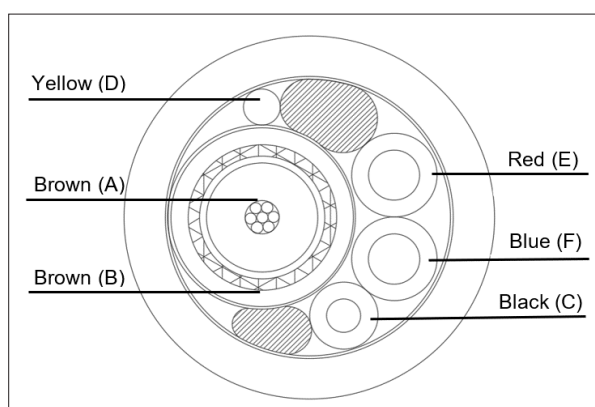
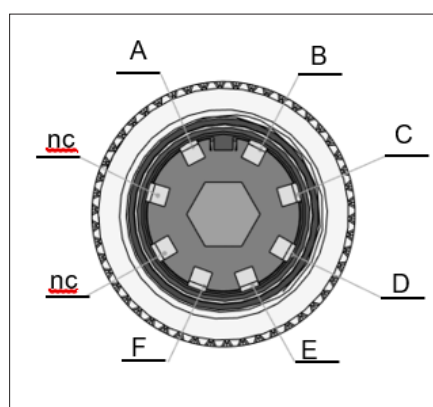
Model	WU10-V-S-...-..
Type	Single coax cable with VarioPin (VP) connector and wire pin finish
Construction	Multicore shielded cable with one low noise coax and three insulated wires and drain wire

Tabel 1: WU10-V-S single coax cable properties, part 1

Model	WU10-V-S-...-..
Type:	Single coax cable
Mechanical specifications	
Outer diameter:	6.5 mm ± 0.2 mm
Bending radius:	
<ul style="list-style-type: none"> • Fixed installation • Frequently bending 	<ul style="list-style-type: none"> ≥ 10x outer diameter ≥ 15x outer diameter
Conductors:	
<ul style="list-style-type: none"> • Coax • Wires • Drain wire 	<ul style="list-style-type: none"> Tin plated copper 7 x 0.2 mm (0.22 mm²) Tin plated copper 19 x 0.18mm (0.5 mm²) Tin plated copper 7 x 0.2 mm (0.22 mm²)
Insulation materials:	
<ul style="list-style-type: none"> • Outer jacket • Coax dielectric • Coax sheath • Wires 	<ul style="list-style-type: none"> Polyvinylchloride (PVC) Polyethylene (HDPE) Polyethylene (TPE-O) Polyolefin
Filler:	PP
Low noise layer:	Conductive film
Shielding:	
<ul style="list-style-type: none"> • Braiding • Foil shield 	<ul style="list-style-type: none"> Tinned copper wires 0.10mm optical covering nom. 90% Aluminum-coated polyester foil, 30% overlap.
Finishing:	6-P VP Female + wired pin
Colors:	
<ul style="list-style-type: none"> • Outer jacket • Coax • Wires • Drain wire 	<ul style="list-style-type: none"> Black Brown Black, Red, Blue Yellow
Weight cable:	60.0kg/km

Table 2: WU10-V-S single coax cable properties, part 2

Model	WU10-V-S-...-...
Description:	Single coax cable
Electrical specifications:	
Resistance: (@ 20°C) Lead 19 x 0.18mm Lead 7 x 0.2 mm Drain wire	≤ 40 Ω/km ≤ 80 Ω/km ≤ 45 Ω/km
Capacitance:	
• Coax (conductor-shield)	≤ 120 pF/m
• Coax (conductor-overall shield)	≤ 100 pF/m
• Coax (shield-overall shield) • Lead 19 x 0.18 (cond.-overall shield) • Lead 7 x 0.2 (cond.-overall shield) Total cable conductance	≤ 400 pF/m ≤ 150 pF/m ≤ 125 pF/m ≤ 0.8 nF/m
Mechanically induced noise: MIL-C-17G	≤ 5 mV
Insulation resistance:	
• Coax (conductor-shield)	> 1 x 10 ¹³ Ω*cm
• Conductor-overall shield	> 1 x 10 ¹³ Ω*cm
Operating voltage:	150V
Operating temperature:	
• 20.000 hrs • 1.000 hrs	-20°C...+90°C (-4°F... +194°F) -20°C...+105°C (-4°F... +221°F)
Others:	
ROHS	YES
Halogen Free	NO
Flame retardant	YES (acc. IEC 60332-1-2)
UV resistant	NO
Oil resistant	NO
Fire properties	///
Smoke properties	///
EPA	YES

**Figure 1:** Cable layout single coax**Figure 2:** VP-6 pin female

■ General Specifications for WU10 Dual coax cable and WF10 extension cable

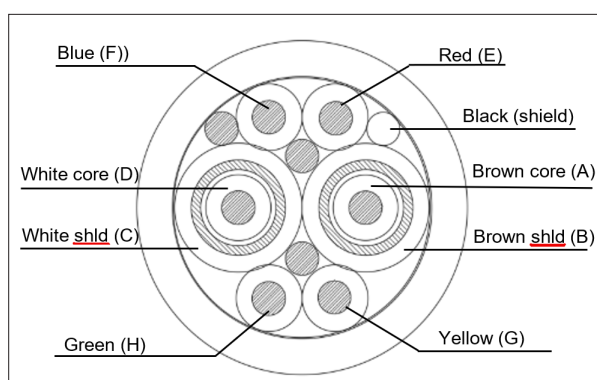
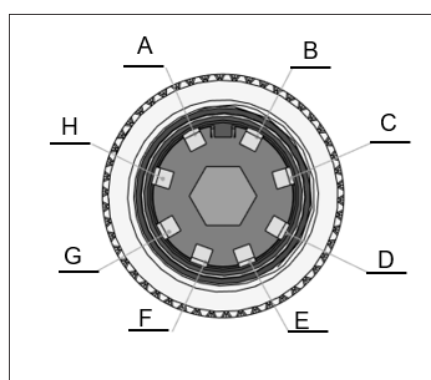
Model	WU10-V-D-...-...	WF10-...
Type	Dual coax cable with Vario pin and wire pin finish	Cable without connector (-FF) for use as extension cable with BA10 terminal extension box
Construction	Multicore shielded cable with two low noise coaxes and four insulated wires	

Tabel 3: WU10-V-D and WF10 dual coax cable properties, part 1

Model	WU10-V-D-...-... and WF10-...
Type:	Dual coax cable
Mechanical specifications	
Outer diameter:	7.0 mm ± 0.2 mm
Bending radius:	
<ul style="list-style-type: none"> • Fixed installation • Frequently bending 	≥ 10x outer diameter ≥ 15x outer diameter
Conductors:	
<ul style="list-style-type: none"> • Coax • Wires • Drain wire 	Tin plated copper 19 x 0.14mm (0.3 mm ²) Tin plated copper 19 x 0.14mm (0.3 mm ²) Tin plated copper 19 x 0.14mm (0.3 mm ²)
Insulation materials:	
<ul style="list-style-type: none"> • Outer jacket • Coax dielectric • Coax sheath • Wires 	Thermoplastic Rubber (TPK) Thermoplastic Rubber (TPK) Thermoplastic Rubber (TPK) Thermoplastic Rubber (TPK)
Filler:	Cotton
Low noise layer:	Conductive film
Shielding:	
<ul style="list-style-type: none"> • Braiding • Foil shield 	Tinned copper wires 0.10mm optical covering nom. 85% Aluminum-coated polyester foil, 30% overlap.
Finishing:	WU10: 8-P VP + wired pin WF10: Finish wire pins or no finish
Colors:	
<ul style="list-style-type: none"> • Outer jacket • Coax • Wires • Drain wire 	Black Brown, White Red, Blue, Yellow, Green Black
Weight cable:	75.5kg/km

Tabel 4: WU10-V-D dual coax cable properties, part 2

Model	WU10-V-D-... and WF10-...	
Type:	Dual coax cable	
Electrical specifications:		
Resistance: (@ 20°C) Lead 19 x 0.14mm Drain wire	≤ 45Ω/km ≤ 45Ω/km	
Capacitance:		
• Coax (conductor-shield) • Coax (conductor-overall shield) • Coax (shield-overall shield) • Lead 19 x 0.14 (cond.- overall shield) Total cable conductance	≤ 180 pF/m ≤ 110 pF/m ≤ 350 pF/m ≤ 150 pF/m ≤ 1.3 nF/m	
Mechanically induced noise: MIL-C-17G	≤ 5 mV	
Insulation resistance:		
• Coax (cond,-shield)	> 1 x 10 ¹³ Ω*cm	
• Conductor-overall shld	> 1 x 10 ¹³ Ω*cm	
Operating voltage:	150V	
Operating temperature:		
• 20.000 hrs • 3.000 hrs	-30°C ... +105°C (-22°F... + 221°F) -20°C ... +125°C (-4°F... + 257°F)	
Others:		
ROHS	YES	
Halogen Free	NO	
Flame retardant	YES (acc. IEC 60332-1-2)	
UV resistant	NO	
Oil resistant	NO	
Fire properties	///	
Smoke properties	///	
EPA	YES	

**Figure 3: VP-8 pin female****Figure 4: cable layout Dual coax**

■ General Specifications for WE10 Dual coax cable XL

Model	WE10-H-D-...-..
Type	Dual coax cable XL <ul style="list-style-type: none"> - Female connector with wire pins for direct connection to terminals - With female-male connector as extension cable - or without connectors for use as extension cable with BA10 terminal extension box
Construction	Multicore shielded cable with two low noise coaxes and four insulated wires, halogen free.

Tabel 5: WE10 Dual coax cable XL properties, part 1

Model		WE10-H-D-...-..				
Description:		Multicore shielded cable with two low noise coaxes and four insulated wires, halogen free.				
Types		-H-D-003-V1	-H-D-003-V2	-H-D-***-VF	-H-D-***-FF	-H-D-***-NN
Mechanical specifications						
Outer diameter:		8.3 mm ± 0.2 mm				
Bending radius:						
• Fixed installation		≥ 5x outer diameter				
• Frequently bending		≥ 12x outer diameter				
Conductors:						
• Coax		Tin plated copper 19 x 0.15 mm (0.34 mm ²)				
• Wires		Tin plated copper 19 x 0.15 mm (0.34 mm ²)				
• Drain wire		///				
Insulation materials:						
• Outer jacket		XL TPE-E				
• Coax dielectric		Polyethylene (TPE-O)				
• Coax sheath		Polyethylene (TPE-O)				
• Wires		Polyethylene (TPE-O)				
Filler:		Glass fiber yam				
Low noise layer:		Conductive film				
Shielding:						
• Braiding		Tinned copper wires 0.10mm, optical covering nom. 85%				
• Foil shield		Aluminized polyester foil. Conductive side to braided shield optical coverage 100%				
Finish- ing: m: male f: fe- male	Side 1: Side 2:	8-P VP (m) 8-P VP (f)	8-P VP (m) 8-P VP (f)	8-P VP (f) wired pins	wired pins wired pins	none none
Cable gland:		PG16 DIN 40430	none	none	none	none
Weight cable:		112kg/km				
Connector:						

Table 6: WE10 Dual coax cable XL properties, part 2

<ul style="list-style-type: none"> • Connector type • Housing • Contact • O-ring material • Nut • Contact pins (finish) 	<p>8-p Variopin Nickel plated brass Gold plated NBR Nickel plated brass Gold plated nickel</p>
Cable marking:	"
Colors:	
<ul style="list-style-type: none"> • Outer jacket • Coax • Wires • Drain wire 	<p>Black Brown Black, Red, Blue Yellow</p>
Electrical specifications:	
Resistance: (@ 20°C)	
• Lead 19 x 0.15mm	≤ 57 Ω/km
Capacitance:	
• Coax (conductor-shield)	≤ 225 pF/m
• Coax (conductor-overall shield)	≤ 150 pF/m
• Coax (shield-overall shield)	≤ 400 pF/m
• Lead 19 x 0.15 (cond.-overall shield)	≤ 180 pF/m
Total cable capacity	≤ 1.5 nF/m
Mechanically induced noise: MIL-C-17G	≤ 5 mV
Insulation resistance:	
• Coax (conductor-shield)	> 1 x 10 ¹³ Ω*cm
• Conductor-overall shield	> 1 x 10 ¹³ Ω*cm
Operating voltage:	450V
Operating temperature:	-20°C to +105°C for 20.000 hrs. -20°C to +125°C for 3000 hrs.
Others:	
Regulatory compliances	
<ul style="list-style-type: none"> • ROHS • Halogen Free • Flame retardant • UV resistant • Oil resistant • Fire properties • Smoke properties • EPA 	<p>YES YES (EN 50267-2-2 / IEC 60754-2) YES (acc. IEC 60332-1-2) YES (outer jacket) YES (72 h / (100 ± 2)°C / IRM 902) IEC 60332-1-2 / IEC 60332-3-24 IEC 61034-2 >60% (light transmission) YES</p>
Environmental:	
<ul style="list-style-type: none"> • Storage conditions • Hazardous areas 	-10 to +50 °C (14 to 122 °F)
• IP67 (conform IEC 60529)	Can, with the appropriate accessories and certified sensors, be used in an explosive atmosphere, hazardous areas** Conn. side: IP67* Leads: IP00

■ Model and Suffix code

Table 7: WU10 Model & Suffix code

Model Code	Suffix code	Description
WU10		Sensor cable
Connection type	-V	Variopin
Cable type	-S -D	Single coax Dual coax
Cable length	-02 -05 -10 -15 -20	2 meters 5 meters 10 meters 15 meters 20 meters

Table 8: WF10 Model & Suffix code

Model Code	Suffix code	Description
WF10		Connecting cable
Length in m	-005 up to and including 200	Length in meter between 005 and 200 with multiple of 5 meter.
Finishing	-F -N	Finished Not finished

Table 9: WE10 Model & Suffix code

Model Code	Suffix code	Description
WE10		Generic cable
Material	-H	Halogen free/low smoke/flame retardant
	-D	Dual coax
Cable Length	-002 -003 -005 -010 -020 -050 -100 -200	2 m (-VF finishing) 2.95 m (-V1, V2 finishing) 5 m (-FF, -VF finishing) 10 m (-FF, -VF finishing) 20 m (-FF, -VF finishing) 50 m (-FF, -NN finishing) 100 m (-NN finishing) 200 m (-NN finishing)
Finishing	-FF -V1 -V2 -VF -NN	Both ends wire pins finish Variopin male- female (pH conv.) Variopin male- female (universal) Variopin Female wire pins No finish

Note: V1 – for Smart Adapter, model SA11-P1
 V2 – for Smart Adapter, model SA11-P2, SA11-C1
 VF – for connection Vario pin sensors (e.g. FU20, FU24, SC25 and DO72)

■ Spare parts for WU10 and WE10

Table 10: Spare parts and description

Spare parts for Vario pin cables		
Part no.	Description	Quantity
K1548GF	O-ring for Female VP connector	5

■ Dimensional drawings

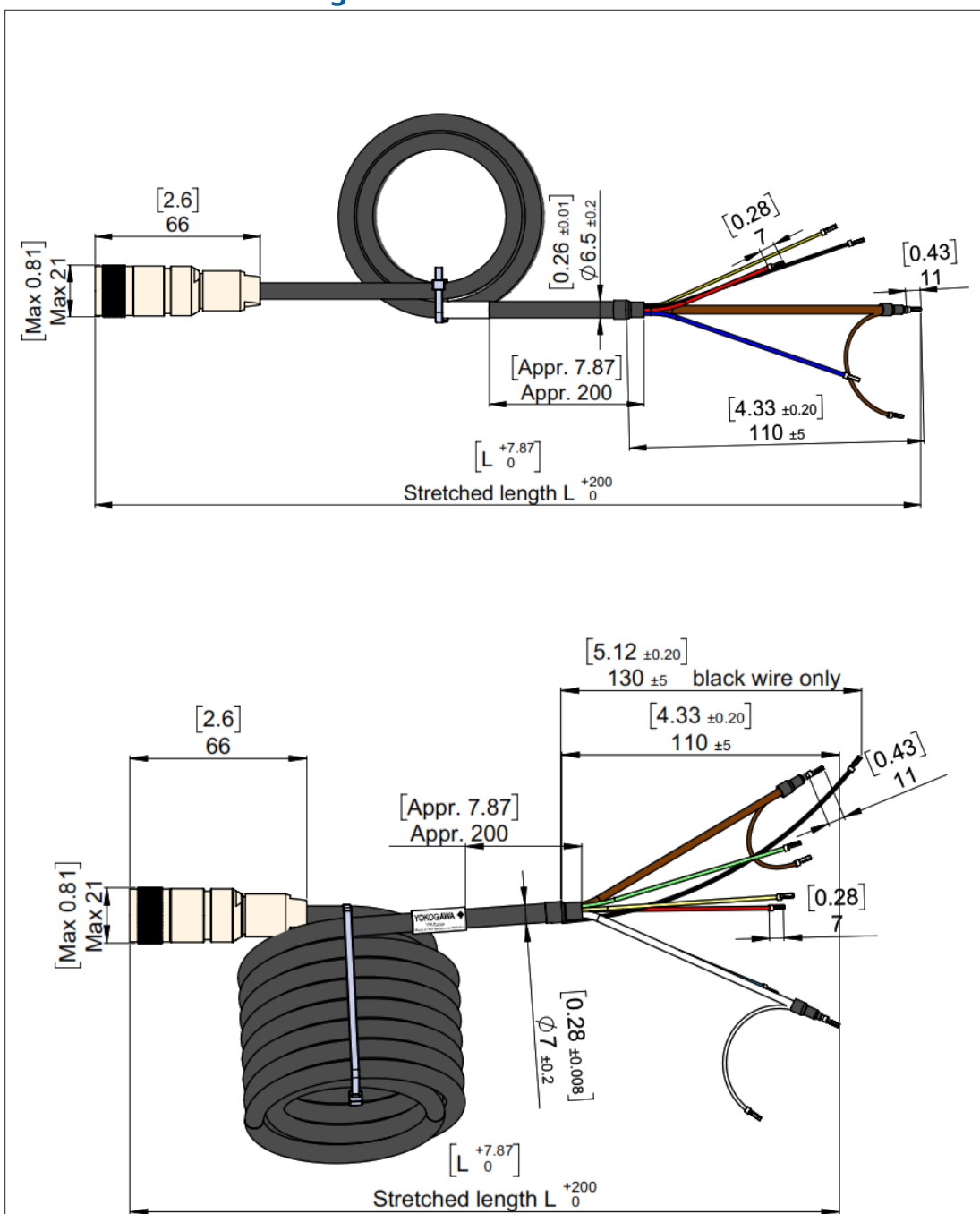


Figure 5: Dimensions WU10-V-S (top) and WU10-V-D (bottom)

Dimensions in mm [inch]

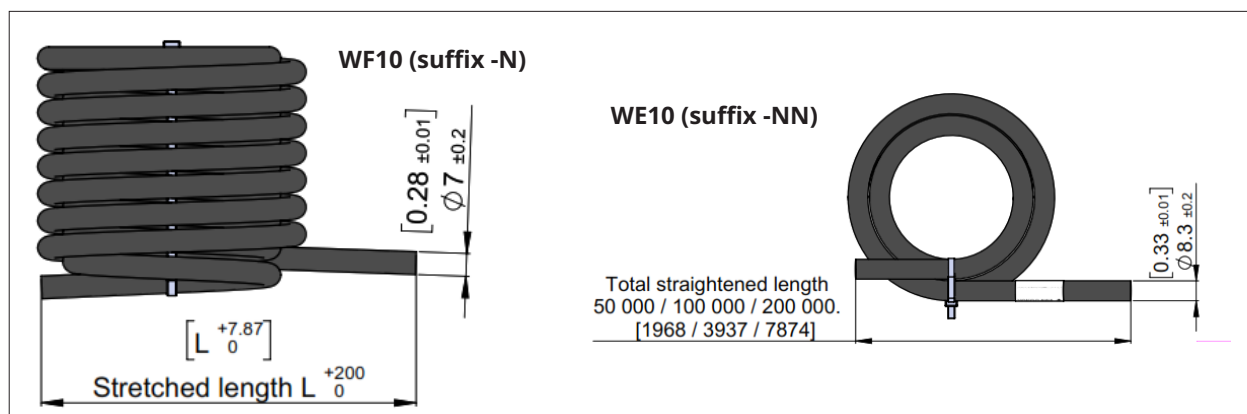


Figure 6: WF10 (suffix -N) and WE10 (suffix -NN) without cable finishing

Dimensions in mm [inch]

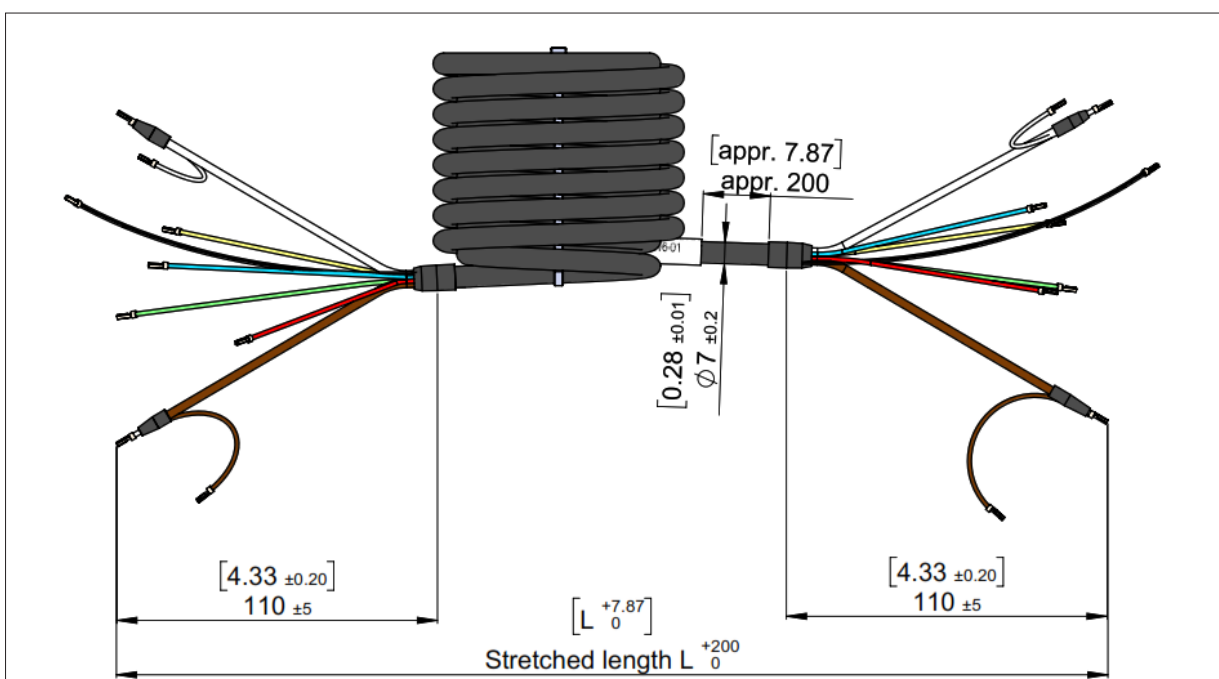
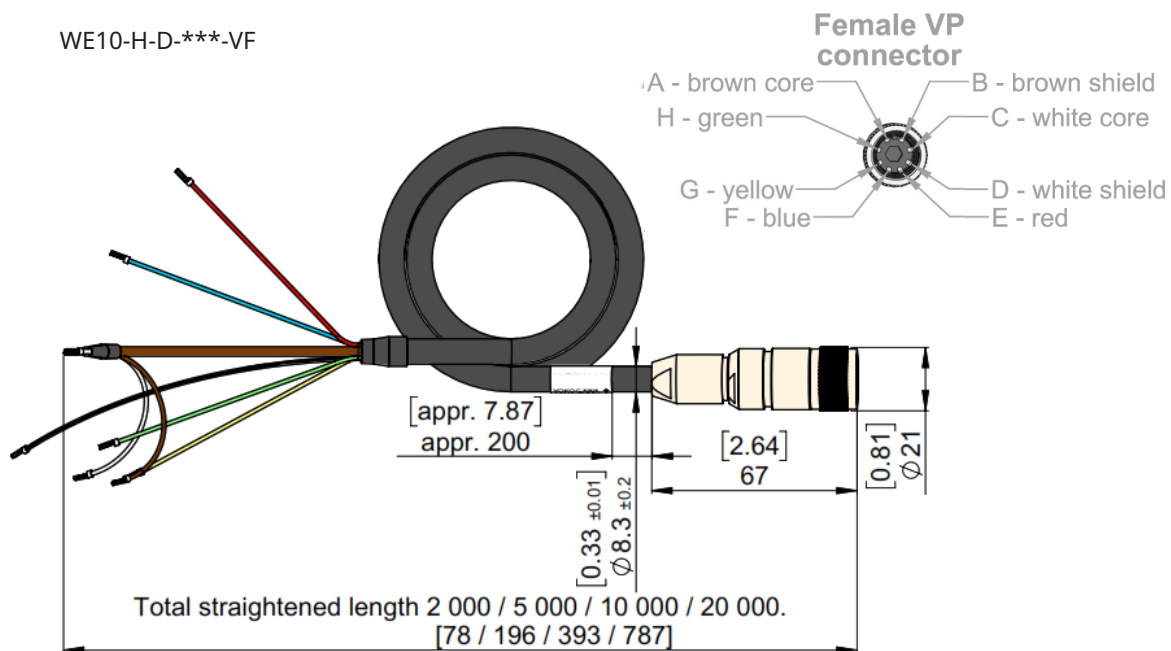


Figure 7: WF10 (suffix -F) and WE10 (suffix -FF) with wire pin cable finishing

Dimensions in mm [inch]



WE10-H-D-***-FF

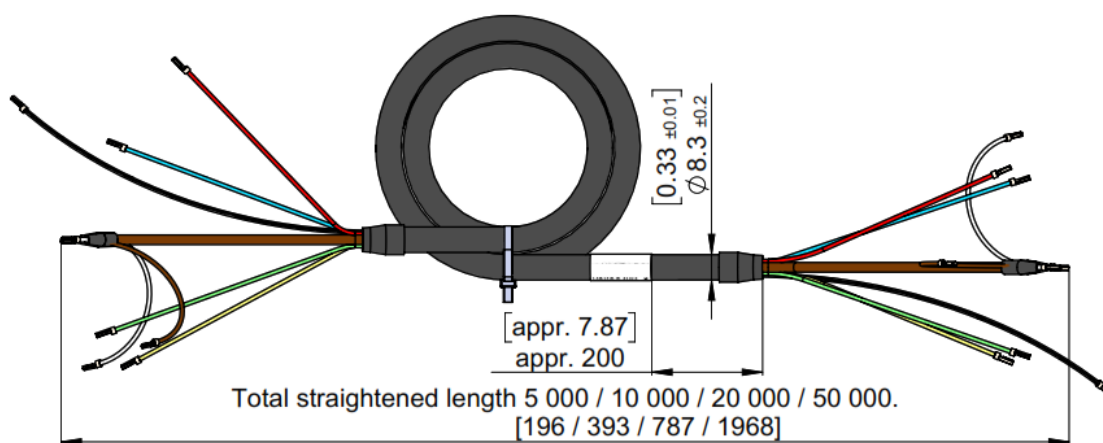


Figure 8: WE10-H-D-***-VF (top) and WE10-H-D-***-FF (bottom)

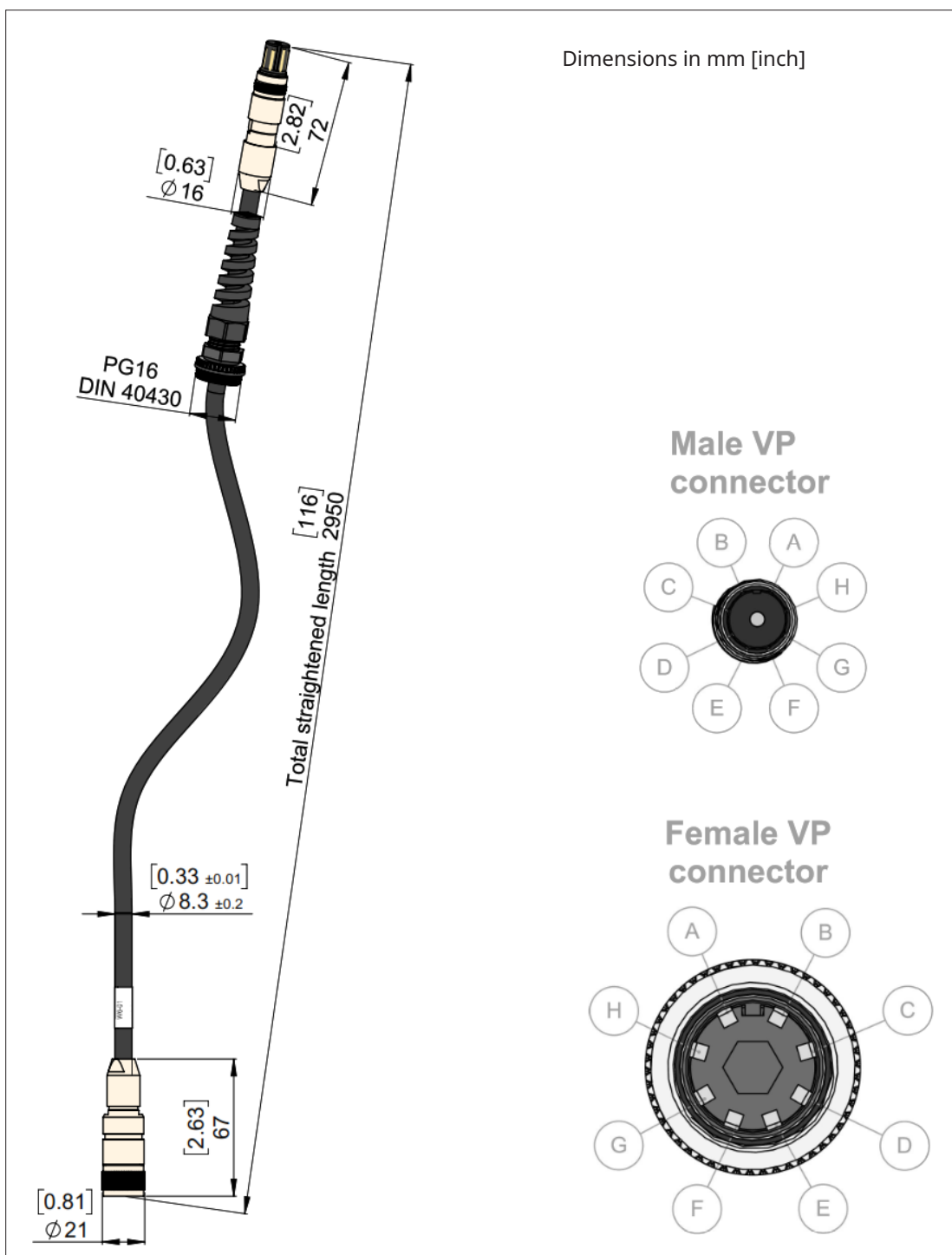


Figure 9: WE10-H-D-003-V1 / WE10-H-D-003-V2

YOKOGAWA ELECTRIC CORPORATION
World Headquarters
9-32, Nakacho 2-chome, Musashino-shi
Tokyo 180-8750
Japan
www.yokogawa.com

YOKOGAWA CORPORATION OF AMERICA
2 Dart Road
Newnan GA 30265
USA
www.yokogawa.com/us

YOKOGAWA EUROPE BV
Euroweg 2
3825 HD AMERSFOORT
The Netherlands
www.yokogawa.com/eu

YOKOGAWA ELECTRIC ASIA Pte. LTD.
5 Bedok South Road
Singapore 469270
Singapore
www.yokogawa.com/sg

YOKOGAWA CHINA CO. LTD.
Room 1801, Tower B, THE PLACE
No.100 Zunyi Road
Changing District, Shanghai, China
www.yokogawa.com/cn

YOKOGAWA MIDDLE EAST B.S.C.(c)
P.O. Box 10070, Manama
Building 577, Road 2516, Busaiteen 225
Muharraq, Bahrain
www.yokogawa.com/bh

Yokogawa has an extensive sales and distribution network.

Please refer to the European website (www.yokogawa.com/eu) to contact your nearest representative.

YOKOGAWA ◆

Printed in The Netherlands 03-2604