

M8 & M12 Connector Cables

Cordset Initiative Data Sheet

XS3F-M8 / XS3W-M8 / XS2F-M12 / XS2W-M12



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3 XS3F M8 Single-Ended
5 XS3W M8 Double-Ended
7 XS2F M12 Single Ended
9 XS2W M12 Double-Ended

Cordset Model Number Legend

Use this model number legend to identify products from their model number. When ordering, use a model number from the *Ordering Information* tables.

XS3F - M8 □□□ □ □ □□M
1 2 3 4 5

XS2F - M12 □□□ □ □ □□M
1 2 3 4 5

1. Screw Type

M8: M8 size
M12: M12 size

2. Cable Type

PVC: PVC cable material
PUR: PUR cable material

3. Number of Poles

3: 3 poles
4: 4 poles

4. Shape:

A: Angled socket
S: Straight socket

5. Cable Length

2M: 2 m
5M: 5 m
10M: 10 m

XS3W - M8 □□□ □ □□ □□M
1 2 3 4 5

XS2W - M12 □□□ □ □□ □□M
1 2 3 4 5

1. Screw Type

M8: M8 size
M12: M12 size

2. Cable Type

PVC: PVC cable material
PUR: PUR cable material

3. Number of Poles

3: 3 poles
4: 4 poles

4. Shape:

SS: Straight (plug) / Straight (socket)
SA: Straight (plug) / Angled (socket)

5. Cable Length

2M: 2 m
5M: 5 m
10M: 10 m

XS3F-M8/XS3W-M8

Small Round Water-resistive Connectors

- Water-resistive, compact connector meets IP67 requirements.
- Ideal for a wide variety of FA and OA applications.
- Connectors on both cable ends require no harness work.



 Refer to *Safety Precautions* on page 6.





Ratings and Specifications

Rated current	1A
Rated voltage	125 VDC
Contact resistance (Connector)	40 mΩ max. (20 mV max., 100 mA max.)
Insulation resistance	1,000 MΩ min. (at 500 VDC)
Dielectric strength (Connector)	AC 1,000 V 1 min. (leakage current: 1 mA max.)
Degree of protection	IP67 (IEC60529)
Temperature range	-10 to +80°C

Materials and Finish

Contacts	Copper alloy/ nickel base, gold plating
Pin block	PBT resin (UL94 V-0)
Fixtures	Copper alloy/ nickel plating
Cover	PBT resin (UL94V-0)

Connector Pinout Diagram (from Mating Side)

Item	Poles	3 poles	4 poles
DC	Male (plug) contacts		
	Female (socket) contacts		

PVC Cable

Item	3, 4 cores
Color	Black
Outer diameter	5 mm dia.
Conductor size	AWG23 0.25 mm ² (32/0.1)
Approvals	AWM2464
Features	Flame retardant

PUR Cable

Item	3 cores	4 cores
Color	Black	
Outer diameter	4.3 mm dia.	4.7 mm dia.
Conductor size	AWG22 0.32 mm ² (42/0.1)	
Approvals	AWM20936	
Features	Flame retardant Halogen free Oil resistance	

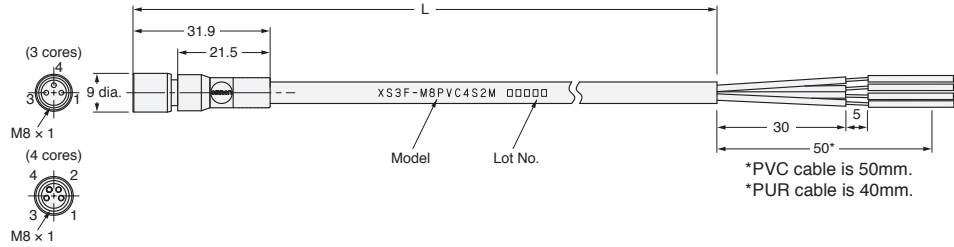
XS3F M8 Sockets on One Cable End

XS3F-M8PVC□□□□M PVC cable
 XS3F-M8PUR□□□□M PUR cable

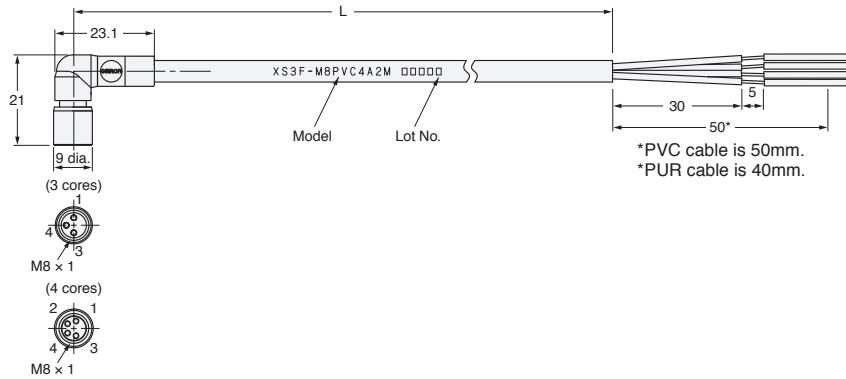
Dimensions

(Unit: mm)

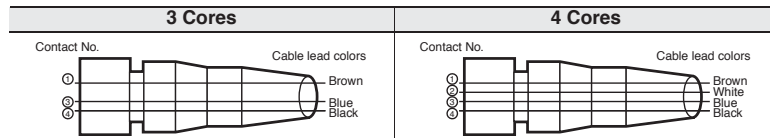
Straight



Right-angle



Wiring Diagram



Ordering Information

Cable type	No. of cable cores	Cable outer diameter	Cable connection direction	Cable length (m)	Model
PVC	3	5.0 dia.	Straight	2	XS3F-M8PVC3S2M
				5	XS3F-M8PVC3S5M
				10	XS3F-M8PVC3S10M
			Right-angle	2	XS3F-M8PVC3A2M
				5	XS3F-M8PVC3A5M
				10	XS3F-M8PVC3A10M
	4		Straight	2	XS3F-M8PVC4S2M
				5	XS3F-M8PVC4S5M
				10	XS3F-M8PVC4S10M
			Right-angle	2	XS3F-M8PVC4A2M
				5	XS3F-M8PVC4A5M
				10	XS3F-M8PVC4A10M
PUR	3	4.3 dia	Straight	2	XS3F-M8PUR3S2M
				5	XS3F-M8PUR3S5M
				10	XS3F-M8PUR3S10M
			Right-angle	2	XS3F-M8PUR3A2M
				5	XS3F-M8PUR3A5M
				10	XS3F-M8PUR3A10M
	4		Straight	2	XS3F-M8PUR4S2M
				5	XS3F-M8PUR4S5M
				10	XS3F-M8PUR4S10M
			Right-angle	2	XS3F-M8PUR4A2M
				5	XS3F-M8PUR4A5M
				10	XS3F-M8PUR4A10M

XS3W M8 Socket and Plug on Cable Ends

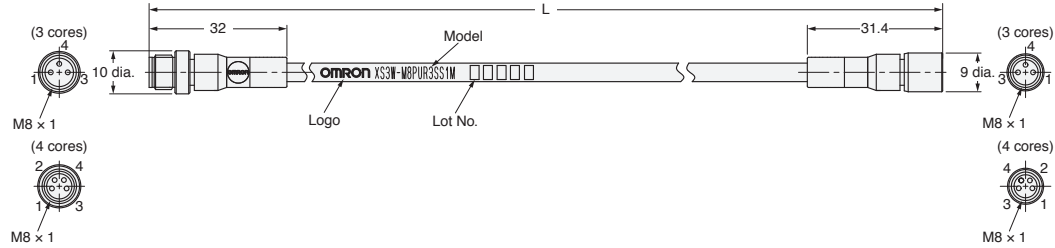
XS3W-M8PVC□□□□□M PVC Cable

XS3W-M8PUR□□□□□M PUR Cable

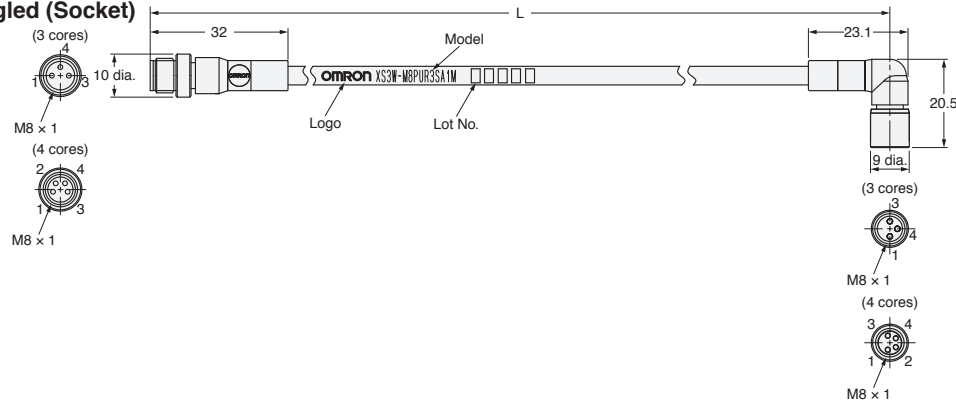
Dimensions

(Unit: mm)

Straight/Straight

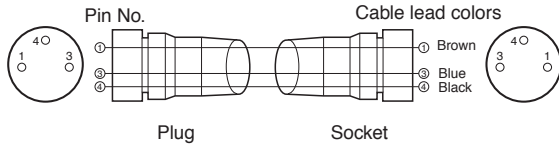


Straight (Plug)/Angled (Socket)

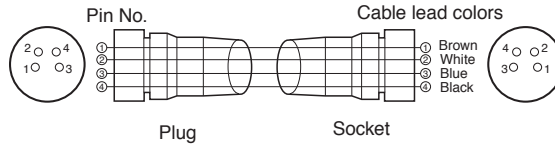


Wiring Diagram

3 poles



4 poles



Ordering Information

Cable type	No. of cable cores	Cable outer diameter	Cable connection direction	Cable length (m)	Model
PVC	3	5.0 dia.	Straight/Straight	2	XS3W-M8PVC3SS2M
				5	XS3W-M8PVC3SS5M
				10	XS3W-M8PVC3SS10M
			Straight (Plug)/Angled (Socket)	2	XS3W-M8PVC3SA2M
				5	XS3W-M8PVC3SA5M
				10	XS3W-M8PVC3SA10M
	4	5.0 dia.	Straight/Straight	2	XS3W-M8PVC4SS2M
				5	XS3W-M8PVC4SS5M
			Straight (Plug)/Angled (Socket)	10	XS3W-M8PVC4SS10M
				2	XS3W-M8PVC4SA2M
PUR	3	4.3 dia	Straight/Straight	2	XS3W-M8PUR3SS2M
				5	XS3W-M8PUR3SS5M
				10	XS3W-M8PUR3SS10M
			Straight (Plug)/Angled (Socket)	2	XS3W-M8PUR3SA2M
				5	XS3W-M8PUR3SA5M
				10	XS3W-M8PUR3SA10M
	4	4.7 dia	Straight/Straight	2	XS3W-M8PUR4SS2M
				5	XS3W-M8PUR4SS5M
			Straight (Plug)/Angled (Socket)	10	XS3W-M8PUR4SS10M
				2	XS3W-M8PUR4SA2M
4	4.7 dia	Straight (Plug)/Angled (Socket)	5	XS3W-M8PUR4SA5M	
			10	XS3W-M8PUR4SA10M	

Safety Precautions

Precautions for Correct Use

Do not use the product in atmospheres or environments that exceed product ratings.

Connections

- The XS3 and XS2 Sensor I/O Connectors cannot be connected to each other.
- When using Sensors with Connectors or Limit Switches, use the Sensor I/O Connectors specified in the catalog.

Connector Connection and Disconnection

- Before connecting or disconnecting Connectors, make sure that no power is being supplied to the Connectors.
- When connecting or disconnecting Connectors, be sure to hold the Connectors by hand. Do not disconnect the Connectors by pulling the cable.
- Do not touch the engagement side of any Connector with wet hands. If there is any water on the Connector or near the Connector, be sure to wipe off the water before connecting or disconnecting the Connector, otherwise the Connector may short-circuit internally or not ensure good insulation.
- Make sure that engagement side of any Connector is free of metal dust or power.
- Do not use pliers to tighten mounting the thread bracket, otherwise the thread bracket may be damaged. Be sure to tighten each thread bracket by hand within a torque of 0.2 N·m. If the thread bracket is not tightened securely, the Connector may not maintain its proper degree of protection or the thread bracket may fall off due to vibration.

Degree of Protection

- Do not impose external force continuously on the joints of pin blocks and covers, otherwise the Connectors may not keep its proper degree of protection (i.e., IP67).
- Connectors are not fully watertight. Do not use them underwater.
- The Connectors are not oil-resistant. Do not use them where they would be subject to oil.
- If Connectors are used in places with vibration or shock, secure the engaged side of each Connector, otherwise the Connectors may be disconnected or fail to maintain their proper degree of protection.
- Connectors are of resin mold construction. Do not impose excessive force on them.

Storage

Do not store Connectors for long periods of time in the following locations.


- Locations subject to dust or high humidity.
- Locations subject to ammonia gas or sulfide gas Installation.
- Do not make any cable bends near the base of the Unit.
- Any bends made must have a minimum radius of 36 mm.

XS2F-M12/XS2W-M12

Water- and Environment-resistive FA Connectors Save Wiring and Maintenance Effort

- Compact FA connectors meet IP67 requirements and ensure a 94V-0 fire retardant rating.
- A wide array of connectors makes a wiring system more modular, simplifies maintenance, and reduces downtime.
- IEC61076-2-101 (IEC60947-5-2)



 Refer to *Safety Precautions* on page 10.

Ratings and Specifications

Item	XS2F-M12□□□□□□□M XS2W-M12□□□□□□□M
Rated current	4A
Rated voltage	125 VDC
Contact resistance (Connector)	40 mΩ max. (20 mV max., 100 mA max.)
Insulation resistance	1,000 MΩ min. (at 500 VDC)
Dielectric strength (Connector)	AC 1,500 V 1 min. (leakage current: 1 mA max.)
Degree of protection	IP67 (IEC60529)
Temperature range	-10 to +80°C

Materials and Finish

Contacts	Copper alloy/ nickel base, gold plating
Pin block	PBT resin (UL94 V-0)
Fixtures	Copper alloy/ nickel plating
Cover	PBT resin (UL94V-0)



PVC Cable

Item	3 cores	4 cores
Color	Black	
Outer diameter	5 mm dia.	5 mm dia.
Conductor size	AWG23 0.25 mm ² (32/0.1)	
Approvals	AWM2464	
Features	Flame retardant	

PUR Cable

Item	3 cores	4 cores
Color	Black	
Outer diameter	4.3 mm dia.	4.7 mm dia.
Conductor size	AWG22 0.32 mm ² (42/0.1)	
Approvals	AWM20936	
Features	Flame retardant, Flame class: VW-1 Halogen free Oil resistance	

Connector Pinout Diagram (from Mating Side)

Item	No. of poles	4 poles
DC type	Male (plug) contacts	
	Female (socket) contacts	

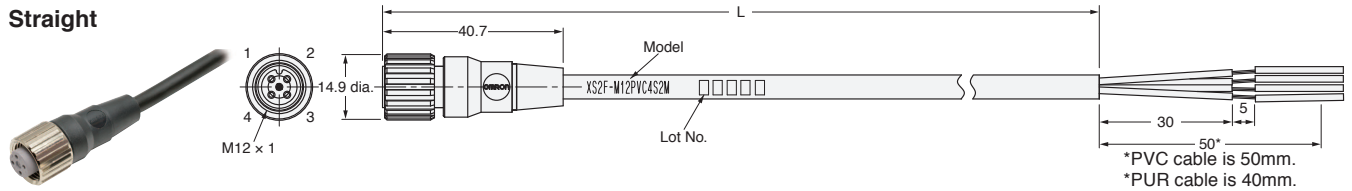
XS2F M12 Sockets on One Cable End

XS2F-M12PVC□□□□M PVC cable
 XS2F-M12PUR□□□□M PUR cable

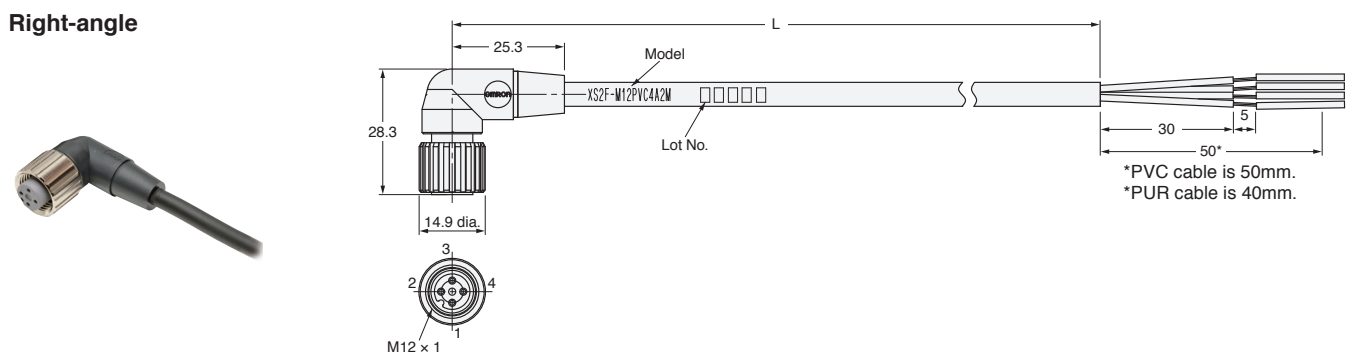
Dimensions

(Unit: mm)

Straight

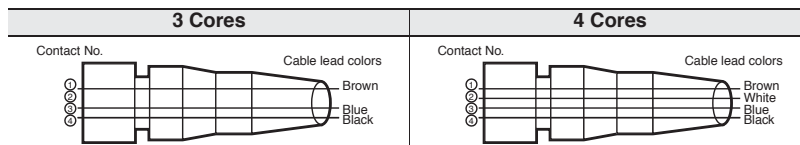


Right-angle



Note: For 3-core, pin 2 is not connected internally

Wiring Diagram



Ordering Information

Cable type	No. of cable cores	Cable outer diameter	Cable connection direction	Cable length (m)	Model
PVC	3	5.0 dia	Straight	2	XS2F-M12PVC3S2M
				5	XS2F-M12PVC3S5M
				10	XS2F-M12PVC3S10M
			Right-angle	2	XS2F-M12PVC3A2M
				5	XS2F-M12PVC3A5M
				10	XS2F-M12PVC3A10M
	4	5.0 dia	Straight	2	XS2F-M12PVC4S2M
				5	XS2F-M12PVC4S5M
				10	XS2F-M12PVC4S10M
			Right-angle	2	XS2F-M12PVC4A2M
				5	XS2F-M12PVC4A5M
				10	XS2F-M12PVC4A10M
PUR	3	4.3 dia	Straight	2	XS2F-M12PUR3S2M
				5	XS2F-M12PUR3S5M
				10	XS2F-M12PUR3S10M
			Right-angle	2	XS2F-M12PUR3A2M
				5	XS2F-M12PUR3A5M
				10	XS2F-M12PUR3A10M
	4	4.7 dia	Straight	2	XS2F-M12PUR4S2M
				5	XS2F-M12PUR4S5M
				10	XS2F-M12PUR4S10M
			Right-angle	2	XS2F-M12PUR4A2M
				5	XS2F-M12PUR4A5M
				10	XS2F-M12PUR4A10M

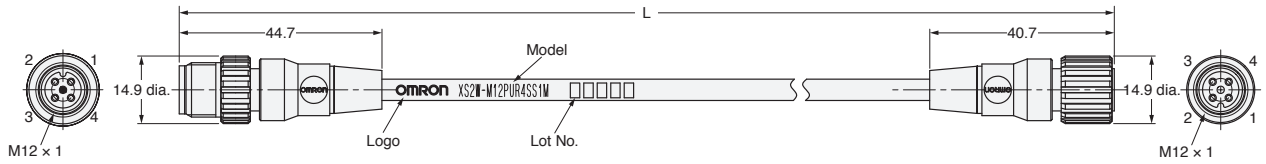
XS2W M12 Socket and Plug on Cable Ends

XS2W-M12PVC□□□□M PVC Cable
 XS2W-M12PUR□□□□M PUR Cable

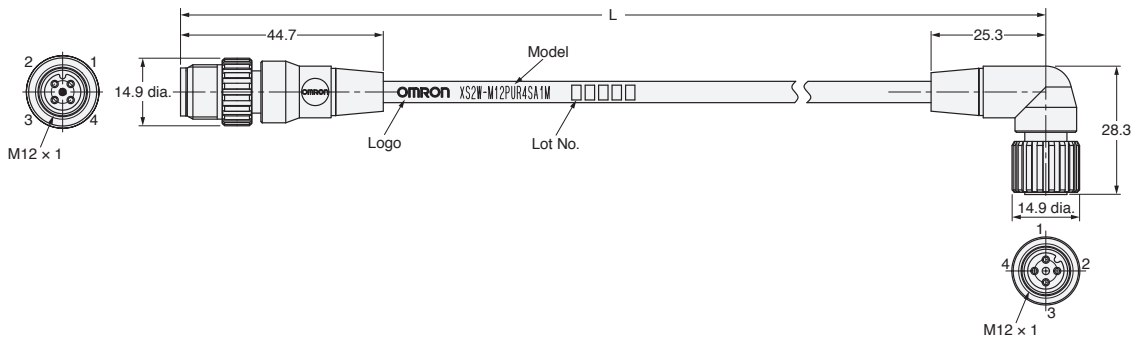
Dimensions

(Unit: mm)

Straight/Straight

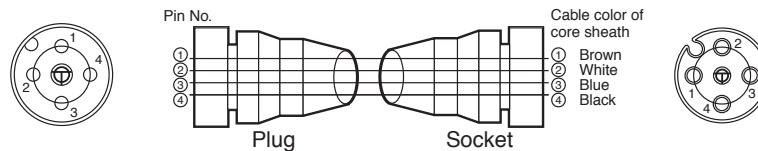


Straight (Plug)/Angled (Socket)



Note: For 3-core, pin 2 is not connected internally

Wiring Diagram



Ordering Information

Cable type	No. of cable cores	Cable outer diameter	Cable connection direction	Cable length (m)	Model
PVC	4	5.0 dia.	Straight/Straight	2	XS2W-M12PVC4SS2M
				5	XS2W-M12PVC4SS5M
				10	XS2W-M12PVC4SS10M
		Straight (Plug)/Angled (Socket)	2	XS2W-M12PVC4SA2M	
			5	XS2W-M12PVC4SA5M	
			10	XS2W-M12PVC4SA10M	
PUR	4	4.7 dia.	Straight/Straight	2	XS2W-M12PUR4SS2M
				5	XS2W-M12PUR4SS5M
				10	XS2W-M12PUR4SS10M
		Straight (Plug)/Angled (Socket)	2	XS2W-M12PUR4SA2M	
			5	XS2W-M12PUR4SA5M	
			10	XS2W-M12PUR4SA10M	

Safety Precautions

Precautions for Correct Use

Do not use the Connectors in an atmosphere or environment that exceeds the specifications.

Connector Connection and Disconnection

- When connecting or disconnecting Connectors, be sure to hold the Connectors by hand.
- When mating the Connectors, tighten the lock by hand to a torque of 0.39 to 0.49 N·m.
- Do not hold the cable when disconnecting Connectors. Do not use tools of any sort to mate the Connectors. Always use your hands. Pliers or other tools may damage the Connectors.

Wiring

- Always confirm wiring diagrams before wiring sensors, limit switches, or other devices.
- Lay the cables so that external force is not applied to the Connectors. Otherwise, the degree of protection (IP67) may not be achieved.

Degree of Protection

- The degree of protection of Connectors (IP67) is not for a fully watertight structure. Do not use the Connectors underwater.
- Do not step on or place any objects on the Connectors. Doing so may damage the Connectors.

General Precautions

- Do not pull excessively on the Connectors or cables. Do not install the Connectors or cables in any way that would place a load directly on the mating section or cable connections. Doing so can damage the Connectors or break the wires inside the cables.
- Install the Connectors and cables where they will not be stepped on to prevent the wires inside the cables from being broken and to prevent the Connectors from being damaged. If the Connectors or cables must be installed where they might be stepped on, protect them with covers.
- Refer to the specifications for your cables before bending the cables and do not bend them past their minimum bending radius.
- If sensors or switches are not attached during installation, protect the mating surface of the Connector with a XS2Z-22 Waterproof Cover or XS2Z-14/15 Dust Cover.
- Any bends made must have a minimum radius of 40 mm.

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