

fischer **ultralight** connectors

AluLite™ series



fischer[®]
CONNECTORS

Edition 1.5

AluLite™ series *When weight matters*

Are weight considerations significant in the design and development of your equipment?

The aluminium engineered Fischer AluLite™ series is ultralight, compact and offers excellent strength to weight ratio.

Available in a range of colors, from bright to camouflage shades, the AluLite™ series smoothly fits in with your product design, while also offering an easy-to-use color-coding system.

Significantly around 50% lighter than typical metal connectors, the AluLite™ series is ideal for mobile equipment, portable systems, or hand-held devices.

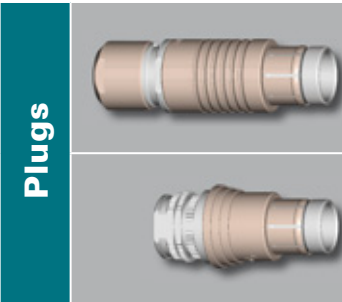


Product benefits

- Ultralight, compact and rugged construction
- Wide color range available
- Easy connect/disconnect operations
- Functional life greater than 10,000 mating cycles
- Push-pull locking mechanism or emergency release system
- 360° EMC shielding
- Sealed up to IP68 or hermetic
- Corrosion resistant
- Operating temperatures from -50°C to +150°C
- Non-magnetic
- High flexibility in contact configurations
- Available in crimp, PCB or solder contacts

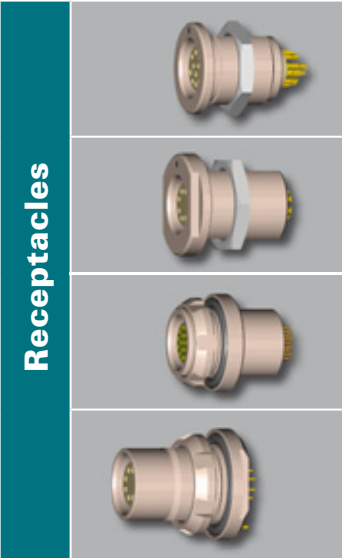


Connector Styles



Body style	Protection		Locking system		Contact types		Design specifics		Assembly specifics		
	Sealed up to IP68	360° EMC shielded	Push-pull	Emergency release	Crimp	Solder	Colored housing	Shortened body	Cable mounted	Overmoldable	Heat shrinkable
S	•	•	•		•	•	•		•		
SC	•	•		•	•	•	•		•		
SS	•	•	•		•	•	•	•	•	•	•
SSC	•	•		•	•	•	•	•	•	•	•

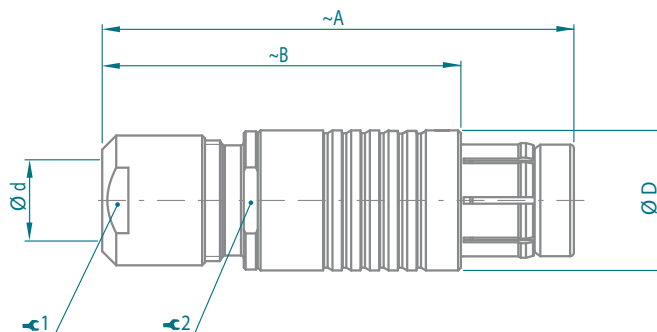
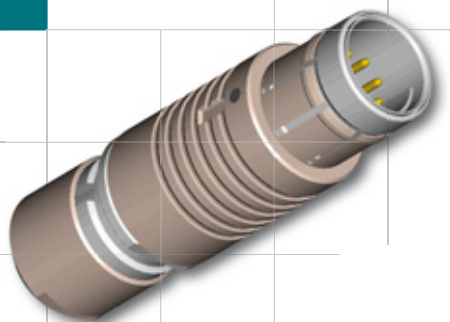
Other body styles available on request.



Body style	Protection			Contact types			Design specifics			Assembly specifics		
	Sealed up to IP68	Hermetic	360° EMC shielded	Crimp	Solder	PCB	Colored housing	Flush	Front projecting	Panel mounted	Front mounting	Rear mounting
D			•	•	•	•	•	•		•	•	
DEU	•		•		•	•	•	•		•	•	
DEE	•	•	•		•	•	•	•		•	•	
DBPU	•		•		•	•	•	•		•		•
DBPE	•	•	•		•	•	•	•		•		•
DBPLU	•		•		•	•	•		•	•		•
DBPLE	•	•	•		•	•	•		•	•		•

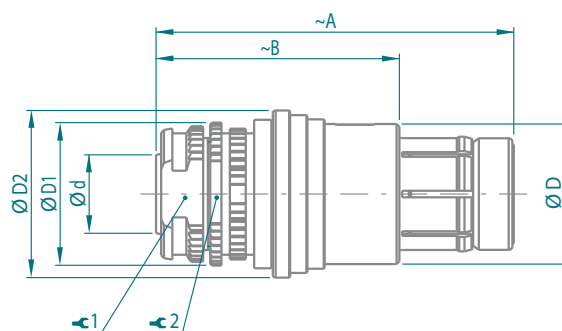
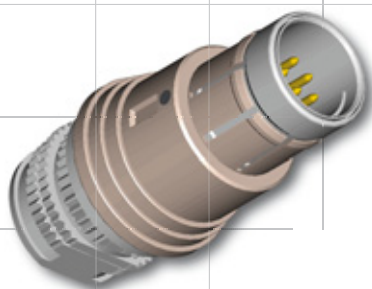
Other body styles available on request.

■ *S and SC body styles*



Series	Weight ¹ (~g)	A	B	D	d max		1	2
					Unsealed	Sealed		
102	3	36	26	9	4.7	4.3	7	7
103	8	46	35	12	6.7	6.2	10	10
1031	8	48	38	13	7.2	6.7	12	11
104	11	50	38	15	8.7	8.7	12	13
105	19	62	47	18	10.7	10.7	15	16

■ *SS and SSC body styles*



Series	Weight ¹ (~g)	A	B	D	D1	D2	d max ²	1	2
102	3	30	20	9.0	9.5	12.0	3.8	7	8
103	7	33	22	12.0	12.5	15.0	6.0	10	11
1031	8	33	23	12.4	13.0	15.5	6.2	10	11
104	8	38	26	15.0	15.3	18.0	8.0	12	13
105	16	44	29	18.0	18.4	21.2	10.0	15	16

¹ Weight shown is without cable clamp set, overmolding or heat shrinking.

² d = diameter below shield (≠ cable outer diameter).

All dimensions shown are in millimeters and are for reference only.

Plugs

Ordering Information

■ Part numbers

The configurator below is designed for multipole contact blocks only. For coax or triax blocks, please contact us. Standard configurations in green; others produced on request.

A. Housing			B. Body style		C. Size	D. Contact blocks				E. Options
AA	AB	AC	BA	BB	CA	DA	DB	DC	DD	EA
AL										
AA. Housing material AL = Aluminium						EA. Clamp nut For standard body length plugs (S) ³ : 11 = Standard clamp nut, no bend relief For shortened body length plugs (SS) ⁴ : 13 = For heat shrinking/boots 14 = For injection/overmolding				
AB. Housing color¹ AC. Housing treatment						DD. Keying code 11 = Code 1 <input type="radio"/> 12 = Code 2 <input type="radio"/> 13 = Code 3 <input type="radio"/> Other keying codes are available on request.				
BA. Connector style S = Straight plug, standard body length SS = Straight plug, shortened body length						DC. Contact type SR = Solder CP = Crimp				
BB. Locking system If standard automatic push-pull locking system desired, leave field blank. Other option possible: C = Clic Loc, emergency release						DB. Contact configuration Three-digit number ²				
CA. Connector size 102, 103, 1031, 104 or 105 = Series (See Dimensions section)						DA. Polarity A = Male contacts on plug Z = Female contacts on plug				

¹ Fischer Connectors can not be held liable for small color variations that may appear from one batch to another

² See list of contact configurations available at www.fischerconnectors.com/alulite_contact_configurations

³ Cable clamp sets are to be ordered separately. See www.fischerconnectors.com/alulite_termination

⁴ For more information on heat shrinking and overmolding, see www.fischerconnectors.com/alulite_termination



■ *D body style*

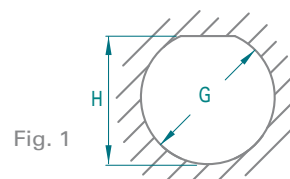
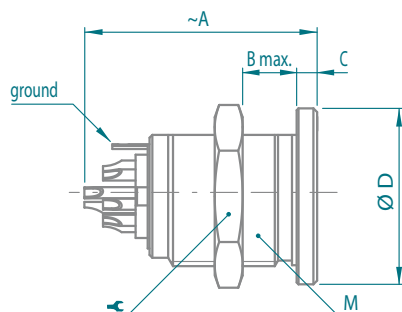
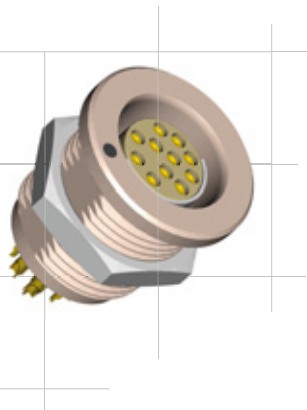


Fig. 1

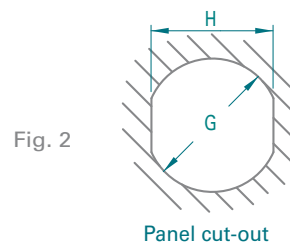


Fig. 2

Panel cut-out

Series	Weight ¹ (~g)	A	B max	C	D	M	⌀
102	3	19	9	1.5	11	9x0.5	11
103	5	23	8	1.5	14	12x1	14
1031	8	25	10	2.0	16	14x1	17
104	9	25	11	2.2	19	15x1	17
105	18	32	15	2.0	22	18x1	22

G	H	Fig.
9.1	8.5	1
12.1	11.2	1
14.1	12.1	2
15.1	14.2	1
18.1	17.3	1

■ *DEU and DEE body styles*

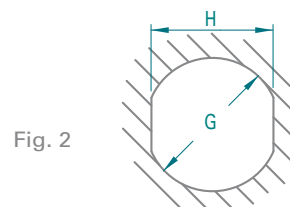
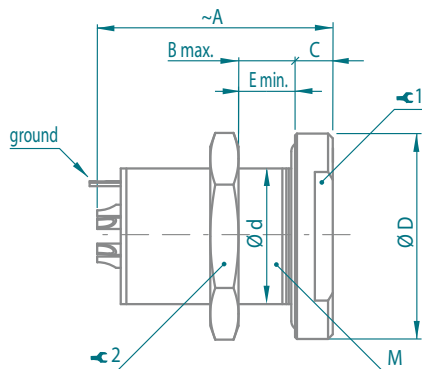
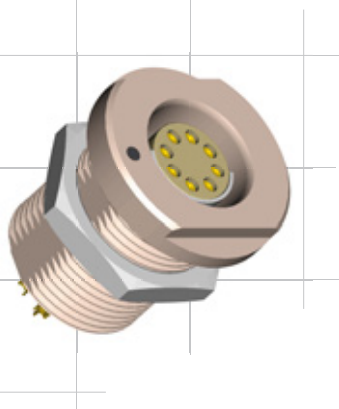


Fig. 2

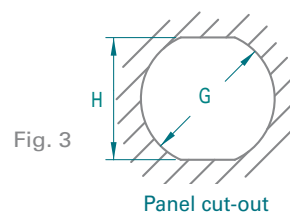


Fig. 3

Panel cut-out

Series	Weight ¹ (~g)	A	B max	E min x ø d	C	D	M	⌀ 1	⌀ 2
102	4	20	10	8 ²	2.5	14	9x0.5	11	11
103	9	23	12	0	3.0	18	14x1	14	17
1031	10	25	12	0	3.0	19	14x1	15	17
104	13	25	15	0	4.0	22	16x1	17	19
105	28	33	18	0	4.0	27	20x1	22	25

G	H	Fig.
10.1	9.2	3
14.1	12.5	3
14.1	13.0	2
16.1	14.5	3
20.1	18.5	3


¹ Weight includes nut.

² In the 102 Series only, the thread does not go all the way to the flange but stops 8 mm away.
For panels thinner than 8 mm, spacers are available. See Spacers section.
All dimensions shown are in millimeters and are for reference only.

Front Mounting Receptacles Ordering Information

■ Part numbers

The configurator below is designed for multipole contact blocks only. For coax or triax blocks, please contact us. Standard configurations in green; others produced on request.

A. Housing			B. Body style		C. Size	D. Contact blocks				E. Options		
AA	AB	AC	BA	BC	CA	DA	DB	DC	DD	ED	EE	EF
AL			D									
AA. Housing material AL = Aluminium												
AB. Housing color¹												
AC. Housing treatment 1231 = Black (chromium) ■ 1311 = Green (anodized) ■ 1411 = Blue (anodized) ■ 1611 = Red (anodized) ■ 1731 = Grey (chromium) ■ 1811 = Beige (anodized) ■ 1911 = Olive green (anodized) ■ 2111 = Purple (anodized) ■												
BA. Connector style D = Flush (vs. panel) Front Mounting Receptacle												
BC. Sealing level If no sealing level desired, leave field blank. Other options possible: EU = Sealed (IP68) even unmated EE = Hermetic												
CA. Connector size 102, 103, 1031, 104 or 105 = Series (See Dimensions section)												
						ED. O-ring at plug interface If 'No sealing level' chosen in section BC, leave field blank. Options possible if you selected 'Sealed (IP68) even unmated' or 'Hermetic': 11 = Viton 12 = EPDM (low temperature)						
						DD. Keying code 11 = Code 1 <input type="radio"/> 12 = Code 2 <input type="radio"/> 13 = Code 3 <input type="radio"/> Other keying codes are available on request.						
						DC. Contact type Options possible if, in field BC, you selected 'No sealing level': SR = Solder CP = Crimp PB = PCB Options possible if, in field BC, you selected 'Sealed (IP68) even unmated' or 'Hermetic': SR = Solder PB = PCB						
						DB. Contact configuration Three-digit number ²						
						DA. Polarity A = Female contacts on receptacle Z = Male contacts on receptacle						
						EF. Nut type 11 = Hexagonal  12 = None						
						EE. Grounding G = Yes Z = No						

¹ Fischer Connectors can not be held liable for small color variations that may appear from one batch to another

² See list of contact configurations available at www.fischerconnectors.com/alulite_contact_configurations

■ Spacers

For DEU and DEE body styles of the 102 Series

Panel width	Spacer part number
0.5 - 3.0	102.550
2.5 - 5.5	102.551
5.0 - 8.0	102.552

Material: aluminium



■ DBPU and DBPE body styles

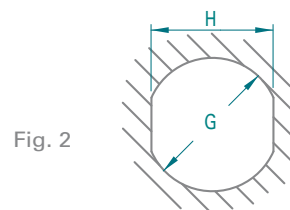
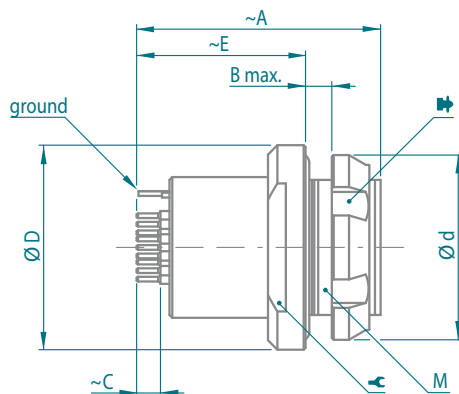


Fig. 2

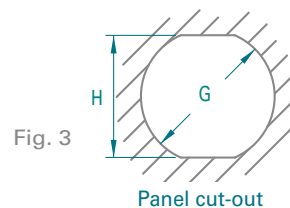


Fig. 3

Panel cut-out

Series	Weight ¹ (~g)	A ²	B max	D	d	E ²	C ²	M ³	⚙
102	3	20	3.5	14	12	13	2.54	9x0.5	11
103	8	26	3.0	18	18	18	2.54	14x1	15
1031	8	23	3.0	19	18	15	2.54	14x1	15
104	11	26	4.0	22	20	18	2.54	16x1	17
105	26	30	5.0	27	25	20	2.54	20x1	22

G	H	Fig.
9.1	8.0	3
14.1	12.5	3
14.1	12.1	2
16.1	14.5	3
20.1	18.5	3

■ DBPLU and DBPLE body styles

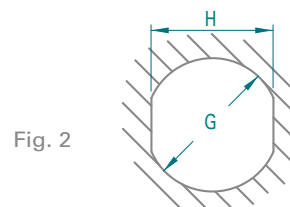
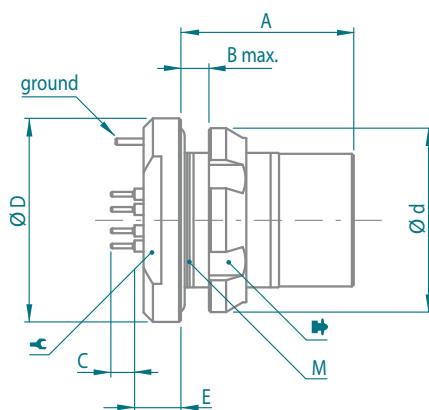


Fig. 2

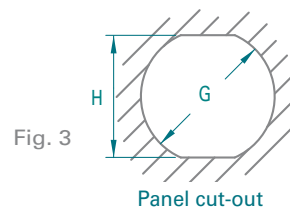


Fig. 3

Panel cut-out

Series	Weight ¹ (~g)	A	B max	C	d	D	E	M ³	⚙
102	3	14.2	4.5	2.54	13	14	3.6	10x0.5	11
103	8	16.5	5.0	2.54	18	18	4.2	14x1	15
1031	8	16.0	5.5	2.54	20	19	4.2	15x1	15
104	11	18.5	6.5	2.54	20	22	5.0	16x1	17
105	26	22.5	7.0	2.54	25	27	5.5	20x1	22

G	H	Fig.
10.1	9.2	3
14.1	12.5	3
15.1	13.5	2
16.1	14.5	3
20.1	18.5	3

¹ Weight includes nut.

² Pin length and diameter vary according to contact configuration. Contact us for more information.













³ For information on nutdrivers (⚙), see Assembly tool section.

All dimensions shown are in millimeters and are for reference only

Rear Mounting Receptacles Ordering Information

Part numbers

The configurator below is designed for multipole contact blocks only. For coax or triax blocks, please contact us. Standard configurations in green; others produced on request.

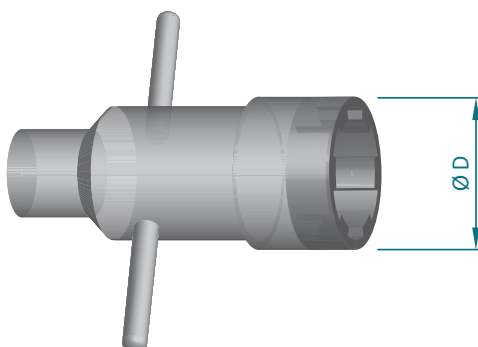
A. Housing			B. Body style		C. Size	D. Contact blocks				E. Options		
AA	AB	AC	BA	BC	CA	DA	DB	DC	DD	ED	EE	EF
AL												13
AA. Housing material AL = Aluminium												EF. Nut type 13 = Slotted nut 
AB. Housing color¹ AC. Housing treatment												EE. Grounding G = Yes Z = No
1231 = Black (chromium)  1311 = Green (anodized)  1411 = Blue (anodized)  1611 = Red (anodized)  1731 = Grey (chromium)  1811 = Beige (anodized)  1911 = Olive green (anodized)  2111 = Purple (anodized) 											ED. O-ring at plug interface 11 = Viton 12 = EPDM (low temperature)	
BA. Connector style DBP = Flush (vs. panel) Rear Mounting Receptacle DBPL = Front Projecting (vs. panel) Rear Mounting Receptacle												DD. Keying code 11 = Code 1  12 = Code 2  13 = Code 3  Other keying codes are available on request.
BC. Sealing level U = Sealed (IP68) even unmated E = Hermetic												DC. Contact type SR = Solder PB = PCB
CA. Connector size 102, 103, 1031 or 104 = Series (See Dimensions section)												DB. Contact Configuration Three-digit number ²
												DA. Polarity A = Female contacts on receptacle Z = Male contacts on receptacle

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² See list of contact configurations available at www.fischerconnectors.com/alulite_contact_configurations

Assembly tool

Nutdriver for slotted nuts



Thread size	D	Part number
M9x0.5	15	TC00.000
M10x0.5	16	TC00.007
M14x1	21	TG00.001
M15x1	22	TK00.000
M16x1	23	TK00.002
M20x1	28	TP00.005

Material: hardened tool steel, Nickel plated.

Mechanical & Environmental Data

Parameter	Typical value	Standard
Mating cycles	10,000	IEC 60512-5-9a
Temperature range - Viton O-ring at plug interface - EPDM O-ring (Low temp) at plug interface	0°C to +150°C (32°F to +302°F) -50°C to +150°C (-58°F to +302°F)	IEC 60068-2-14
Sealing	IP68	IEC 60529
Hermeticity - DEE, DBPE, DBPLE	Hermetic: Tested: <10 ⁻⁸ mbar l/sec. ¹ IP69K ²	
Corrosion, salt spray	5% NaCl, 96 hours	IEC 60068-2-11 Test Ka
Vibration	Contact interruption < 1µs (10-2000Hz/15G)	MIL-STD-202 Method 204, Condition B

¹ If needed, the residual leakage can be tested 1 minute for values <10⁻⁹ mbar l/s or <10⁻⁴ Pa cm³/s

² Protected against the effects of high pressure liquids. The test requirements for IP69K exist only in DIN 40050-9, the German version of IEC 60529

Material & Surface Treatments

Part	Material				Finish	
	Designation	Standards				
		ISO	UNS	EN	Designation	US standards
Plug housing - Body - Latching sleeve (anodized)	Aluminium Aluminium	AlMgSiSn1Bi AlMgSiSn1Bi	- -	AW-6023 AW-6023	Electroless Nickel Sulfuric anodizing	SAE AMS 2404 MIL-A-8625
Receptacle housing - Receptacle housing (anodized)	Aluminium	AlMgSiSn1Bi	-	AW-6023	Sulfuric anodizing	MIL-A-8625
Grounding - Tag (solder and crimp contacts) - Pin (PCB contacts)	Brass Brass	CuZn39Pb3 CuZn39Pb3	C 38500 C 38500	- -	Electroless Nickel Nickel + Flash Gold	SAE AMS 2404
Contacts - Male contacts - Female contacts	Brass Bronze	CuZn39Pb3 CuSn4Zn4Pb4	C 38500 C 54400	- -	Electroless Nickel 1 µm Gold	MIL-DTL-45204D Type 1 + ASTM B488
Insulator	PEEK	-	-	-	-	-
Potting U/E	High performance thermoset polymer	-	-	-	-	-
Standard O-rings	FPM (Viton®)	-	-	-	-	-
Low temp O-ring at plug interface	EPDM	-	-	-	-	-

Our products are RoHS compliant

Electrical Data

Parameter	Series				
	102	103	1031	104	105
Number of contacts (Max current per contact ¹ in A)	2 (9.2) to 9 (1.7)	2 (13) to 12 (2.0)	10 (4.5) to 19 (2.5)	2 (20) to 27 (2.0)	2 (26) to 27 (3.0)
Contact resistance ² - Ø 0.5 mm contacts - Ø 0.7 mm contacts - Ø 0.9 mm contacts - Ø 1.3 mm contacts	Typical 5mΩ Typical 5mΩ Typical 4mΩ Typical 2.5mΩ				
Grounding resistance ³ (shell-to-shell)	Typical 45 mΩ	Typical 30 mΩ	Typical 25 mΩ	Typical 20 mΩ	Typical 10 mΩ
EMC shielding	360-degree EMC shielding				

¹ For 40°C temperature rise IEC 60512-3-5b

² IEC 60512-2-1-2a; IEC 60512-2-2-2b

³ IEC 60512-2-6-2f



■ *Broadcast*



■ *Medical*



■ *Defense & Security*



■ *Extreme Environments*

www.fischerconnectors.com

Using state of the art technology, Fischer Connectors designs, manufactures and distributes high-performance connector and cable assembly solutions.

Known for their reliability, precision, and resistance to extreme environmental conditions, our products are used in fields requiring faultless quality, such as medical equipment, instrumentation, measuring and testing devices, broadcast, telecommunication, defense and security applications.

Selecting the right connector and cable assembly system is an important and challenging process. Our specialists are on hand to help you equip your application with the most suitable connector solution. Contact us for more information.



■ *Instrumentation*

fischer[®]
CONNECTORS

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CONNECTORS

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