



Enhanced Laser Sentinel

SAFETY LASER SCANNER



LASER SENTINEL is the innovative solution for safe area protection in a large variety of applications in automation and intralogistic industries. It offers a complete and flexible solution for the safeguard of robotic cells, automated guided vehicles and general machinery.

- Safety laser scanner based on Time Of Flight measurement
- More than 72 m2 safely monitored, with 5.5 m over 275°
- High detection performances in compact size
- Advanced dust filtering
- Easy programming with intuitive Graphic User Interface
- Dimensions (w,d,h): 102 , 112.5, 152 mm

- I/O connection with standard M12 cables
- Up to 3 simultaneous safety zones
- 2 Warning zones up to 40 m
- 30/40/50/70/150 mm selectable detection capability
- Up to 70 zone sets
- Partial dynamic muting
- Metal brackets allowing full orientation and fast replacement
- Advanced measurement data protocol
- Colour graphic display for monitoring and diagnostics
- Speed measurement with encoder in



CODE DESCRIPTION

SLS - M 3 - E - 08 E

series	SLS	Enhanced laser Sentinel							
	SA	Standalone, 6 zones sets							
model	M	Master, 10 zones sets							
	R	Slave (or remote)							
max safety range	5	5.5 m							
	3	3 m							
encoder inputs	E	encoder inputs on secondary connector							
		not present							
I/O connectors	08	M12 8-pin male							
	0812	M12 8-pin male or M12 12-pin male							
	1708	M12 17-pin male and M12 8-pin male							
enhanced version	E	Enhanced version							
		Standard Enhanced version (*)							

(*) Only for models produced after January the 31st 2020

TECHNICAL SPECIFICATIONS

	SLS-SA*-08	SLS-M*-0812-E	SLS-M*-1708-E	SLS-M5-E-1708-E	SLS-R*-E
FEATURES AND PERFORMANCES					
Detection capability	30/40/50/70/150 mm selectable				
Angular resolution min	0.1 °				0.5 °
Safety range with detection capability = 30 mm	0.05 ... 2.5 m				
Safety range with detection capability = 40 mm	0.05 ... 3m				
Safety range with detection capability = 50 mm	0.05 ... 4 m				
Safety range with detection capability = 70 mm	0.05 ... 5.5 m				
Safety range with detection capability = 150 mm	0.05 ... 5.5 m				
Max warning zone range	40 m @ 90% remission target (white)				
Max simultaneous safety zones	1	2 M12 12 p. connector	3	Not applicable	
Response time	62 ... 1202 ms				
Tolerance zone	100 mm				
Supplement for retroreflectors on scan plane in front of a safety zone	200 mm				
NUMBER OF ZONESET					
With 1 safety zone min		3 M12-8 p. connector	20 M12-17 p. connector		
With 1 safety zone max	3	10 M12-12 p connector	70 M12-17 p. + M12-8 p. connectors		
With 1 safety zone + 1 warning zone min		2 M12-8 p. connector	20 M12-17 p. connector		
With 1 safety zone + 1 warning zone max	2	6 M12-12 p. connector	70 M12-17 p. + M12-8 p. connectors		
With 1 safety zone + 2 warning zone min		3 M12-12 p. connector	20 M12-17 p. connector		
With 1 safety zone + 2 warning zone max		3 M12-12 p. connector	70 M12-17 p. + M12-8 p. connectors		
With 2 safety zone min		3 M12-17 p. connector	20 M12-17 p. connector		
With 2 safety zone max		3 M12-12 p connector	70 M12-17 p. + M12-8 p. connectors		
With 2 safety zone + 1 warning zone min		2 M12-12 p. connector	10 M12-17 p. connector		
With 2 safety zone + 1 warning zone max		2 M12-12 p. connector	70 M12-17 p. + M12-8 p. connectors		
With 2 safety zone + 2 warning zone min		1 M12-12 p. connector	6 M12-17 p. connector		
With 2 safety zone + 2 warning zone max		1 M12-12 p. connector	70 M12-17 p. + M12-8 p. connectors		
With 3 safety zone min		2 M12-12 p. connector	10 M12-17 p. connector		
With 3 safety zone max		2 M12-12 p. connector	70 M12-17 p. + M12-8 p. connectors		
ELECTRICAL DATA					
Power Supply	24 Vdc ± 20%				
Power consumption	8 W @24 V, Single device, without load				
CONFIGURABLE INPUT/OUTPUT					
OSSD	1x2	2x2 M12-8 p. connector	3x2		
Configurable input max	0	2	12	12 4 HF inputs for encoders	Not applicable
Configurable output max	0		2	Not applicable	
Configurable input/output max	3	1	4	Not applicable	
High-speed inputs (100 kHz)	Not applicable			4	Not applicable
COMMUNICATION					
Network Interface	10/100 Mbit/s Ethernet				Not applicable
HMI/UI					
Configuration and monitoring interfaces	DL Sentinel 3.2x				
LED indicators	OSSD / Warning / Interlock				

TECHNICAL SPECIFICATIONS

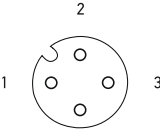
	SLS-SA*-08	SLS-M*-0812-E	SLS-M*-1708-E	SLS-M5-E-1708-E	SLS-R*-E
MECHANICAL DATA					
Dimensions	102 x 113 x 152 mm				
Material	Metal - Aluminium / PMMA				
Housing material	Painted aluminium / PC				
Optic window material	PMMA				
ENVIRONMENTAL DATA					
Humidity	15 ... 95 %				
Mechanical protection	IP 65 (EN 60529)				
Operating Temperature	-10 ... 50 °C				
Storage temperature max.	-20 ... 70 °C				
OPTICAL DATA					
Laser class	1 (EN 60825-1:2014)				
SAFETY PARAMETERS					
Type	3				
SIL	SIL 2 (IEC 61508)				
Cat.	3 (EN ISO 13849-1)				
PFHd	6.38 10-8				
Mission Time (TM)	20 years according to EN ISO 13849				
FUNCTIONS					
Generic Alarm	Available				
Clean Window Alarm	Available				
Muting enable	Available				Not applicable
Override	Available				Not applicable
EDM (External Device Monitoring)	Available				Not applicable
Partial / dynamic Muting for first OSSD	Available				Not applicable
Pre-alarm (warning)	Available				Not applicable
Advanced data transfer protocol	Available				
Reset (restart cycle)	Available				Not applicable
Shut off (mute)	Available				Not applicable
Manual / automatic restart	Available				Not applicable
Reference points	Available				

AVAILABLE MODELS

Description	Model
SLS master 3 m safety distance - up to 10 zone set	SLS-M3-0812-E (958001020)
SLS master 3 m safety distance - up to 70 zone set	SLS-M3-1708-E (958001010)
SLS stand alone 3 m safety distance - up to 10 zone set	SLS-M5-0812-E (958001110)
SLS master 5.5 m safety distance - up to 70 zone set	SLS-M5-1708-E (958001030)
SLS master 5.5 m safety distance - up to 70 zone set - Encoder input	SLS-M5-E-1708-E (958001050)
SLS remote 3 m safety distance	SLS-R3-E (958001060)
SLS remote 5.5 m safety distance	SLS-R5-E (958001120)
SLS stand alone 3 m safety distance - up to 6 zone set	SLS-SA3-08 (958001080)
SLS stand alone 5.5 m safety distance - up to 6 zone set	SLS-SA5-08 (958001090)

CONNECTIONS

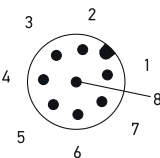
SLS-M*-0812-E



FEMALE M12
4 pins Ethernet,
F, Key D

1	Transmit data+
2	Receive data+
3	Transmit data-
4	Receive data-

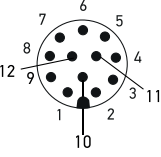
SLS-M*-0812-E



MALE M12
8 pins Safety SLS
master 0812

1	White	CONFIGURABLE INPUT/OUTPUT
2	Brown	24 Vdc
3	Green	CONFIGURABLE INPUT
4	Yellow	CONFIGURABLE INPUT
5	Grey	OSSD11
6	Pink	OSSD12
7	Blue	0 Vdc
8	Red	F_Earth

SLS-M*-0812-E

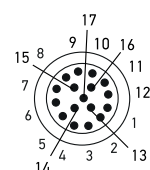


MALE M12
12 pins Safety

1	Brown	24 Vdc
2	Blue	0 Vdc
3	White	CONFIGURABLE INPUT
4	Green	24 Vdc
5	Pink	OSSD12
6	Yellow	0 Vdc
7	Black	CONFIGURABLE INPUT/OUTPUT
8	Gray	OSSD11
9	Red	CONFIGURABLE INPUT/OUTPUT
10	Violet	CONFIGURABLE INPUT/OUTPUT
11	Gray/Pink	CONFIGURABLE INPUT/OUTPUT
12	Red/Blue	F_Earth

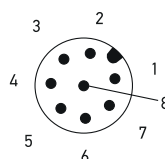
CONNECTIONS

SLS-M*-1708-E		
1	Brown	24 Vdc
2	Blue	0 V
3	Blue	0 V
4	Green	CONFIGURABLE INPUT
5	White/Black	CONFIGURABLE INPUT
6	Orange	CONFIGURABLE INPUT
7	Black	CONFIGURABLE INPUT
8	Pink	OSSD12
9	Red	CONFIGURABLE INPUT
10	Brown	24 Vdc
11	Brown	24 Vdc
12	Blue	0 V
13	Grey	OSSD11
14	White	CONFIGURABLE INPUT
15	Yellow	CONFIGURABLE INPUT
16	Yellow/Green	F_Earth
17	Violet	CONFIGURABLE INPUT



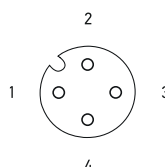
MALE
M12
17 pins Safety
SLS master 1708

SLS-M*-1708-E		
1	White	CONFIGURABLE INPUT
2	Brown	CONFIGURABLE INPUT
3	Green	CONFIGURABLE INPUT
4	Yellow	HF INPUT (ENC 11)
5	Grey	HF INPUT (ENC 21)
6	Pink	HF INPUT (ENC 12)
7	Blue	CONFIGURABLE INPUT
8	Red	HF INPUT (ENC 22)



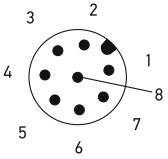
MALE
M12
8 pins Safety SLS
master 1708

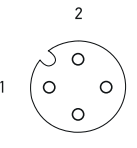
SLS-M*-1708-E		
1		Transmit data+
2		Receive data+
3		Transmit data-
4		Receive data-

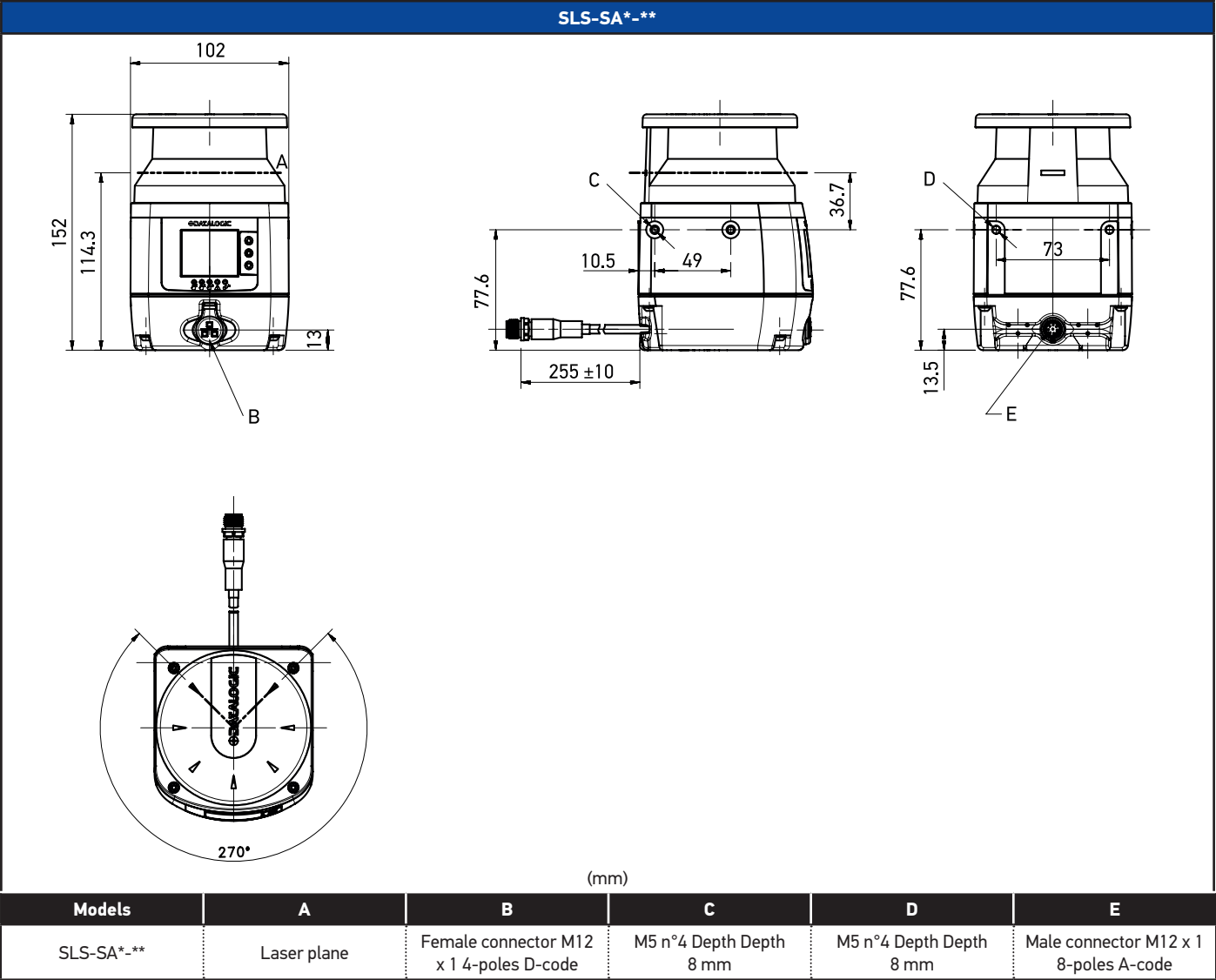


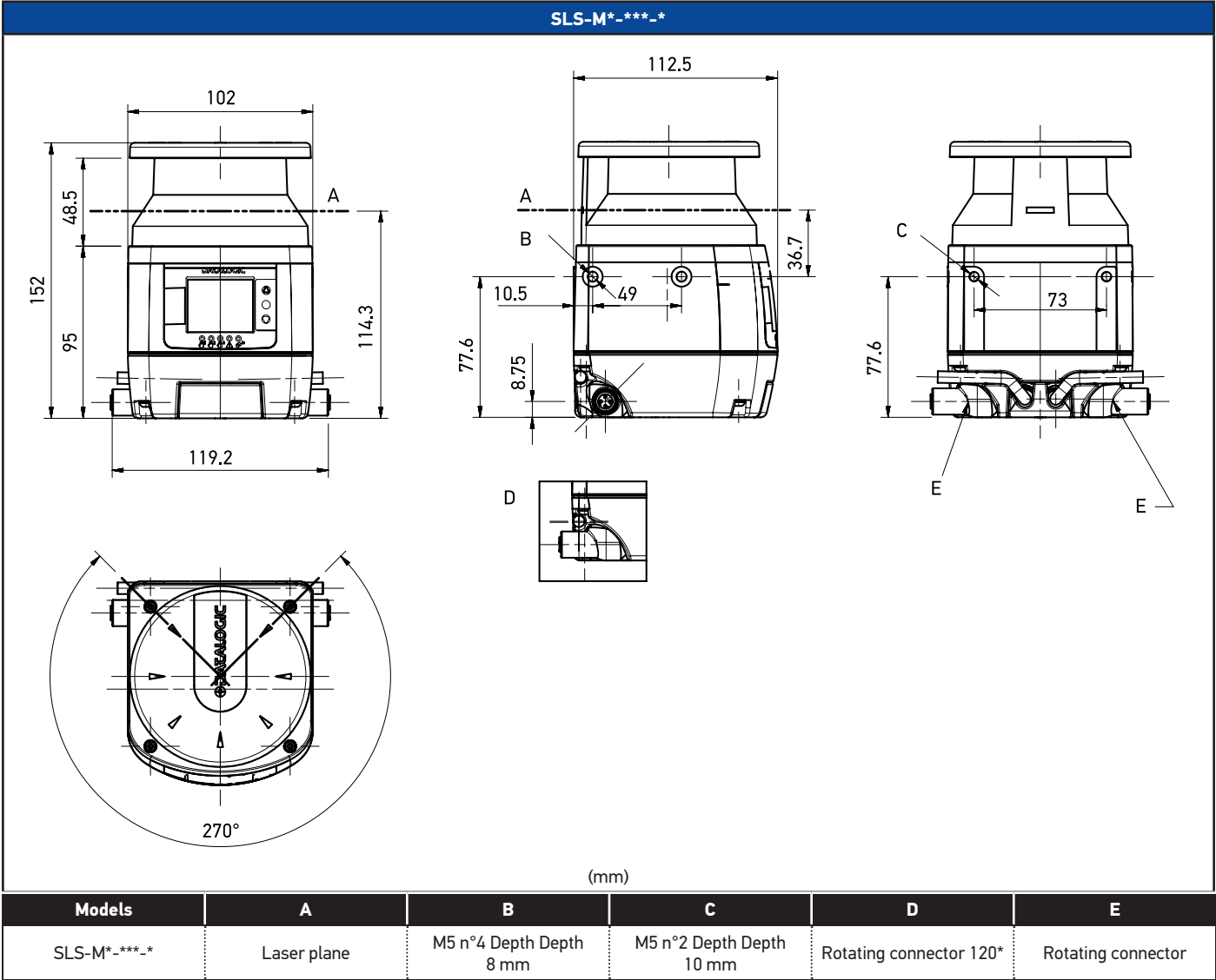
FEMALE M12
4 pins Ethernet,
F, Key D

CONNECTIONS

SLS-SA*-08			
 MALE M12 8 pins Safety SLS stand alone	1	White	CONFIGURABLE INPUT/ OUTPUT
	2	Brown	24 Vdc
	3	Green	CONFIGURABLE INPUT/ OUTPUT
	4	Yellow	CONFIGURABLE INPUT/ OUTPUT
	5	Grey	OSSD11
	6	Pink	OSSD12
	7	Blue	0 Vdc
	8	Red	F_Earth

SLS-SA*-08			
 FEMALE M12 4 pins Ethernet, F, Key D	1		Transmit data+
	2		Receive data+
	3		Transmit data-
	4		Receive data-





Enhanced Laser Sentinel



Models	A	B	C	D	E
SLS-R*-*	Laser plane	M5 n°4 Depth 8 mm	M5 n°2 Depth 10 mm	Rotating connectors 120°	Rotating connector

ACCESSORIES TO BE ORDERED SEPARATELY

	Model	Description	Article code
Cables	SLS-CABLE-R-5	M12-8p M to M12-8p M cable with 5 m length for master-remote and remote-re-remote connection	95ASE2890
	CS-A1-06-U-50	Cable M12 8 poles axial female unshielded 50m UL 2464	95A252710
	CS-A1-06-U-03	Cable M12 8 poles axial female unshielded 3m UL 2464	95ASE1220
	CS-A1-06-U-05	Cable M12 8 poles axial female unshielded 5m UL 2464	95ASE1230
	CS-A1-06-U-10	Cable M12 8 poles axial female unshielded 10m UL 2464	95ASE1240
	CS-A1-06-U-15	Cable M12 8 poles axial female unshielded 15m UL 2464	95ASE1250
	SLS-CABLE-R-10	M12-8p M to M12-8p M cable with 10 m length for master-remote and remo-te-remote connection	95ASE2900
	CS-A1-06-U-25	Cable M12 8 poles axial female unshielded 25m UL 2464	95ASE1260
	CS-A1-10-U-03	Cable M12 12 poles axial female unshielded 3m UL 2464	95A252720
	CS-A1-10-U-05	Cable M12 12 poles axial female unshielded 5m UL 2464	95A252730
	CS-A1-10-U-10	Cable M12 12 poles axial female unshielded 10m UL 2464	95A252740
	CS-A1-10-U-15	Cable M12 12 poles axial female unshielded 15m UL 2464	95A252750
	CS-A1-10-U-25	Cable M12 12 poles axial female unshielded 25m UL 2464	95A252760
	CS-A1-10-U-50	Cable M12 12 poles axial female unshielded 50m UL 2464	95A252770
	CAB-ETH-M01	M12-RJ45 IP67 ethernet cable 1m	93A051346
	CAB-ETH-M03	M12-RJ45 IP67 ethernet cable 3m	93A051347
	CAB-ETH-M05	M12-RJ45 IP67 ethernet cable 5m	93A051348
	SLS-CABLE-R-20	M12-8p M to M12-8p M cable with 20 m length for master-remote and remo-te-remote connection	95ASE2910
	CAB-ETH-M10	M12-RJ45 IP67 ethernet cable 10m	93A051391
	CAB-ETH-M01 (20 pcs)	CAB-ETH-M01 (20 pcs)	95ASE2650
	CAB-ETH-M03 (20 pcs)	CAB-ETH-M03 (20 pcs)	95ASE2660
	CAB-ETH-M05 (10 pcs)	CAB-ETH-M05 (10 pcs)	95ASE2670
Memory groups	SLS-MG-1708	SLS-MG-1708	95ASE2950
	SLS-MG-0812	SLS-MG-0812	95ASE2960
Mounting brackets	SLS-BRACKET-A	SLS-BRACKET-A	95ASE2920
	SLS-BRACKET-B	SLS-BRACKET-B	95ASE2930
	SLS-BRACKET-C	SLS-BRACKET-C	95ASE2940
Protective win-dows	SLS-WINDOW	SLS-WINDOW	95ASE2971
Safety units	SE-SR2	Safety unit 3NO + 1NC outputs	95ACC6170
	CSME-03VU24-Y14	Forced guided relay interface 3NO + 1 NC	95ASE1270
Window cleaners	SLS-CLOTH	SLS-CLOTH	95ASE3000
	SLS-CLEANER	SLS-CLEANER	95ASE2990

SLS WINDOW, SLS-MG-1708 and SLS-MG-0812 are spare parts and not accessories.

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