



5-Port Solenoid Valve

52-SY-X140 Series

Ex ia IIC T4 to T6 Gb

Specifications

Series	52-SY5000-X140		52-SY7000-X140	52-SY9000-X140
Ambient and fluid temperature	Temperature class T6	-10 to 45°C (No freezing)		
	Temperature class T4, T5	-10 to 50°C (No freezing)		
Coil temperature rise	40°C less (at rated)			
Max. operating frequency	1 Hz			
Coil rated voltage (hazardous area)	12 VDC at 0.52 W			
Intrinsically safe	ia			
Gas group	IIC			
Protection rating	L type	Plug connector type	IP30 (LL type : IP40)	
	TT type	Cable type	IP65	
Impact/Vibration resistance	m/s ² (Note)		150/30	

Note) Impact resistance: No malfunction resulted from the impact test using a drop impact tester. The test were performed one time each in the axial and right angle directions of the main valve and armature, in both energized and de-energized states (Valve in the initial stage).

Vibration resistance: No malfunction occurred in a one-sweep test between 8.3 and 2000Hz. The test was performed for both energized and de-energized states in the axial and right angle directions of the main valve and armature (valve in the initial stage).

Standard SY manifolds Types 20, 41, 42 are used for 52-SY valves.

Manifold Specifications for 20 Type

Model	SS5Y5-20	SS5Y7-20
Applicable valve	52-SY5□20-X140	52-SY7□20-X140
Manifold style	Single base / B mounting	
1 (SUP) / 3/5 (EXH)	Common SUP / Common EXH	
Valve stations	2 to 20 ⁽¹⁾	
4/2 (A/B) Location	Valve	
Port size	1,3,5 (P,EA,EB) Port	1/4
	4,2 (A,B) Port	1/8 C4 (One-touch fitting for ø4) C6 (One-touch fitting for ø6) C8 (One-touch fitting for ø8)
Manifold base weight W (g) n: Station	W = 36n + 6	W = 43n + 64

Note 1) For more than 10 stations (more than 5 stations in case of SS5Y7), supply pressure to P port on both sides and exhaust from EA/EB port on both side.

Note 2) 52-SY9□20-X140 valve are not available with manifold as standard.

⚠ Safety Instructions

- 1) This product is not suitable for Zone 0. The suitable zones are Zones 1 and 2.
- 2) SMC-TAS and TAV Series, antistatic tubing, are available if required.
- 3) The solenoid valve has polarity. Confirm the correct polarity by observing the color of the lead wires. If the polarity is reversed, the barrier may be damaged.
- 4) Confirm that the solenoid input voltage at the lead wires is 10.8 VDC (min).
- 5) This product must be connected to an appropriate insulation barrier (CCC certified explosion-proof electrical product), or a certified intrinsically safe circuit, with the following max. values. It is no longer certified if connected to a Zener barrier.
 - U_i = 28V
 - I_i = 225mA (resistively limited)
 - P_i = 1W
 - C_i = 0 nF
 - L_i = 0 mH

Manifold Specifications for 41 and 42 Type

Model	SS5Y5-41	SS5Y5-42	SS5Y7-42
Applicable valve	52-SY5□40-X140		52-SY7□40-X140
Manifold style	Single base / B mounting		
1 (SUP) / 3/5 (EXH)	Common SUP / Common EXH		
Valve stations	2 to 20 ⁽¹⁾		
4/2 (A/B) Location	Base		
Porting spec.	Location	Side	
	Direction	Side	
Port size	1,3,5 (P,EA,EB) Port	1/4	1/4
	4,2 (A,B) Port	1/8 C6 (One-touch fitting for ø6) C8 (One-touch fitting for ø8)	1/4 C6 (One-touch fitting for ø6) C8 (One-touch fitting for ø8)
Manifold base weight W (g) n: Station	W = 61n + 101	W = 79n + 127	W = 100n + 151

Note 1) For more than 10 stations (more than 5 stations in case of SS5Y7), supply pressure to P port on both sides and exhaust from EA/EB port on both side.

Note 2) 52-SY9□40-X140 valve are not available with manifold as standard.

Note 3) 52-SY-X140 series are not available with resin type manifold (45 type).

How to order

52-SY 5 1 2 0 - L 3 - 01 F - X140

Explosion-proof

52	Intrinsically safe explosion-proof construction
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Series

5	52-SY5000-X140
7	52-SY7000-X140
9	52-SY9000-X140

Type of actuation

1	2-position single
2	2-position double
3	3-position closed centre
4	3-position exhaust centre
5	3-position pressure centre
A <small>Note 1)</small>	4-position dual 3-port valve (N.C./N.C.)
B <small>Note 1)</small>	4-position dual 3-port valve (N.O./N.O.)
C <small>Note 1)</small>	4-position dual 3-port valve (N.C./N.O.)

Note 1) 4-position dual 3-port valves are available for 52-SY5000 only.

Piping type

2	Body ported type
4	Base mounted type

Pilot type

Nil	Internal pilot
R <small>Note)</small>	External pilot

Note) Base mounted type only.

Electrical entry

L	Plug connector type
LL	Plug connector with cover type
TT	Cable type

Note) TT-type is connected to the terminal block. Cables other than the connected one cannot be used.

Lead wire length

3	300 mm
6	600 mm
10	1000 mm
15	1500 mm
20	2000 mm
30	3000 mm
100	10000 mm (Semi-standard)

* L type has 300 mm and 600 mm only.

• **CCC certified explosion-proof electrical product**

• **Bracket**

Nil	Without bracket
F1	With foot bracket <small>Note 1)</small>
F2	With side bracket

Note 1) 2-position single solenoid valve only.

Note 2) 52-SY9000-X140 has no bracket.

• **Thread type**

Nil	Rc
F	G
N	NPT
T	NPTF

• **A, B port size (Body ported type)**

Symbol	Port size	Applicable series
01	1/8	52-SY5000-X140
02	1/4	52-SY7000-X140
02	1/4	52-SY9000-X140
03	3/8	

• **Port size (Base mounted type)**

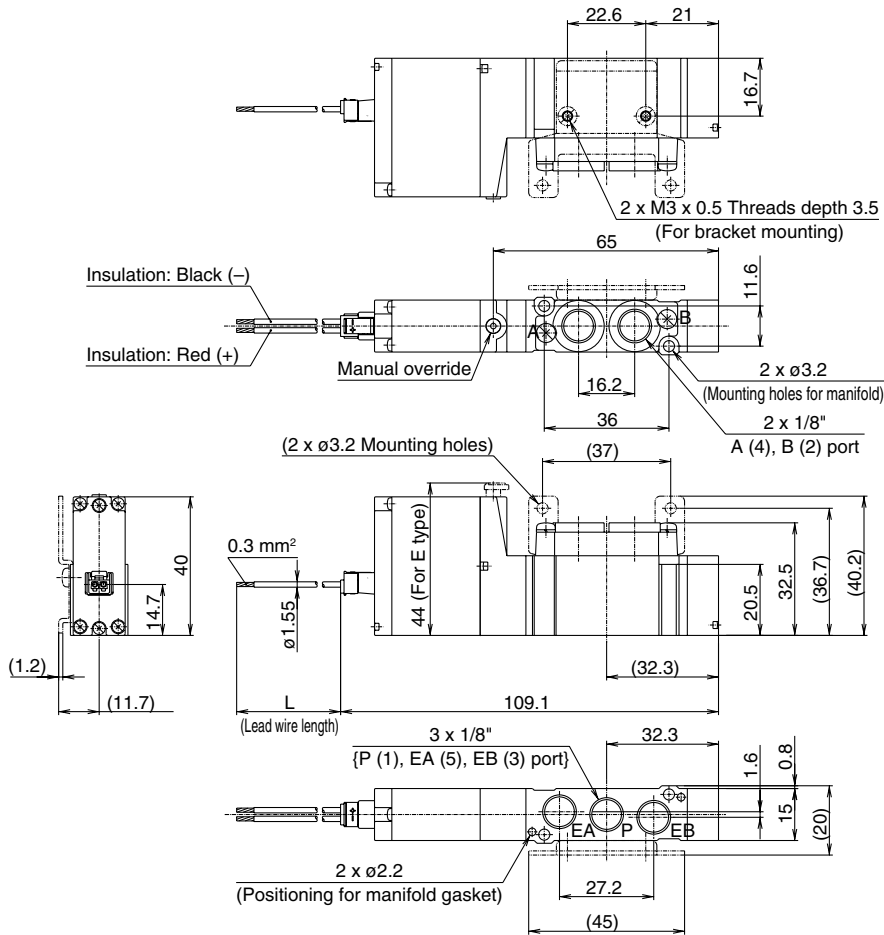
Symbol	Port size	Applicable series
Nil	Without sub-plate	
02	1/4	52-SY5000-X140
02	1/4	52-SY7000-X140
03	3/8	
03	3/8	52-SY9000-X140
04	1/2	

• **Manual override**

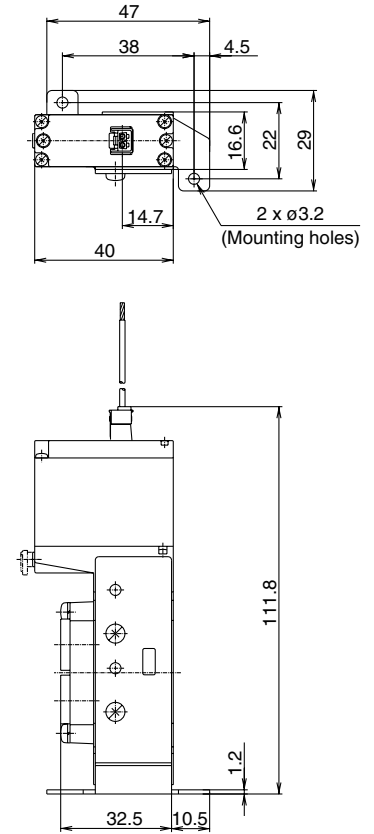
Nil	Non-locking push type
D	Push-turn locking slotted type
E	Push-turn locking lever type

Dimensions

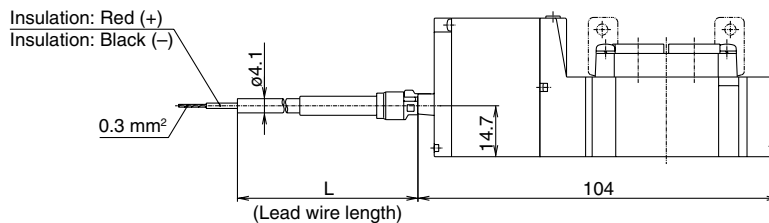
2-position single L plug connector (L) 52-SY5120-L□□-01□ (-F2)-X140



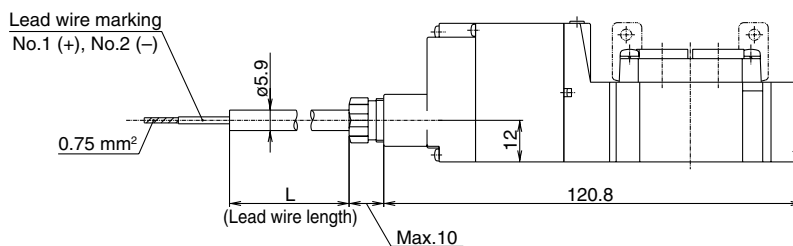
In case with foot bracket 52-SY5120-L□□-01□-F1-X140



L plug connector with cover (LL) 52-SY5120-LL□□-01□ (-F2)-X140



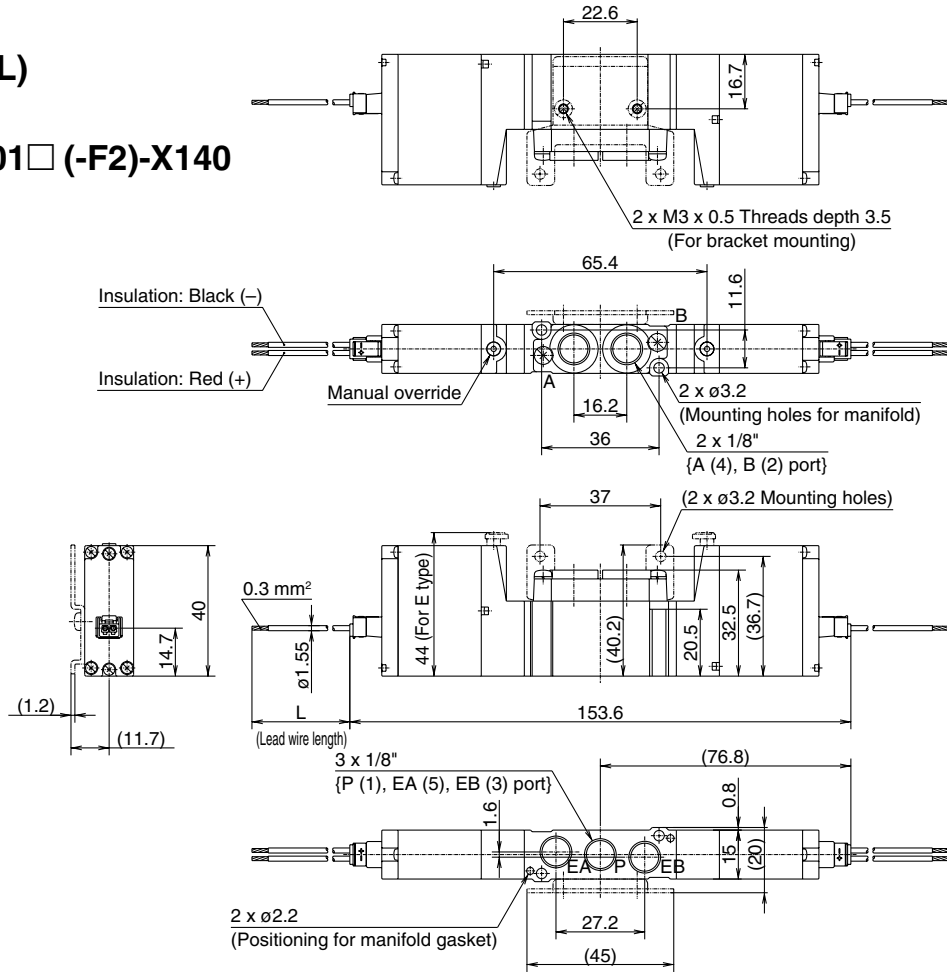
Cable type (TT) 52-SY5120-TT□□-01□ (-F2)-X140



Dimensions

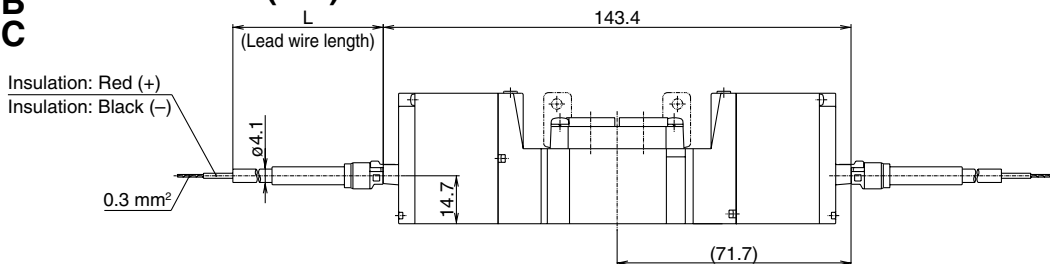
**2-position double
L plug connector (L)**

2
A
B
C
52-SY520-L□□-01□ (-F2)-X140



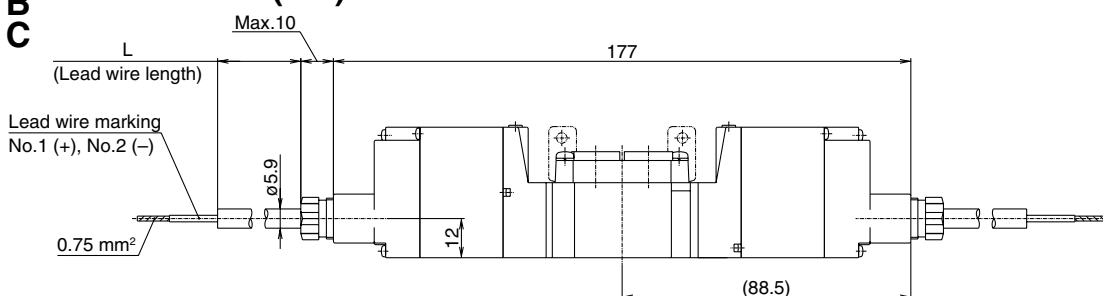
L plug connector with cover (LL)

2
A
B
C
52-SY520-LL□□-01□ (-F2)-X140



Cable type (TT)

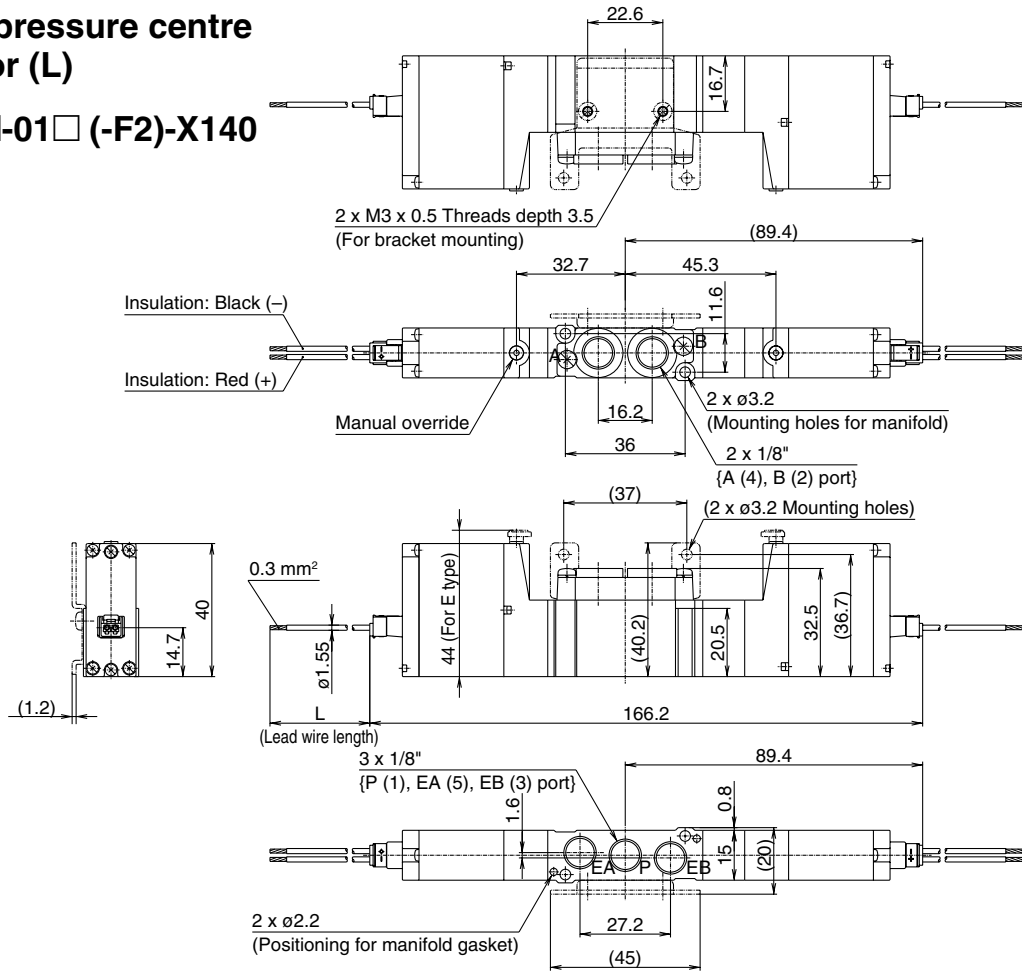
2
A
B
C
52-SY520-TT□□-01□ (-F2)-X140



Dimensions

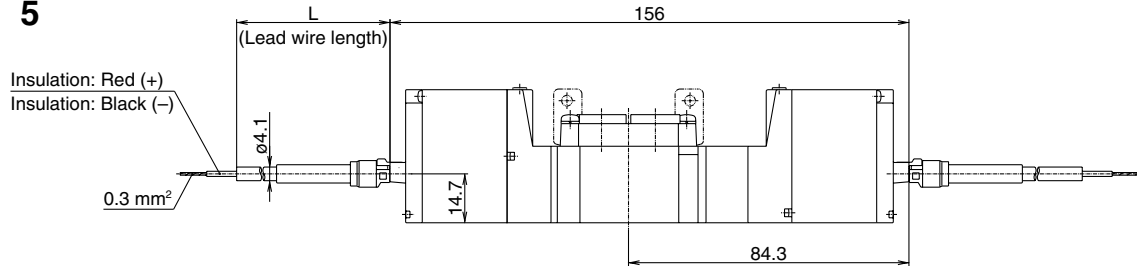
**3-position closed centre/
exhaust centre/pressure centre
L plug connector (L)**

52-SY5420-L□□-01□ (-F2)-X140



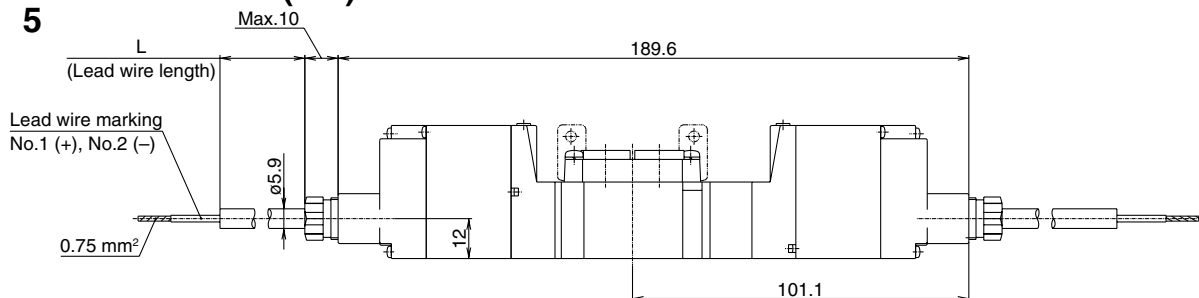
L plug connector with cover (LL)

52-SY5420-LL□□-01□ (-F2)-X140



Cable type (TT)

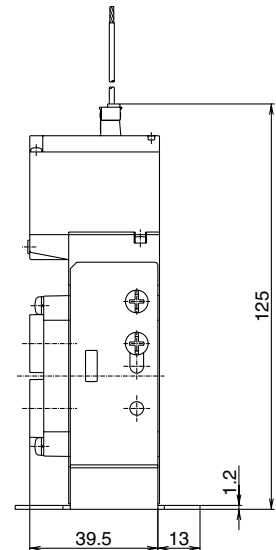
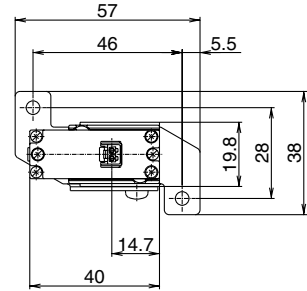
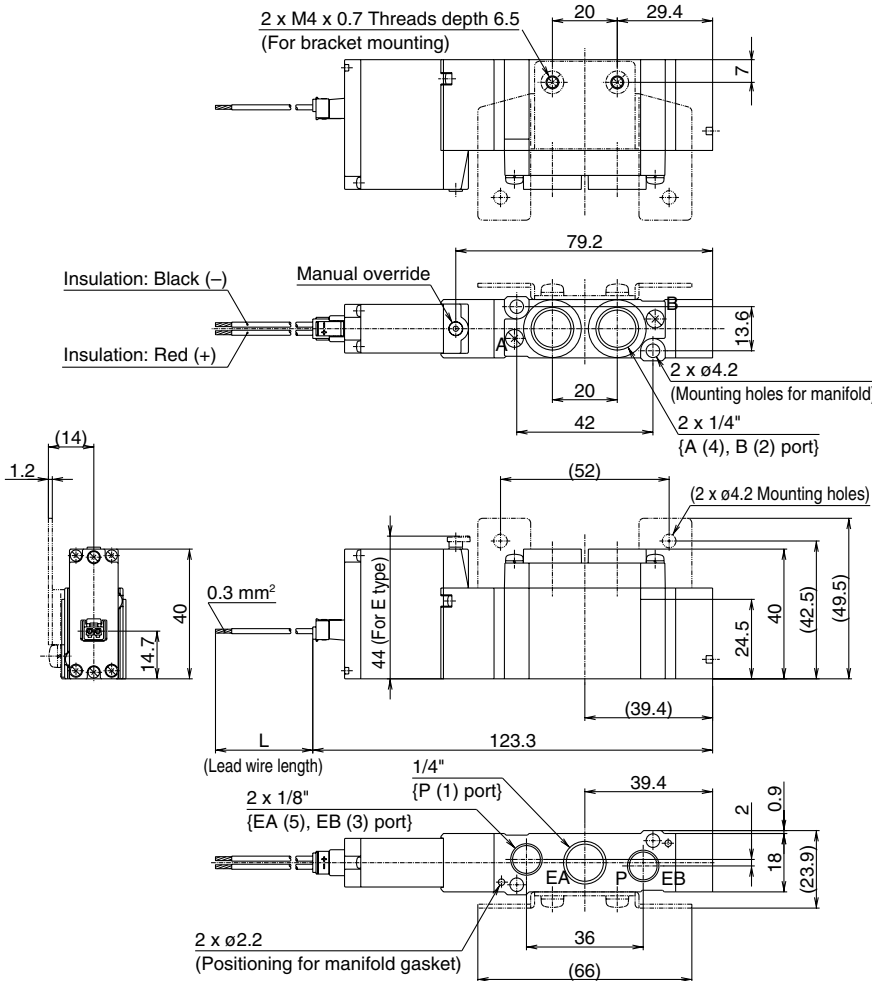
52-SY5420-TT□□-01□ (-F2)-X140



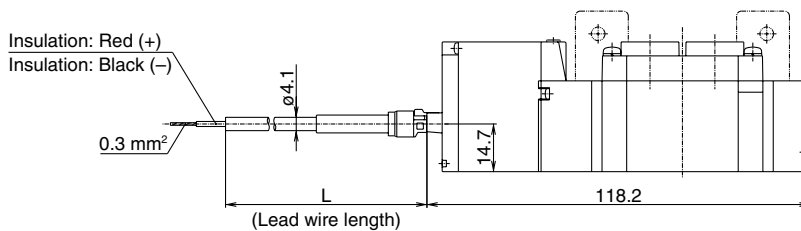
Dimensions

**2-position single
L plug connector (L)
52-SY7120-L□□-02□ (-F2)-X140**

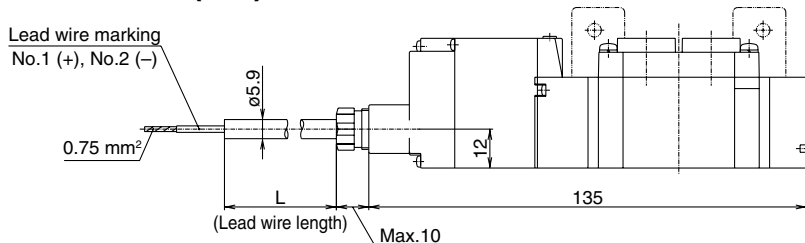
**In case with foot bracket
52-SY7120-L□□-02□-(F1)-X140**



**L plug connector with cover (LL)
52-SY7120-LL□□-02□ (-F2)-X140**

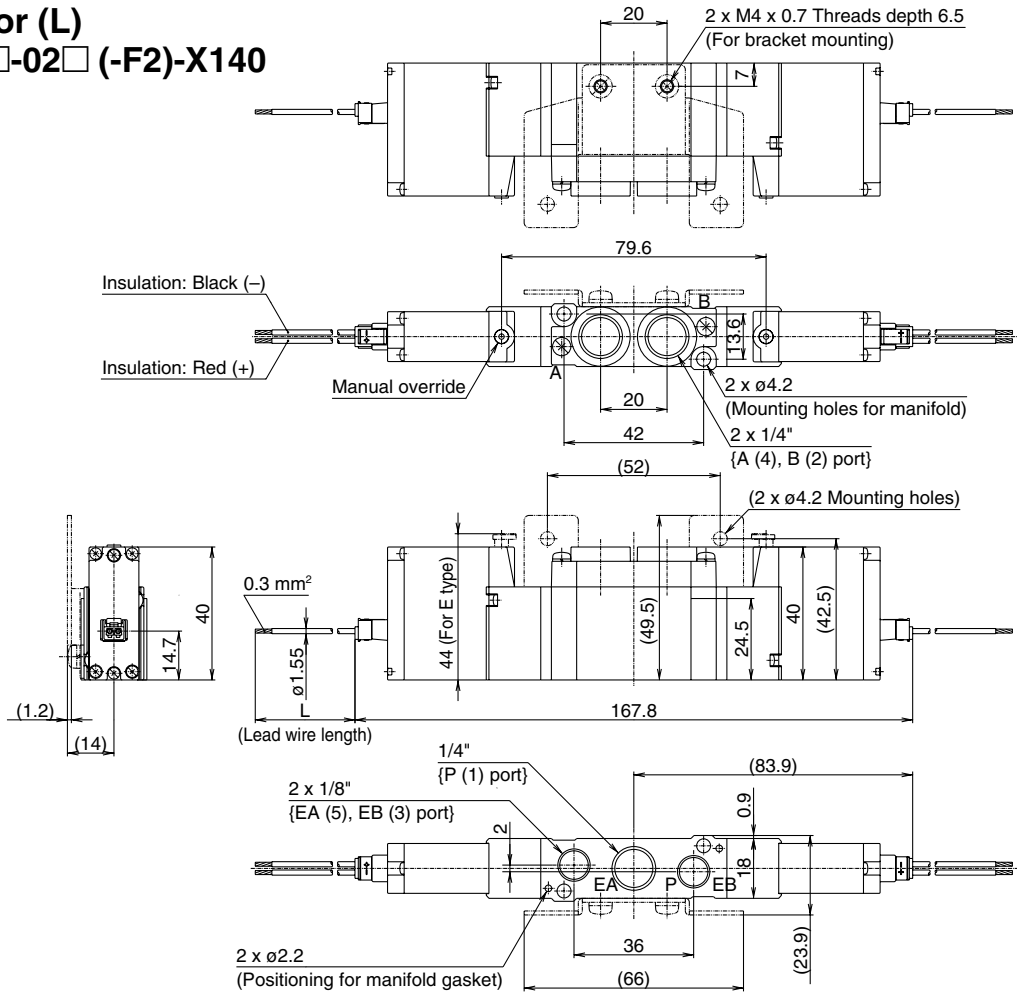


**Cable type (TT)
52-SY7120-TT□□-02□ (-F2)-X140**

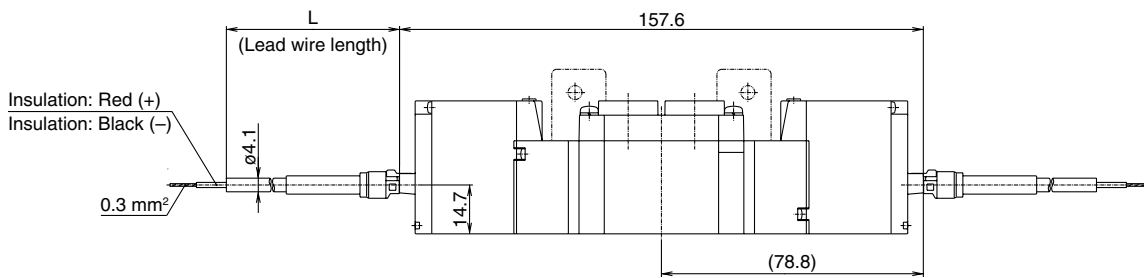


Dimensions

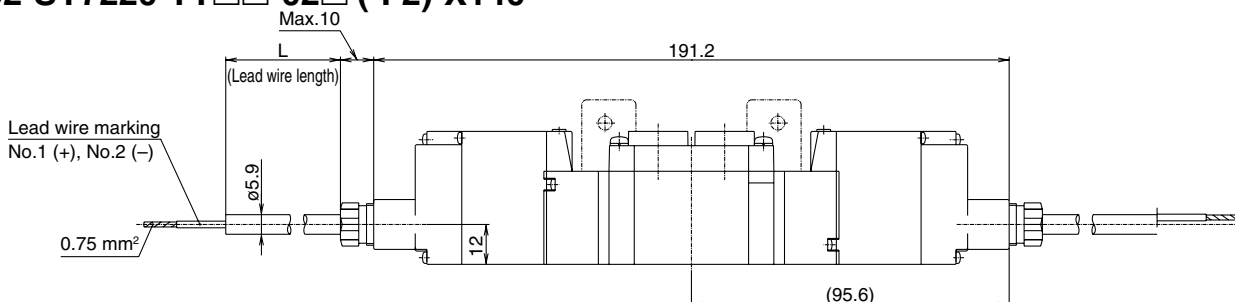
**2-position double
L plug connector (L)
52-SY7220-L□□-02□ (-F2)-X140**



**L plug connector with cover (LL)
52-SY7220-LL□□-02□ (-F2)-X140**



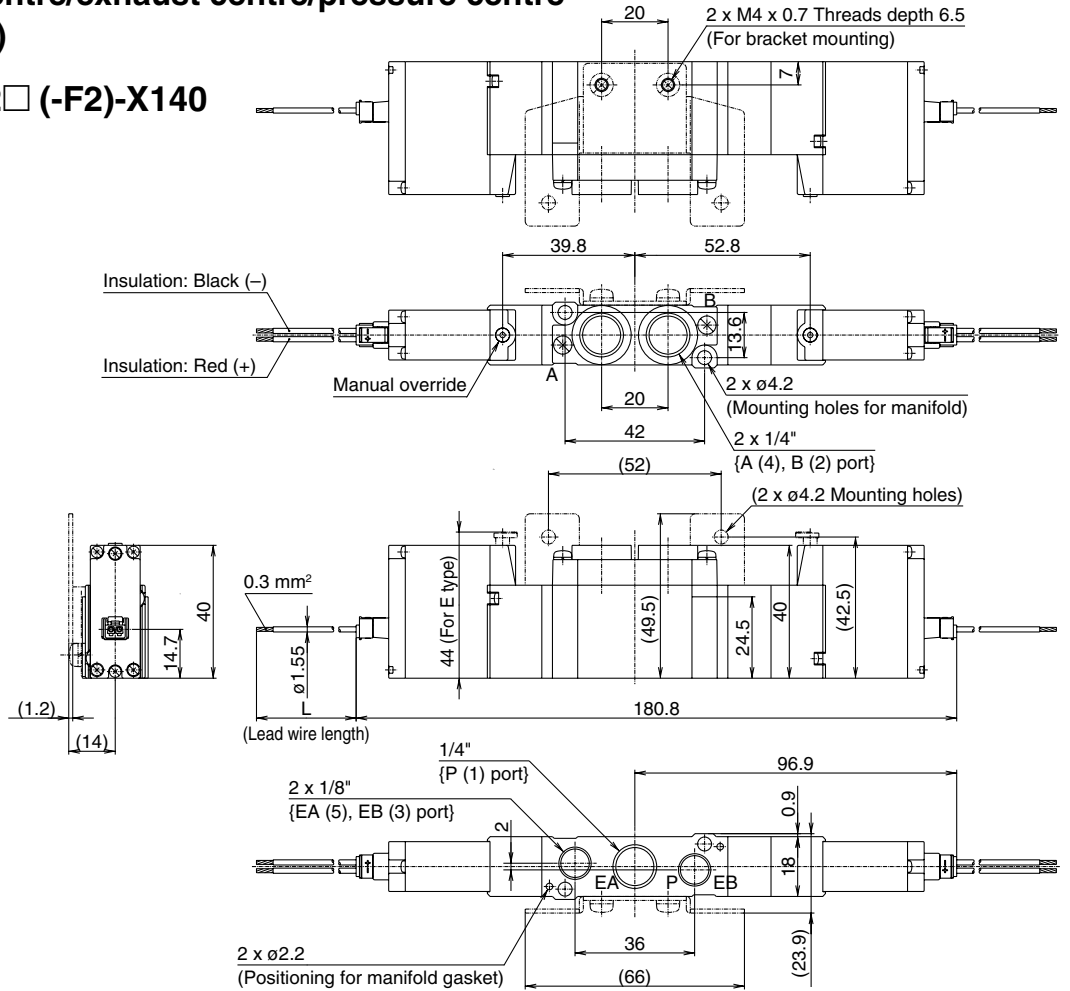
**Cable type (TT)
52-SY7220-TT□□-02□ (-F2)-X140**



Dimensions

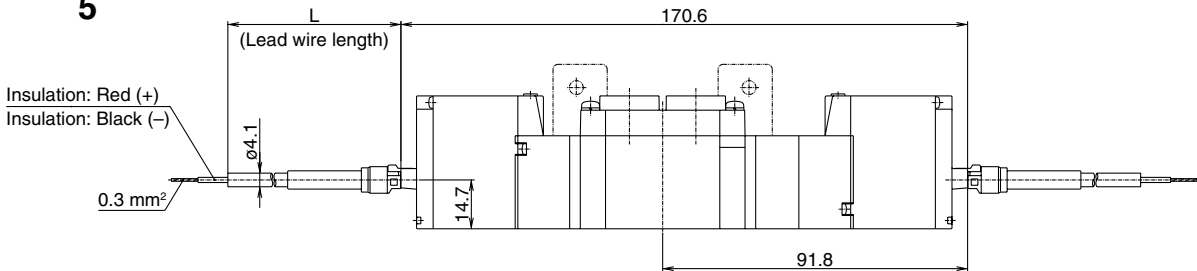
**3-position closed centre/exhaust centre/pressure centre
L plug connector (L)**

³
52-SY7420-L□□-02□ (-F2)-X140
₅



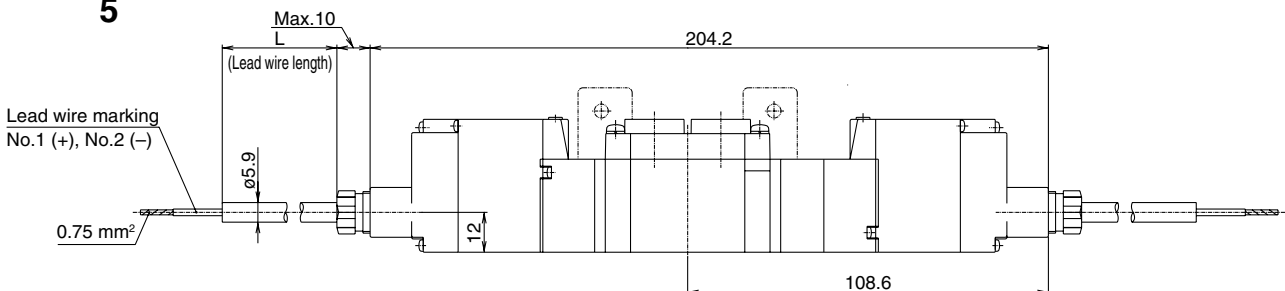
L plug connector with cover (LL)

³
52-SY7420-LL□□-02□ (-F2)-X140
₅



Cable type (TT)

³
52-SY7420-TT□□-02□ (-F2)-X140
₅

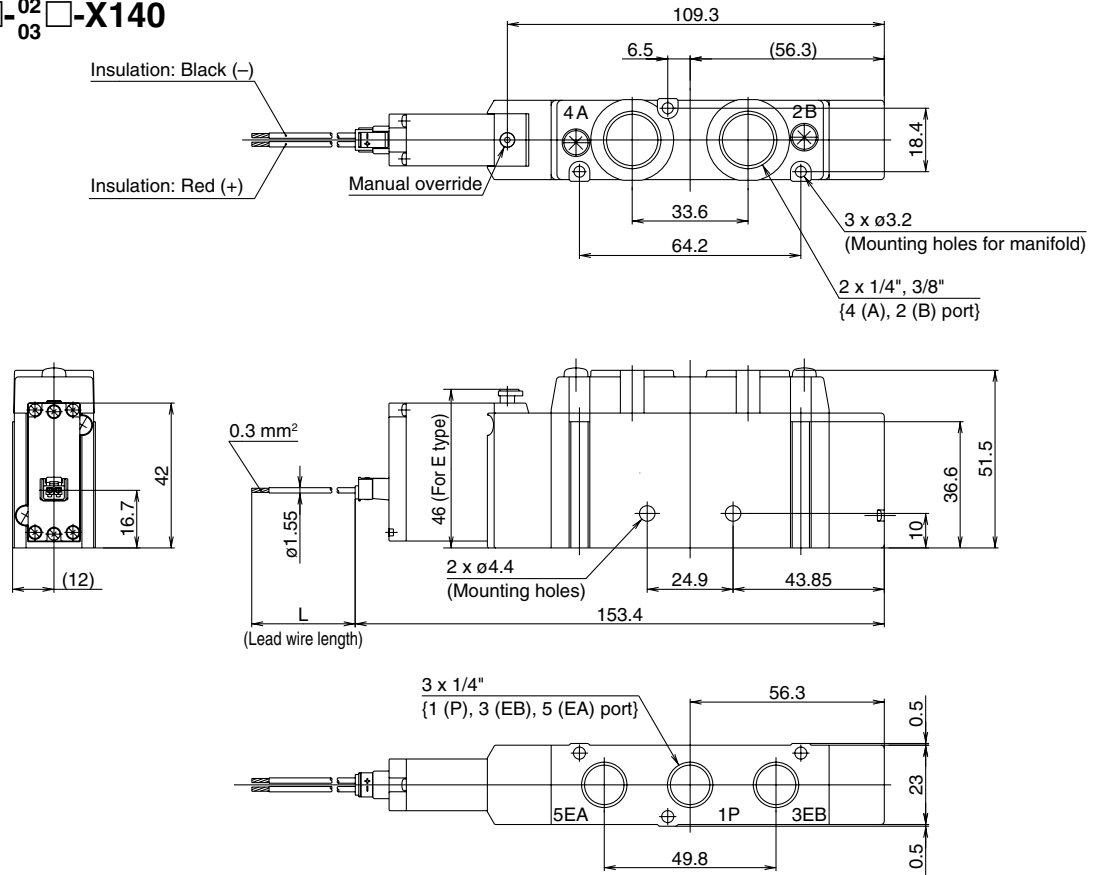


Dimensions

2-position single

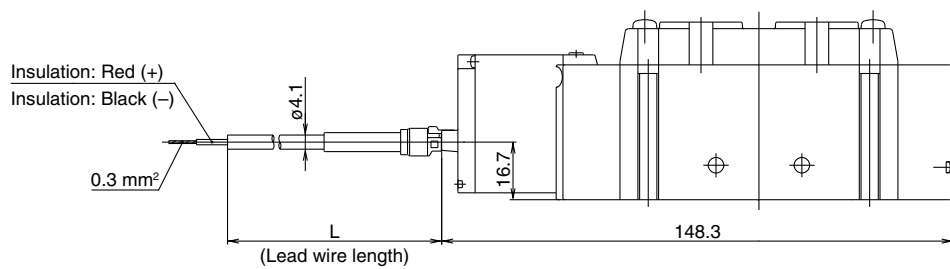
L plug connector (L)

52-SY9120-L□□-⁰²/₀₃□-X140



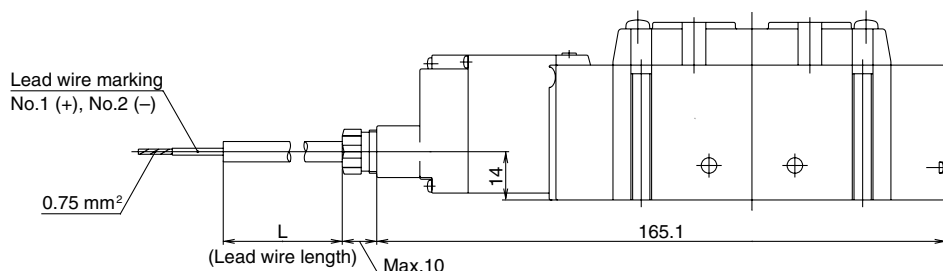
L plug connector with cover (LL)

52-SY9120-LL□□-⁰²/₀₃□-X140



Cable type (TT)

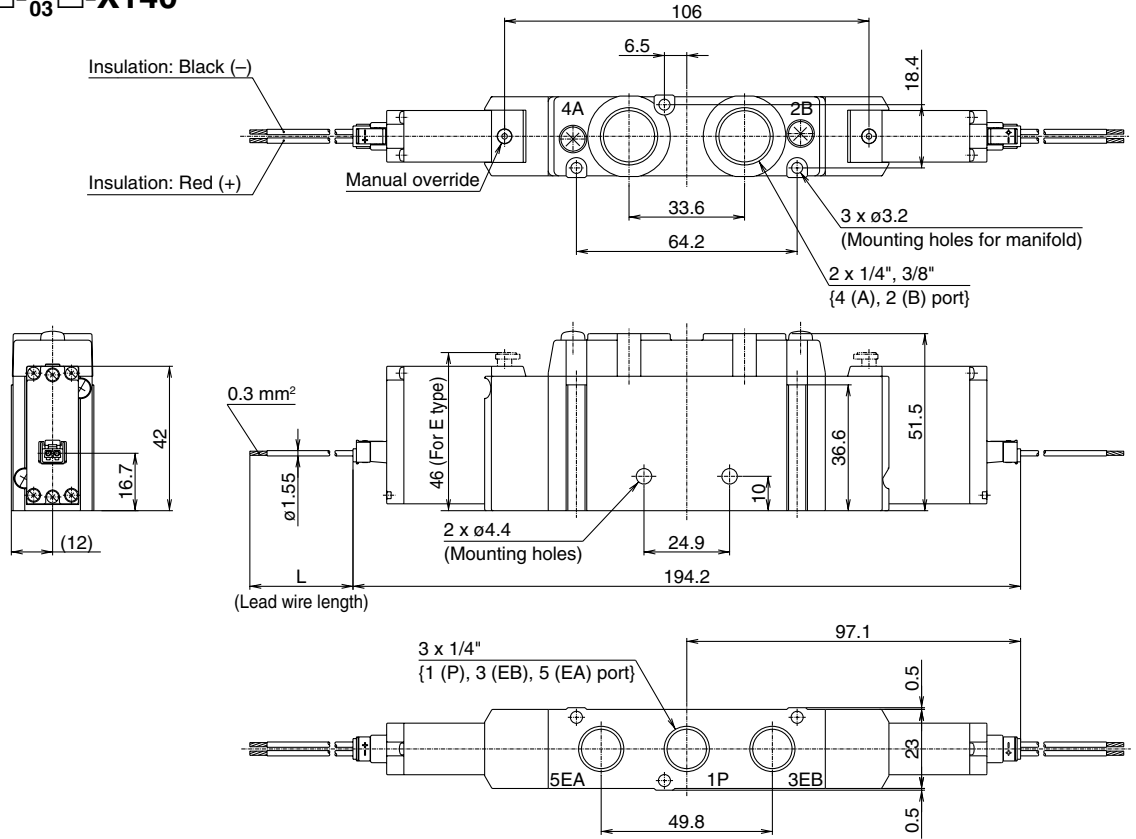
52-SY9120-TT□□-⁰²/₀₃□-X140



Dimensions

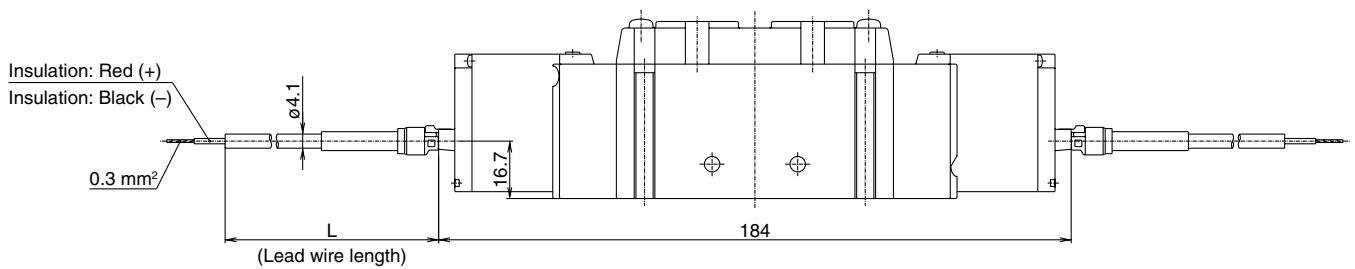
**2-position double
L plug connector (L)**

52-SY9220-L□□-02□□-X140



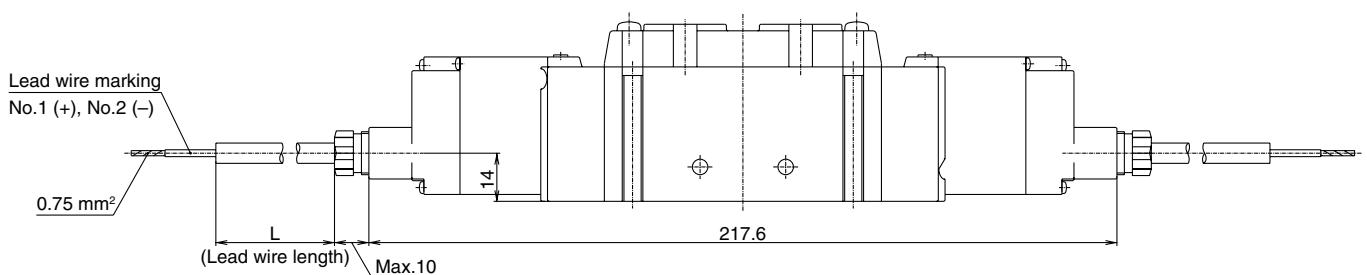
L plug connector with cover (LL)

52-SY9220-LL□□-02□□-X140



Cable type (TT)

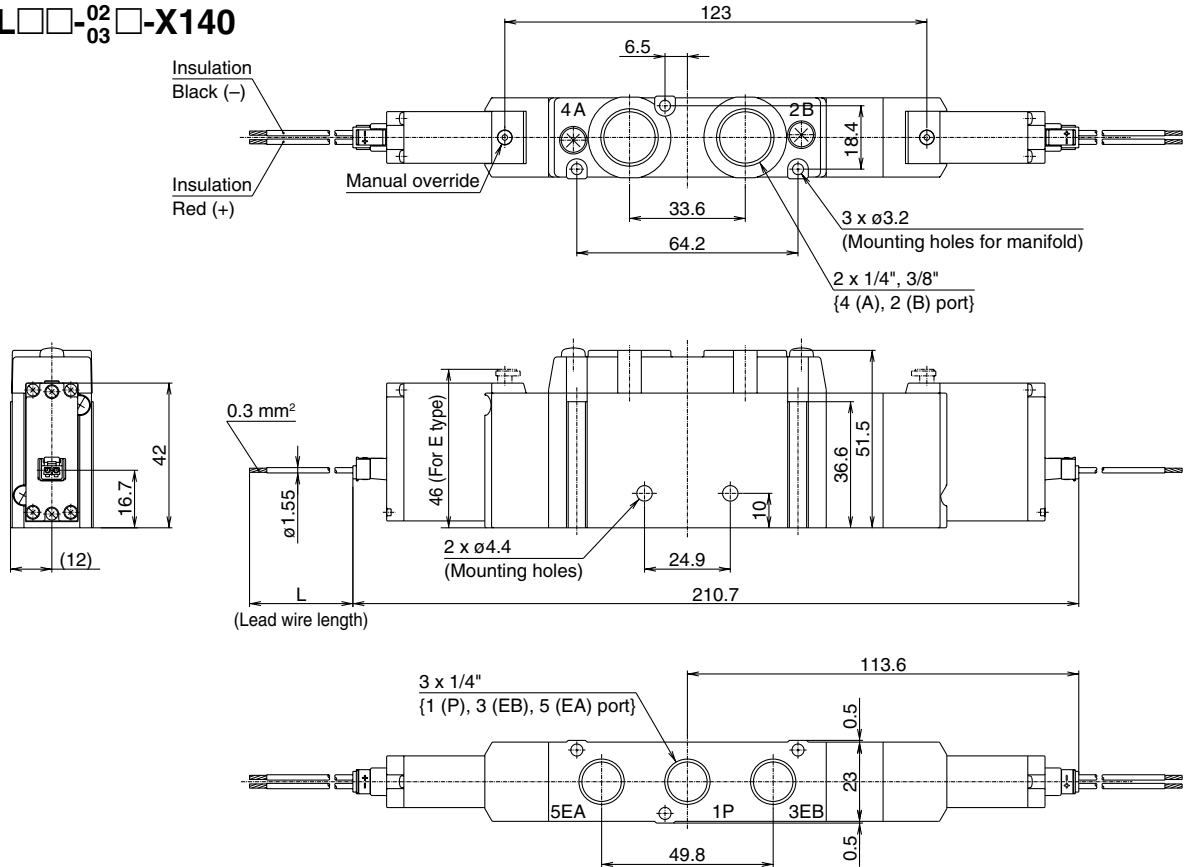
52-SY9220-TT□□-02□□-X140



Dimensions

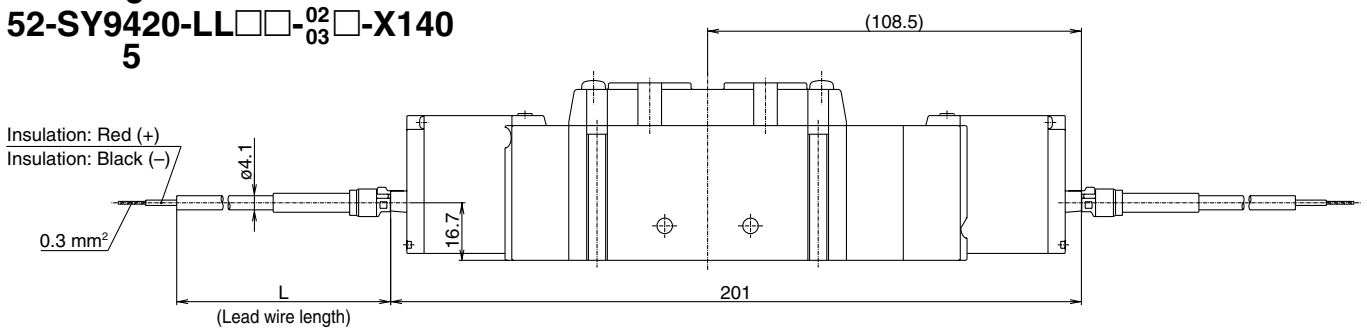
**3-position closed centre/exhaust centre/pressure centre
L plug connector (L)**

³
52-SY9420-L □ □ □ -⁰²/₀₃ □ □ -X140
₅



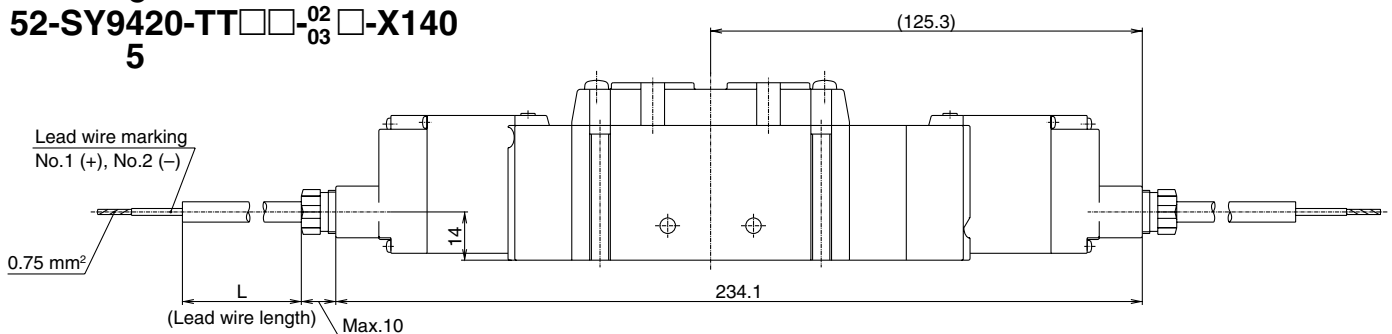
L plug connector with cover (LL)

³
52-SY9420-LL □ □ □ -⁰²/₀₃ □ □ -X140
₅



Cable type (TT)

³
52-SY9420-TT □ □ □ -⁰²/₀₃ □ □ -X140
₅

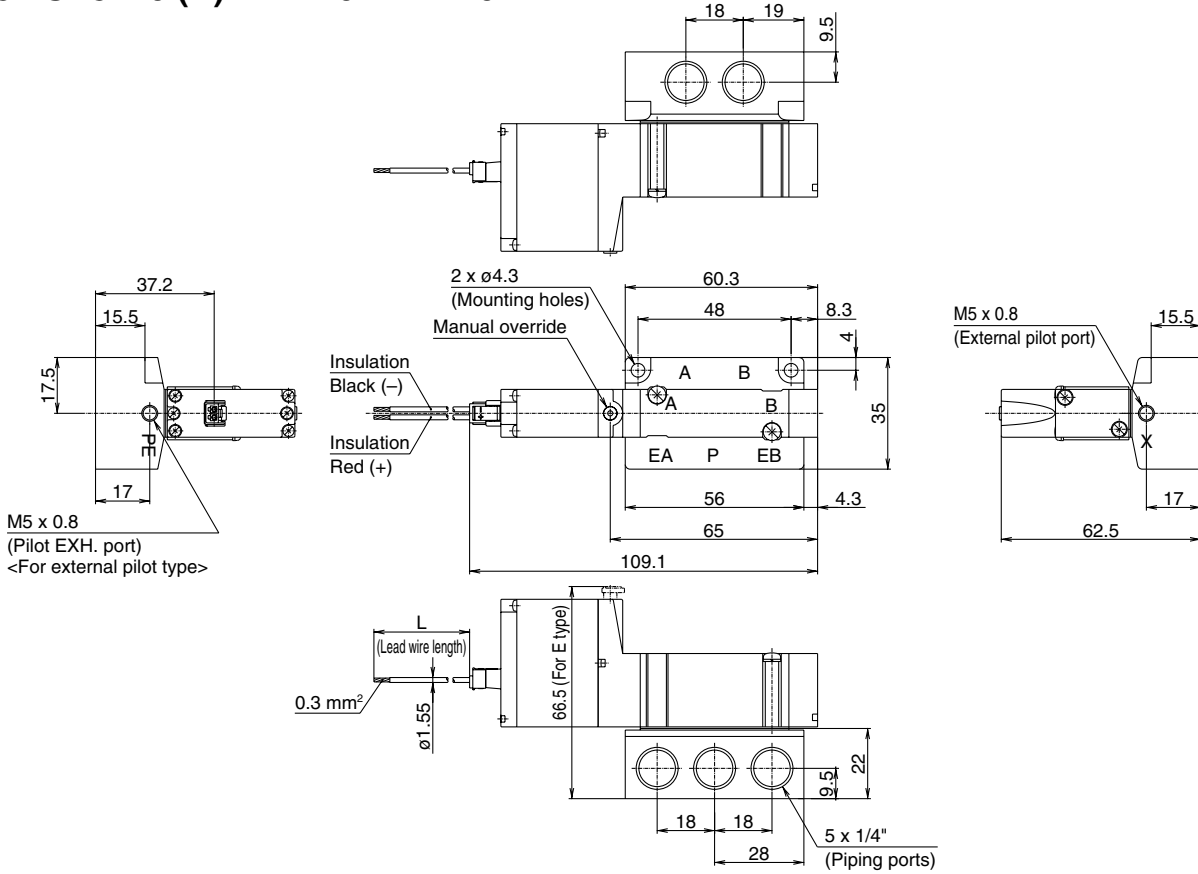


Dimensions

2-position single

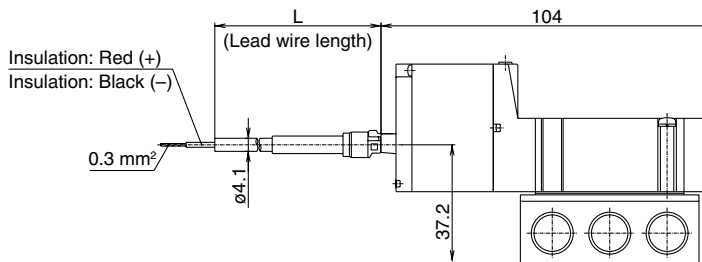
L plug connector (L)

52-SY5140 (R) -L□□-02□-X140



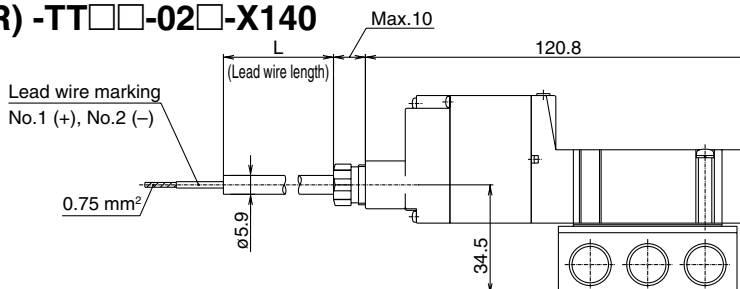
L plug connector with cover (LL)

52-SY5140 (R) -LL□□-02□-X140



Cable type (TT)

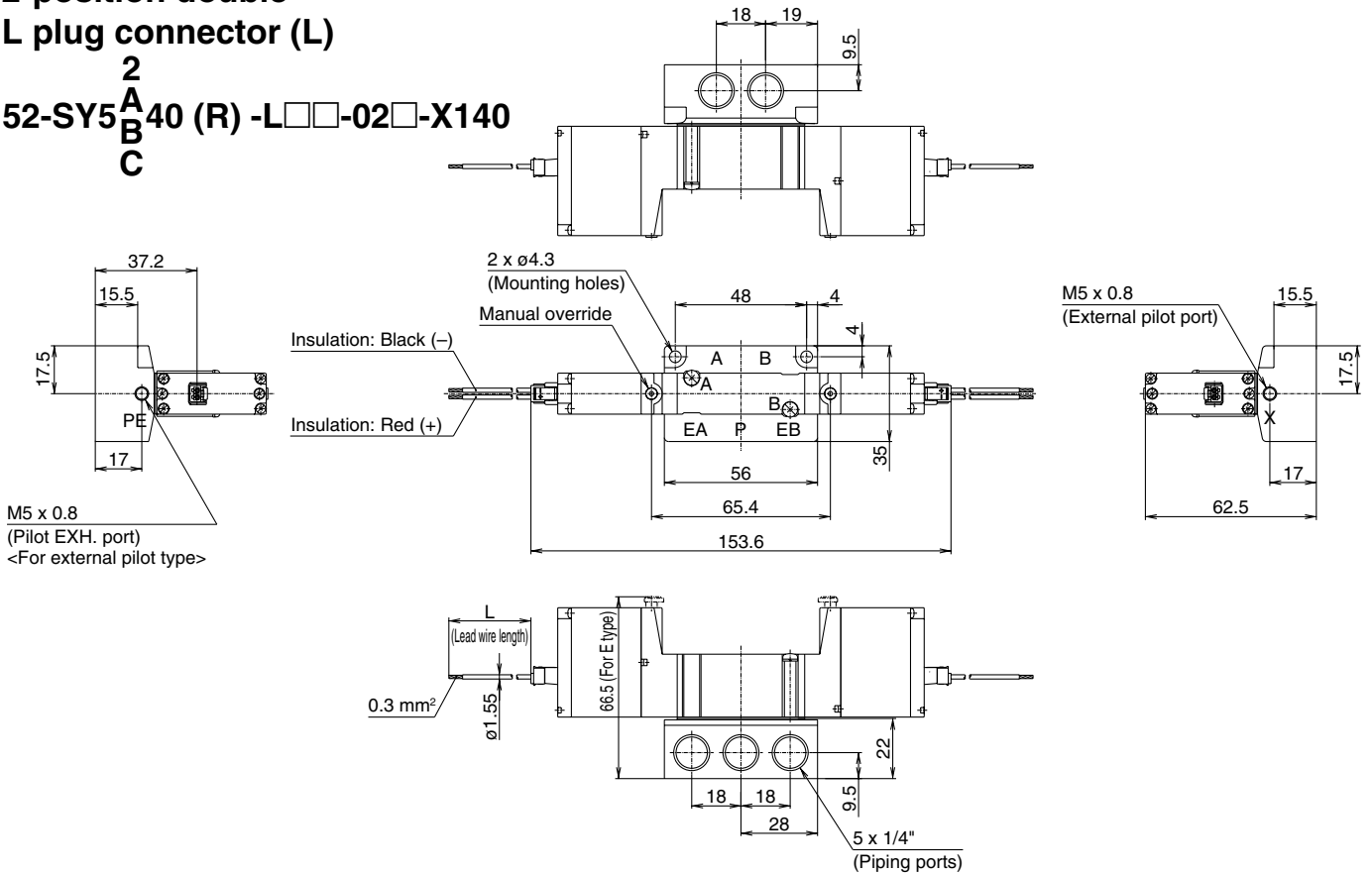
52-SY5140 (R) -TT□□-02□-X140



Dimensions

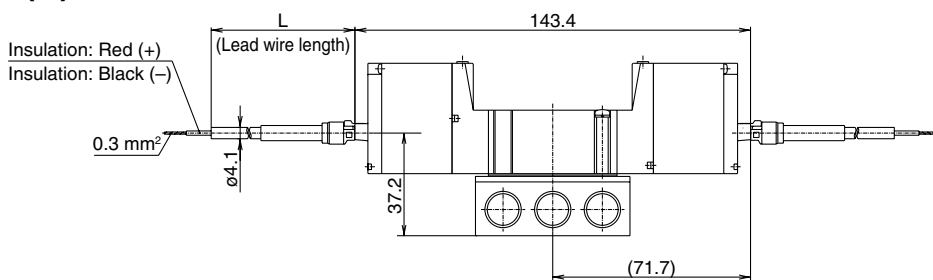
**2-position double
L plug connector (L)**

2
A
B
C
52-SY5A40 (R) -L□□-02□-X140



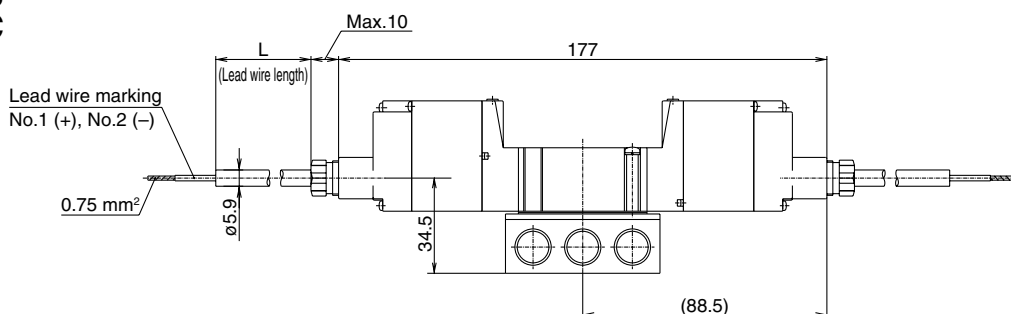
L plug connector with cover (LL)

2
A
B
C
52-SY5A40 (R) -LL□□-02□-X140



Cable type (TT)

2
A
B
C
52-SY5A40 (R) -TT□□-02□-X140

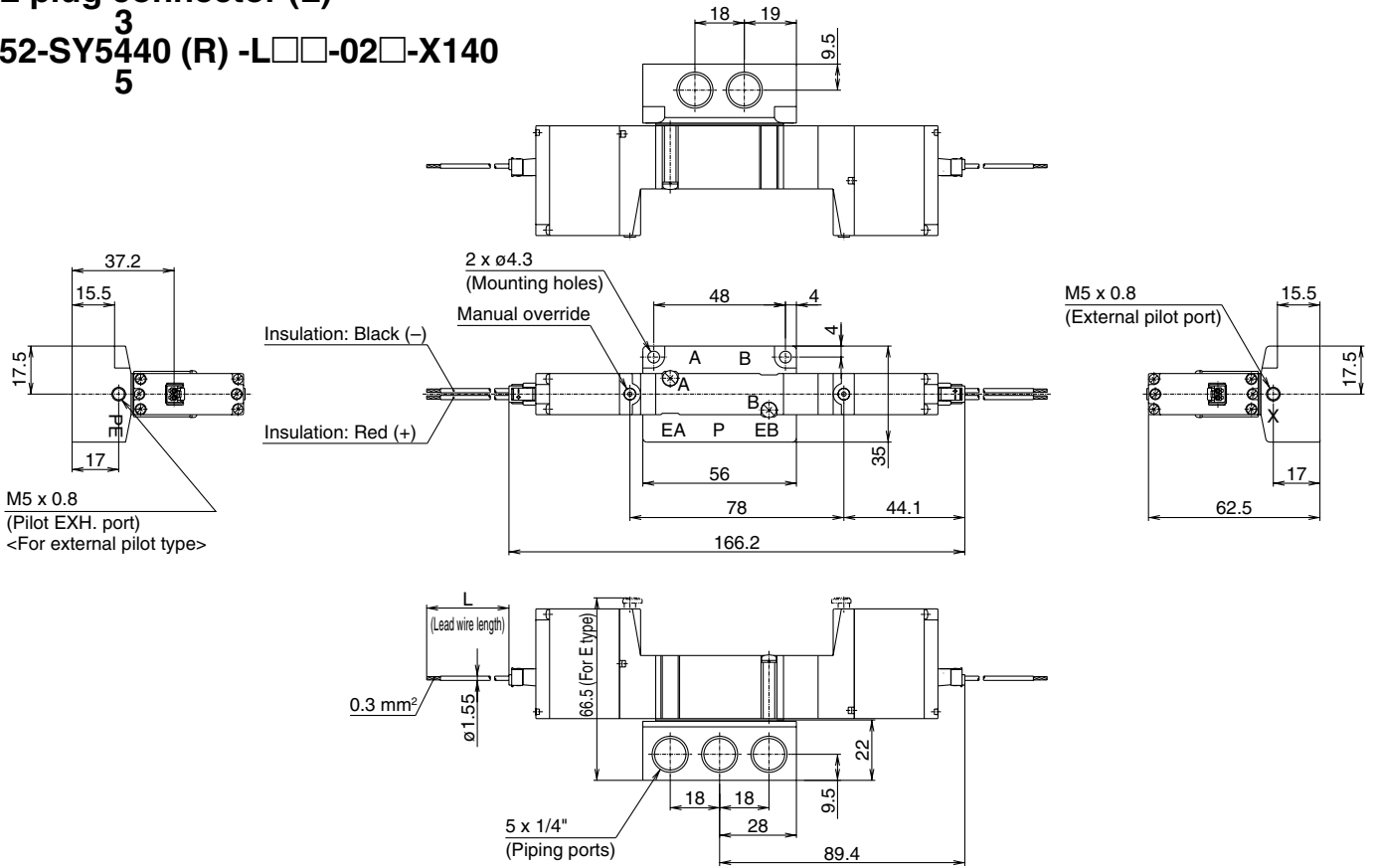


Dimensions

3-position closed centre/exhaust centre/pressure centre

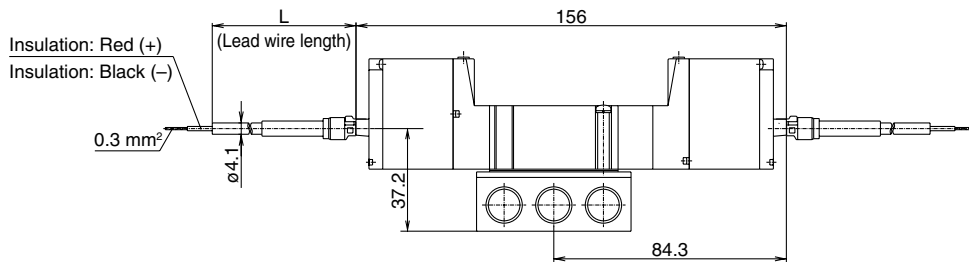
L plug connector (L)

³
52-SY5440 (R) -L□□-02□-X140
₅



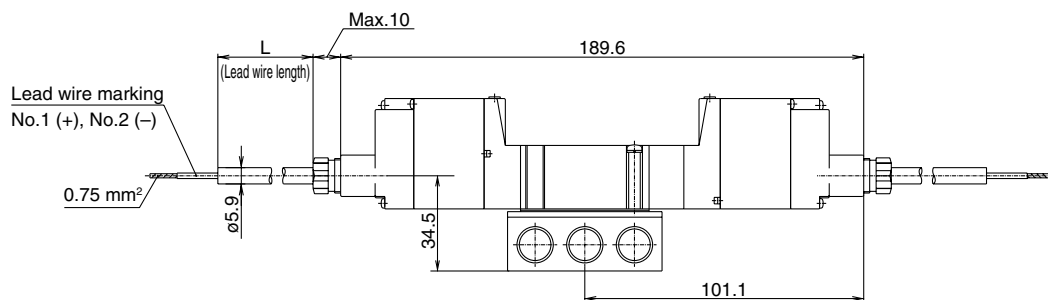
L plug connector with cover (LL)

³
52-SY5440 (R) -LL□□-02□-X140
₅



Cable type (TT)

³
52-SY5440 (R) -TT□□-02□-X140
₅

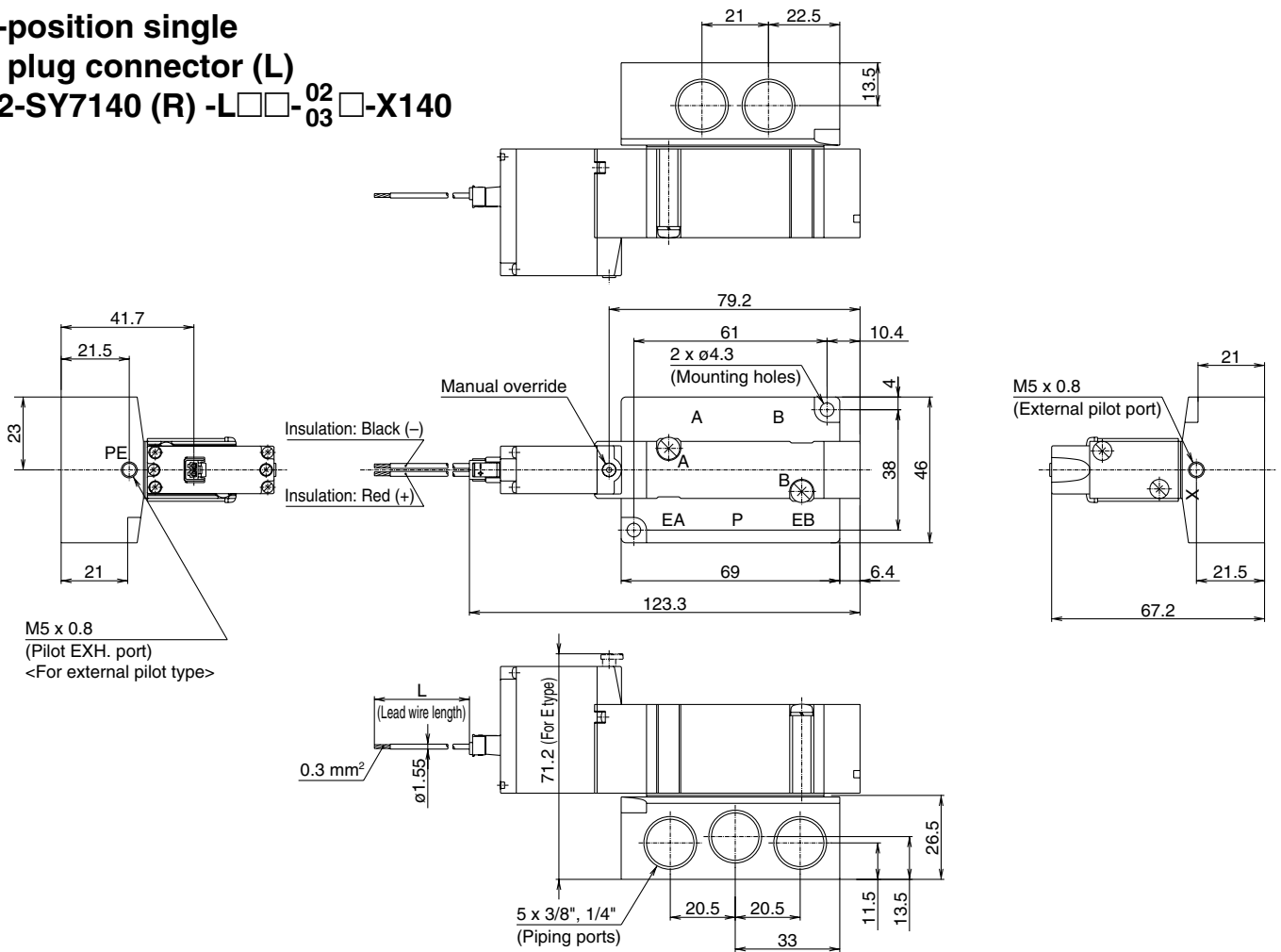


Dimensions

2-position single

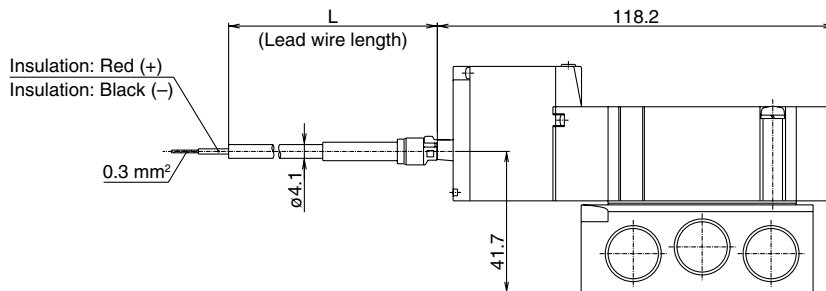
L plug connector (L)

52-SY7140 (R) -L□□-⁰²₀₃□-X140



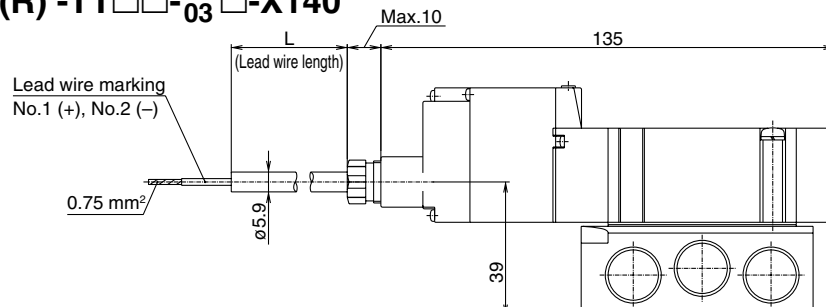
L plug connector with cover (LL)

52-SY7140 (R) -LL□□-⁰²₀₃□-X140



Cable type (TT)

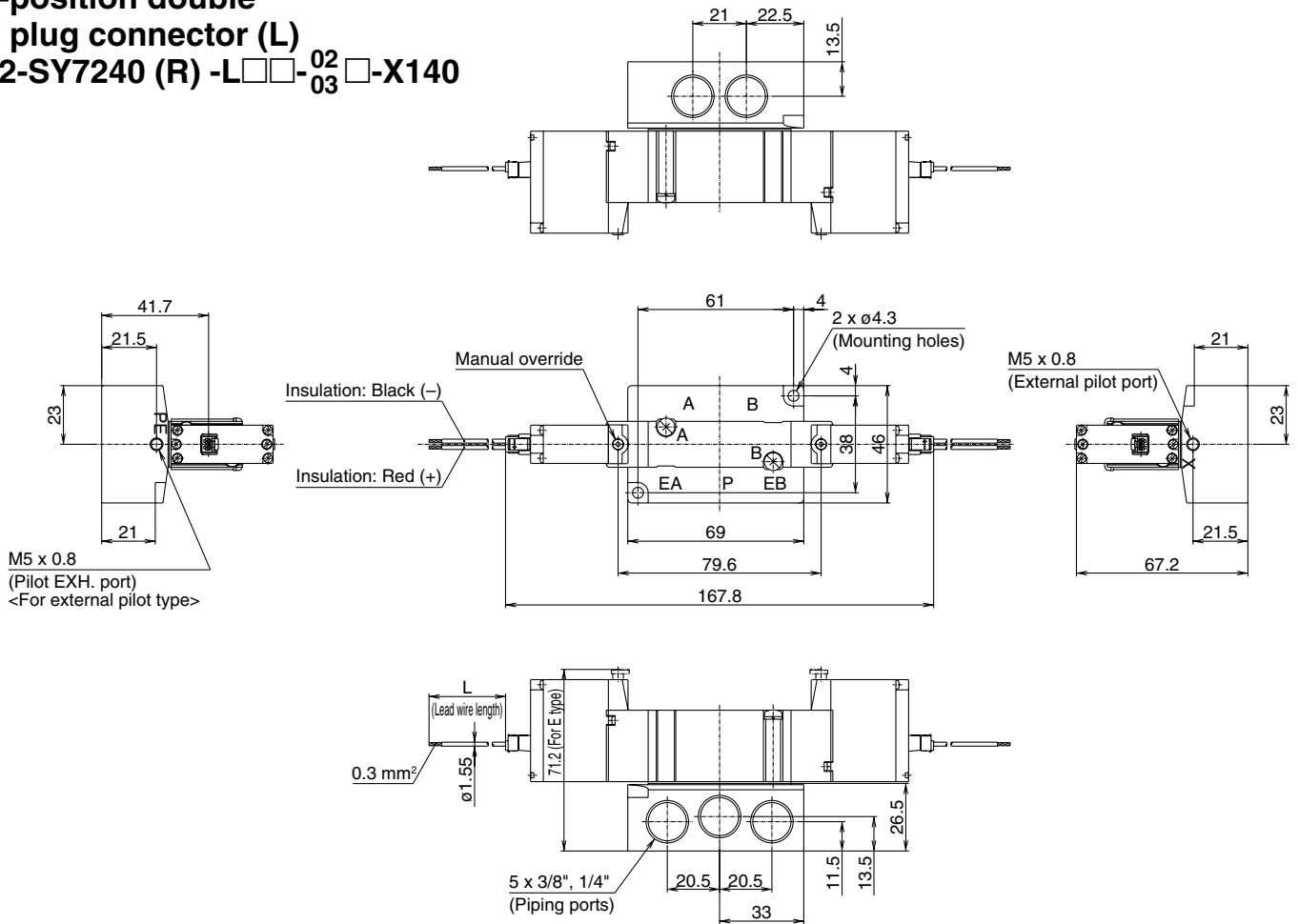
52-SY7140 (R) -TT□□-⁰²₀₃□-X140



Dimensions

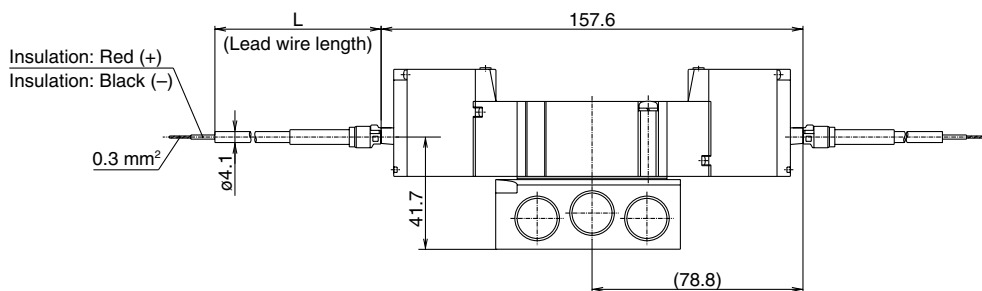
2-position double L plug connector (L)

52-SY7240 (R) -L□□□-⁰²/₀₃□□-X140



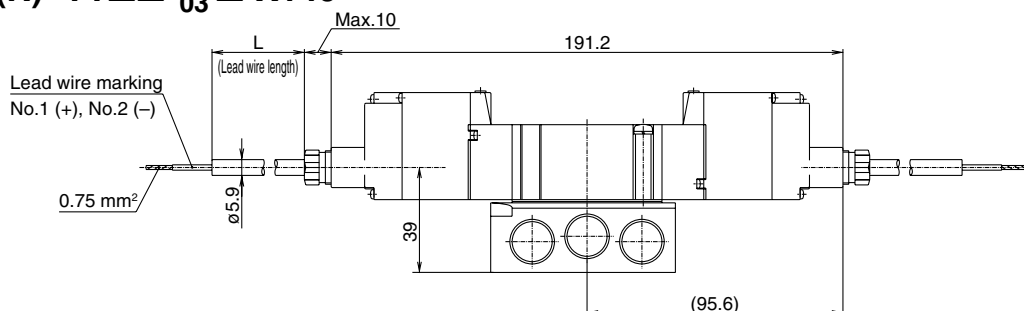
L plug connector with cover (LL)

52-SY7240 (R) -LL□□□-⁰²/₀₃□□-X140



Cable type (TT)

52-SY7240 (R) -TT□□□-⁰²/₀₃□□-X140

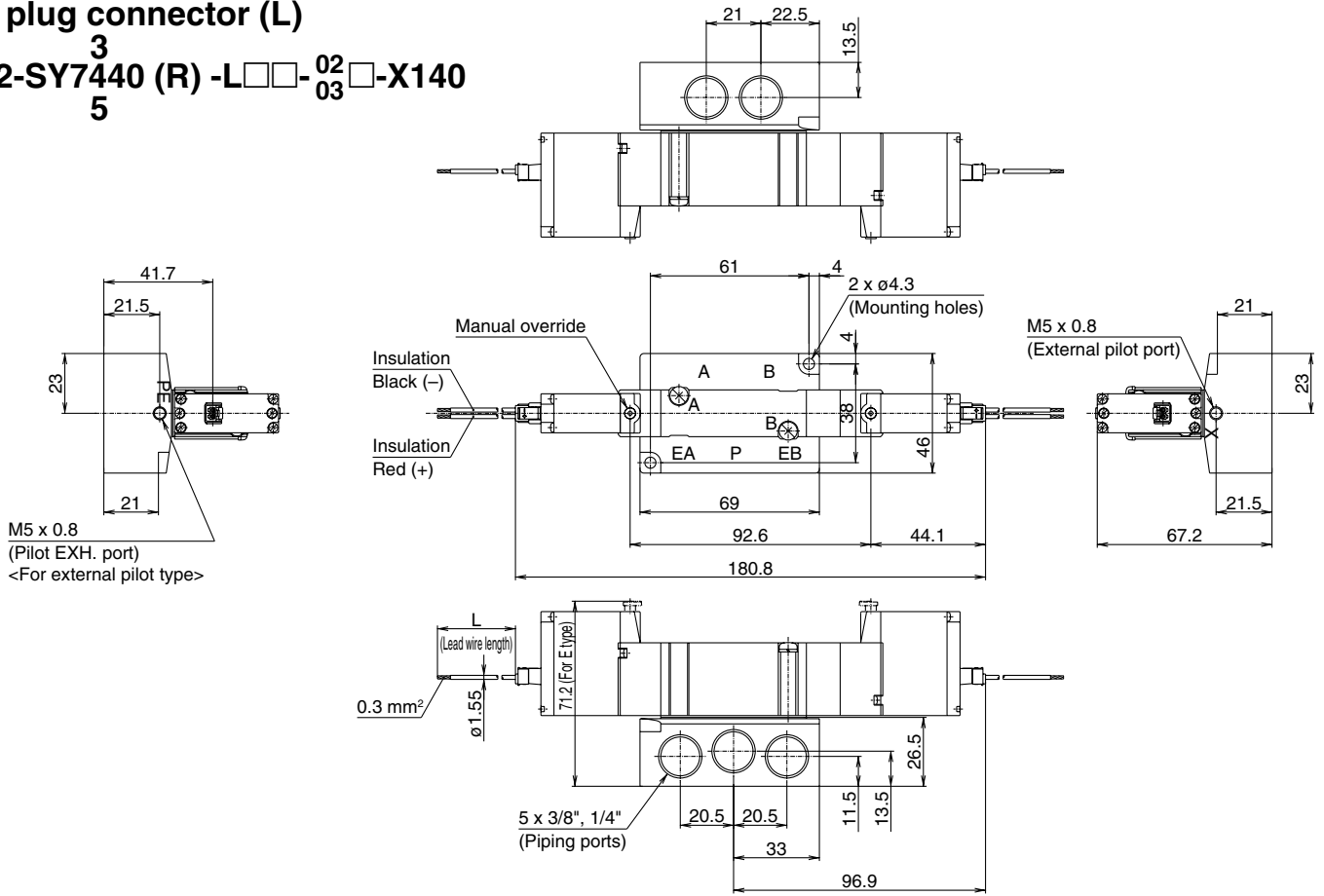


Dimensions

3-position closed centre/exhaust centre/pressure centre

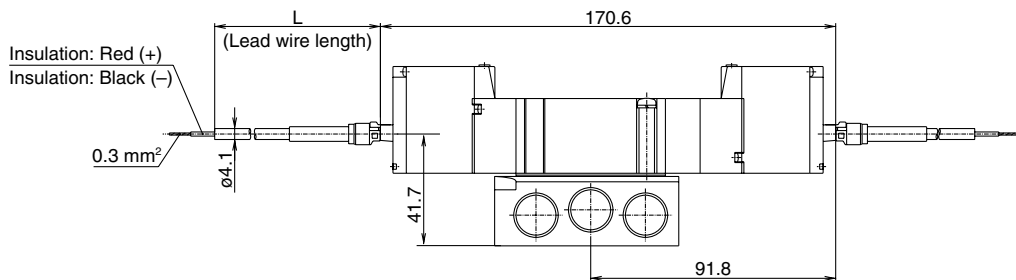
L plug connector (L)

52-SY³7440 (R) -L□□-⁰²/₀₃□-X140
5



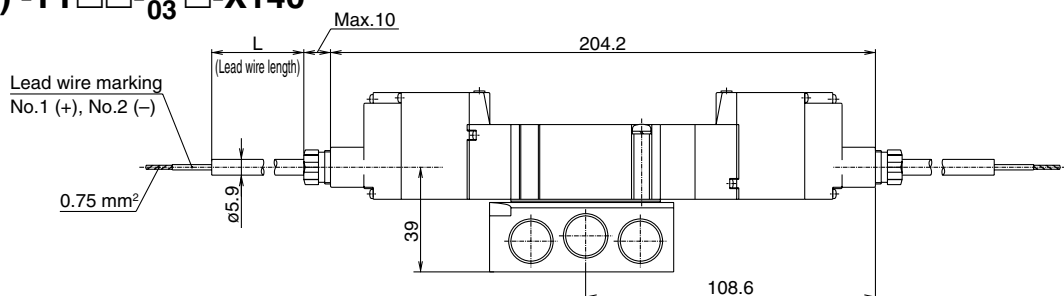
L plug connector with cover (LL)

52-SY³7440 (R) -LL□□-⁰²/₀₃□-X140
5



Cable type (TT)

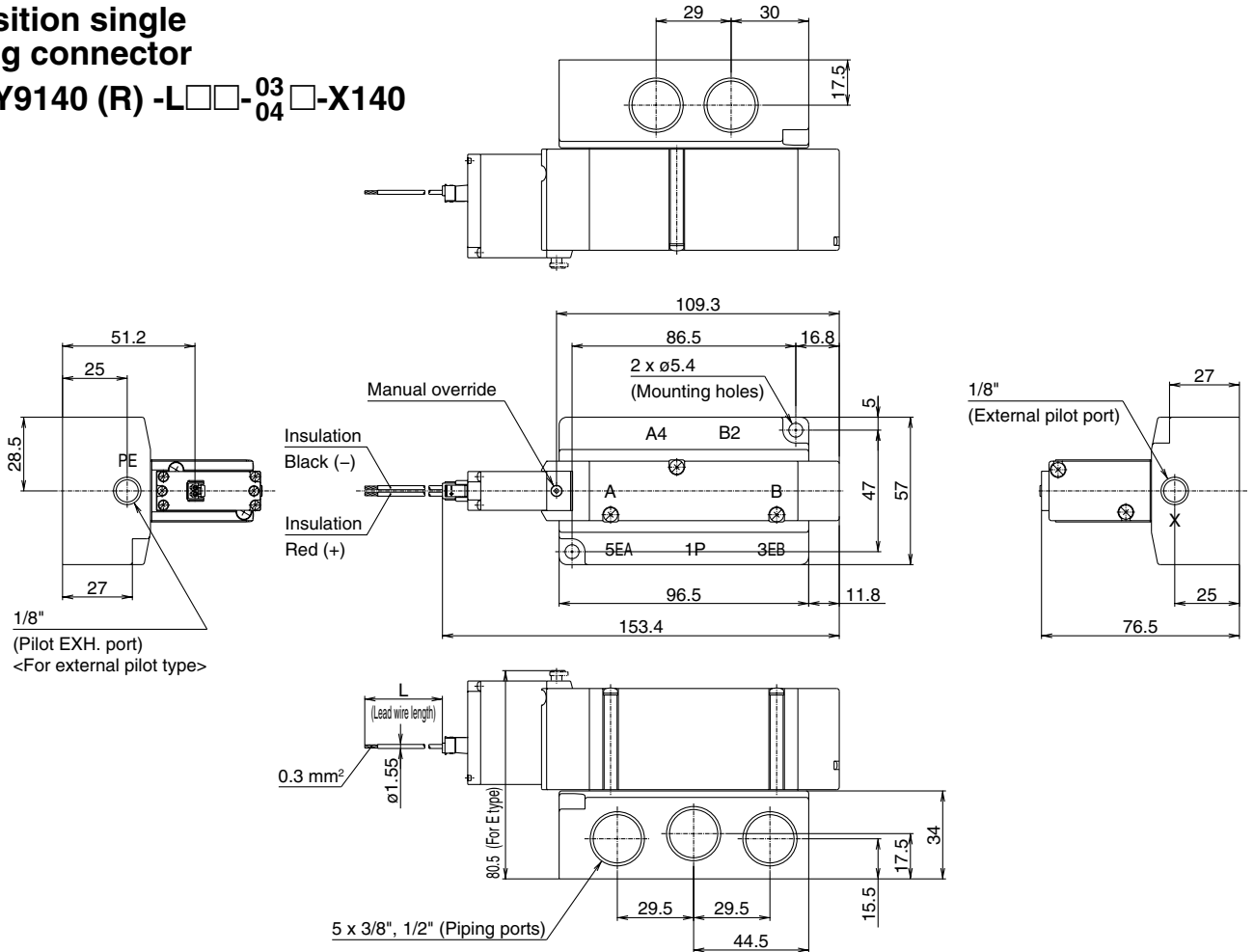
52-SY³7440 (R) -TT□□-⁰²/₀₃□-X140
5



Dimensions

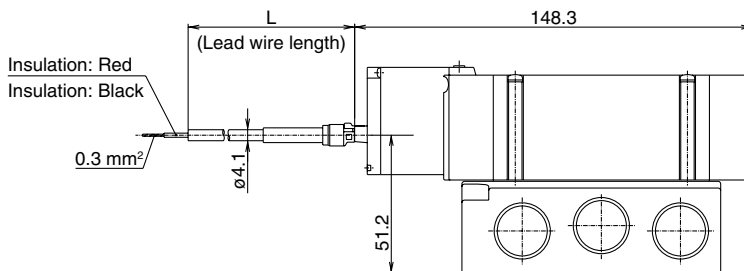
**2-position single
L plug connector**

52-SY9140 (R) -L□□-⁰³₀₄□-X140



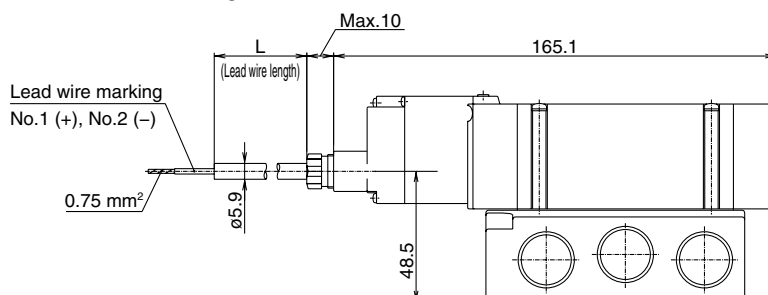
L plug connector with cover (LL)

52-SY9140 (R) -LL□□-⁰³₀₄□-X140



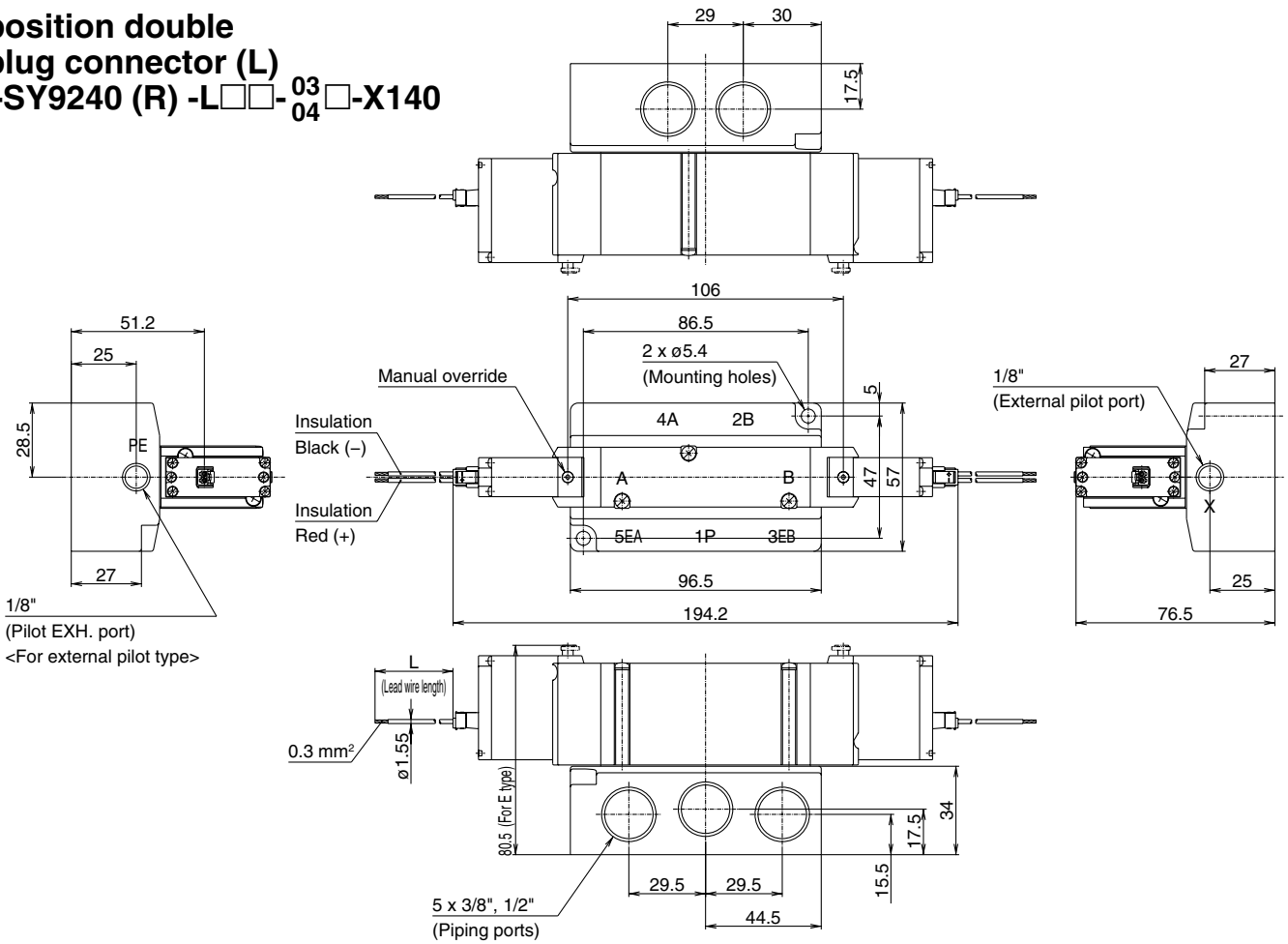
Cable type (TT)

52-SY9140 (R) -TT□□-⁰³₀₄□-X140

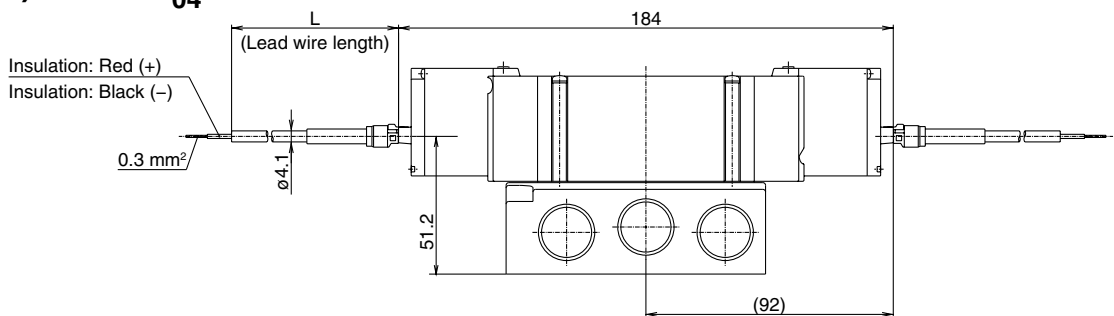


Dimensions

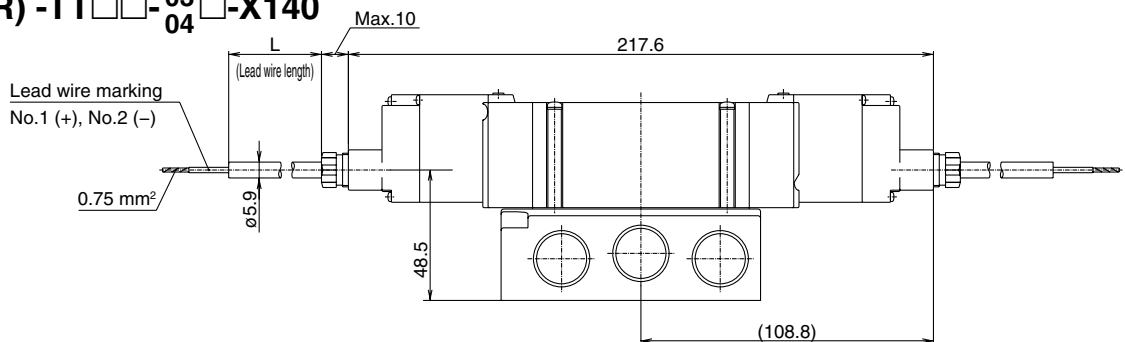
**2-position double
L plug connector (L)
52-SY9240 (R) -L□□-⁰³₀₄□-X140**



**L plug connector with cover (LL)
52-SY9240 (R) -LL□□-⁰³₀₄□-X140**



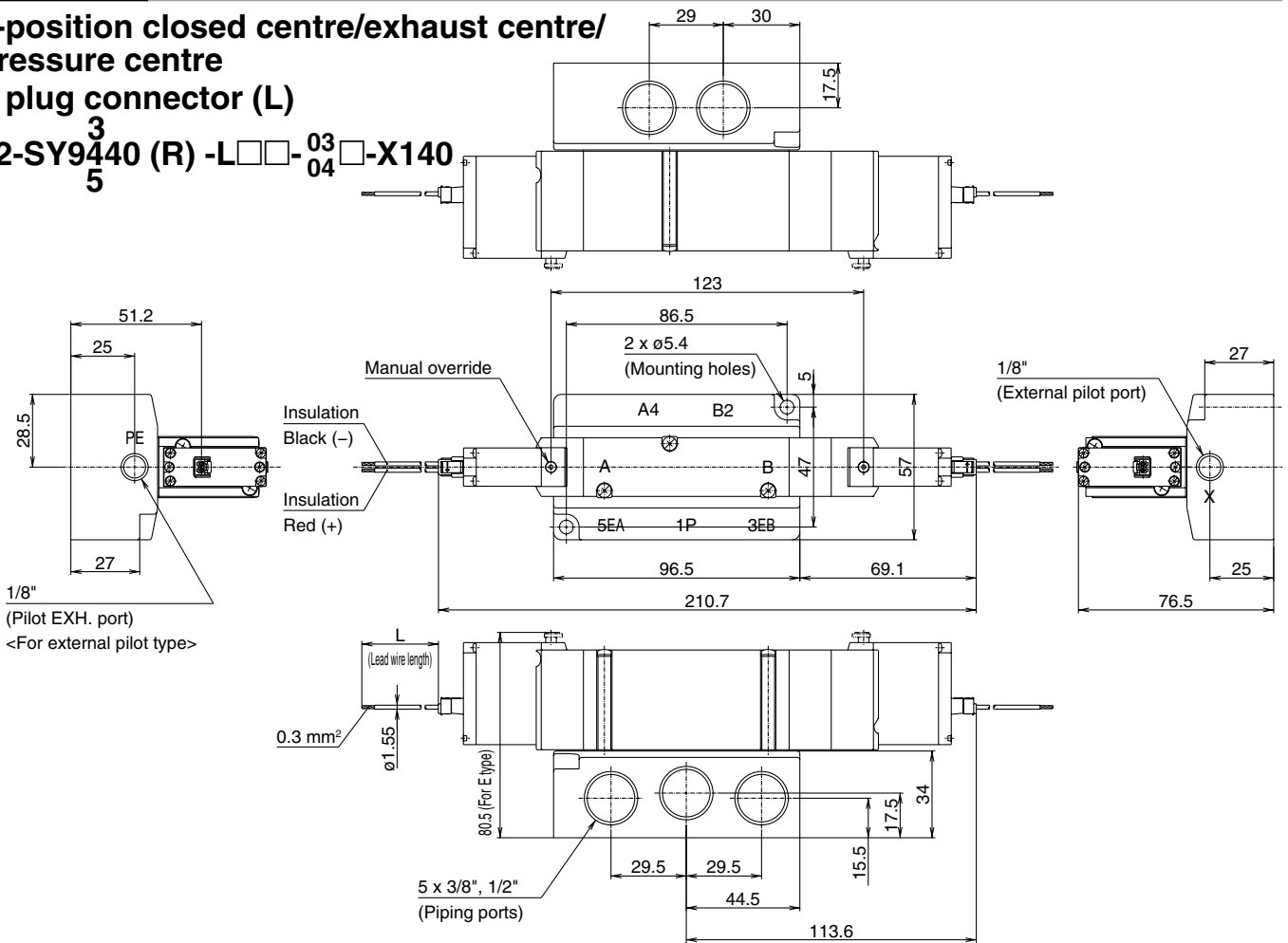
**Cable type (TT)
52-SY9240 (R) -TT□□-⁰³₀₄□-X140**



Dimensions

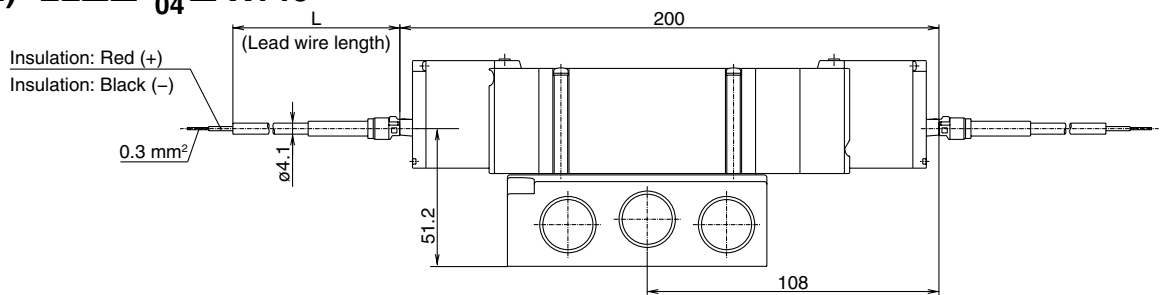
**3-position closed centre/exhaust centre/
pressure centre
L plug connector (L)**

52-SY9440 (R) -L□□-⁰³□-X140
³/₅



L plug connector with cover (LL)

52-SY9440 (R) -LL□□-⁰³□-X140
³/₅



Cable type (TT)

52-SY9440 (R) -TT□□-⁰³□-X140
³/₅

