



BETALIGHT
when reliability really counts

MILITARY LIMIT
SWITCHES

MILITARY LIGHTING SYSTEMS
LIMIT SWITCHES



MILITARY LIGHTING SYSTEMS

REGULATION

SURPASSING STANDARDS WORLDWIDE.

We offer the best products to be used for military applications legally on-road around the world. To do that, we design lights that meet and exceed the requirements for a variety of regulations:



The Federal Motor Vehicle Safety Standard regulates all automotive lighting, signaling, and reflective devices in the U.S.A. and is enforced by the Department of Transportation (**DOT**)



Many countries recognize the United Nations Economic Commission for Europe (**ECE**) Transport Division's regulations and mirror the ECE regulations in their own national requirements



SAE International develops standards for the engineering of powered vehicles mainly in the U.S.A. and Canada, including cars, trucks, boats, aircraft, and more



Transport Canada is responsible for developing regulations, policies, and services relating to transportation in Canada



The Australian Design Rules (**ADR**) are national standards for vehicle safety, anti-theft, and emissions

IP RATINGS

The Ingress Protection (IP) Code outlines a system of classification for the protection of electrical enclosures against the intrusion of foreign bodies like tools, fingers, dust, and moisture. The system of classification was specified by the International Electrotechnical Commission and is officially designated as IEC 60529.

FIRST # - DEGREE OF INGRESS PROTECTION

The degree of protection against contact with moving parts and the degree that the equipment is protected against solid foreign bodies intruding into an enclosure.

IP #	DESCRIPTION
0	No protection provided.
1	Protection against entry of objects larger than 50 square mm.
2	Protection against entry of objects larger than 12 square mm.
3	Protection against entry of objects larger than 2.5 square mm.
4	Protection against entry of objects larger than 1.0 square mm.
5	Protection against entry of dust in sufficient quantity to prevent satisfactory operation.
6	Complete protection against entry dust.

SECOND # - DEGREE OF MOISTURE PROTECTION

The degree of protection for the equipment inside the enclosure against the harmful entry of various forms of moisture (e.g. dripping, spraying, submersion, etc.)

IP #	DESCRIPTION
0	No protection provided.
1	Protection against drops of water falling vertically.
2	Protection against drops of water falling vertically when the light assembly is tilted up to 15 degrees from its normal position.
3	Protection from entry of water spray from angle of up to 60 degrees from vertical.
4	Protection from entry of water splashes or spray from any direction.
5	Protection from a low pressure jet of water in any direction.
6	Protection against heavy seas or a strong jet of water in any direction.
7	Protection against immersion up to 1 meter.
8	Protection against submersion over 1 meter.
9K	Protection against high pressure cleaning

LS1 SERIES

LS1 SERIES



BETALIGHT
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PRODUCT CODE SYSTEMATIC

LS1 . **1** **1** **2** . **1** **1** . **B** **D** **1** - **XX**
 Series Dimension Actuator Op. Force Contact Switch Type Connector Roller Pos. Colour Custom Man. No

1	Series
2	Dimension
	1- Small Size (29 mm x 21.5 mm x 21.5 mm)
	2- Large Size (39 mm x 26 mm x 27 mm)
	S- Custom
3	Actuator
	1- Chisel
	2- Ball
	3- Roller
	4- Manual
	S- Custom
4	Operation Force
	1- 15± 5N
	2- 30± 5N
	S- Custom
5	Contact
	1- Single Pole
	2- Double Pole
6	Switch Type
	1- Silver (MS24547-1)
	2- Gold (MS24547-2)
7	Connection Type
	A- MS3112E8-3P (Connector)
	B- MS3112E10-6P (Connector)
	C- VG95234A-10SL-3PN (Connector)
	D- KPSE07E10-6PDZ (Connector)
	E- D38999/20KA98PN (Connector)
	F- D38999/20WA35PN (Connector)
	H- VG95328C10-6PN (Connector)
	K- W th Cable (Cable Open Ended)
	S- Custom
8	Roller Position*
	A - 0 Degree (Fixed)
	B- 45 Degree (Fixed)
	C- 90 Degree (Fixed)
	D- 135 Degree (Fixed)
	E- Adjustable at 30° Intervals (Type-1 Position Nut)
	F- Adjustable at 45° Intervals (Type-1 Position Nut)
	G- Adjustable at 30° Intervals (Type-2 Position Nut)
	H- Adjustable at 45° Intervals (Type-2 Position Nut)
9	Colour
	1- Green (Ral 6020)
	2- Black (Ral 9005)
	3- Grey (Ral 7046)
	S- Custom

*If actuator is not selected roller type, roller position code is selected as A (0° Fixed).

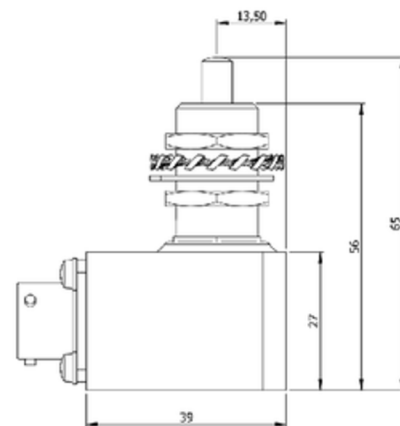
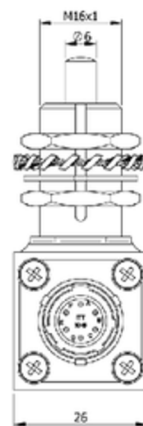
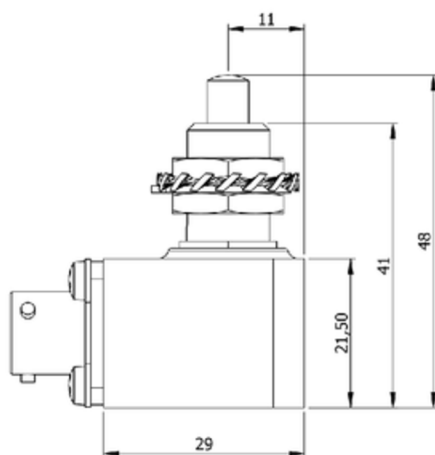
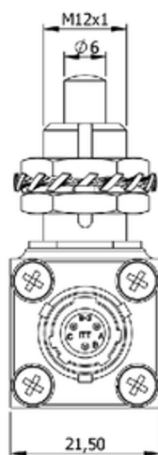


DIMENSIONS

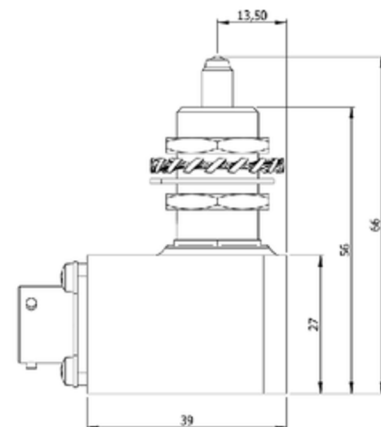
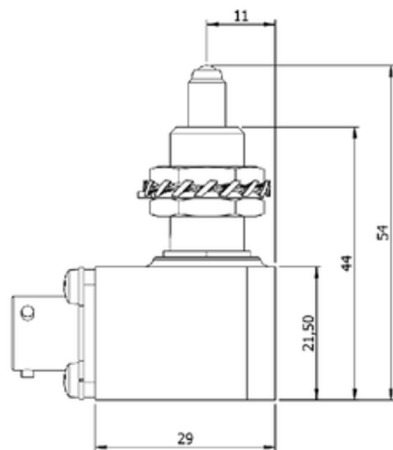
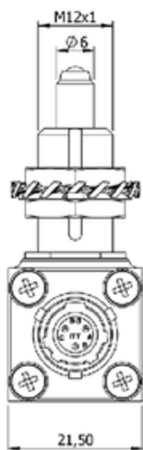
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Large Size

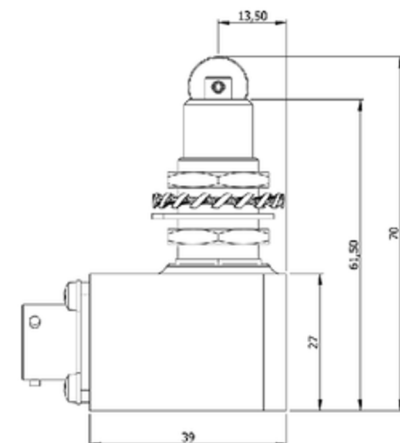
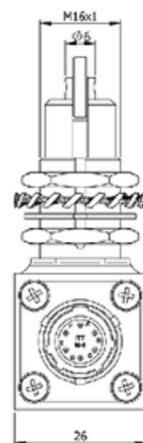
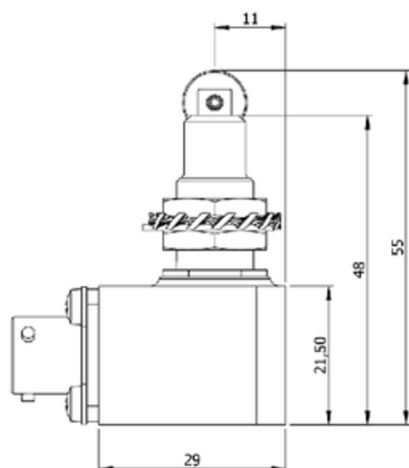
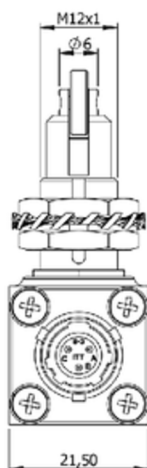
Chisel Actuator Type



Ball Actuator Type



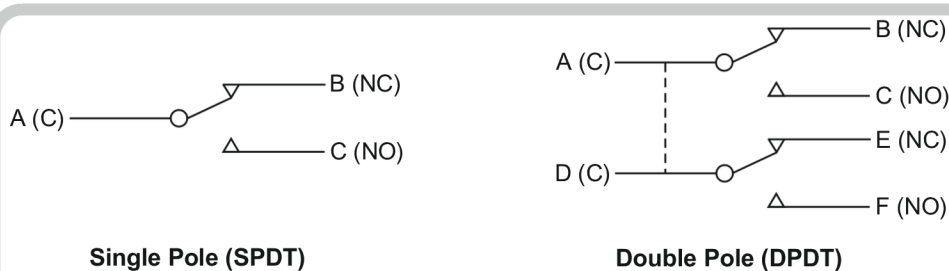
Roller Actuator Type



TECHNICAL SPECIFICATIONS

Housing Material	Aluminum Alloy
Actuator Material	AISI 316 Stainless Steel
Temperature Range	(-40°C) (+60°C)
Sealing	IP X7
Operation Force	15 ± 5N veya 30 ± 5N
Vibrat on Test; MIL-STD-202 Method 204; Test Cond t on B (5-2000 Hz)	15 g
Shock Test : MIL-STD-202 Method 213 Test Condition I (6ms ;Sawtooth)	85 g
Insulation Resistance MIL-STD-202 ; Method 302 Test Condition B (500V;1 m n.)	Min. 100 MΩ
Dielectric Withstanding Voltage MIL-STD-202 Method 301	1000 VAC
Mechanical Endurance	100 000 Cycles

CIRCUIT DIAGRAM



Type-1 Position Nut



Type-2 Position Nut



LS2 SERIES



PRODUCT CODE SYSTEMATIC

LS2	.	1	1	2	.	1	1	.	C	B		1	-	XX
Series		Dimension	Actuator	Op. Force		Contact	Switch Type		Con. Type	Cable Output pos.		Cable Length		Custom Man. No

1	Series
2	Dimension
	1- Small Size (M12)
	2- Large Size (M16)
	3- Small Size (15/32-32 UNS)
	4- Large Size (5/8-24 UNEF)
	5- Custom
3	Actuator
	1- Chisel
	2- Ball
	3- Roller
	4- Manuel
	S- Custom
4	Operation Force
	1- 15± 5N
	2- 30± 5N
	S- Custom
5	Contact
	1- Single Pole (SPDT)
	2- Double Pole (DPDT)
	3- Four Pole (4PDT)
6	Switch Type
	1- Silver (MS24547-1)
	2- Gold (MS24547-2)
7	Connection Type
	A- D38999/20KB98PN (Connector)
	B- D38999/20WA35PN (Connector)
	C- Cable
	S- Custom
8	Connect on Output Position
	A- Below
	B- Side
9	Cable Length*
	0- Without Cable (Only Connector)
	1- 500 mm
	2- 1000 mm
	3- 1500 mm
	S- Custom

*If the connector is selected as body-mounted type, cable length code will be selected as **0- Without Cable (Only Connector)**.



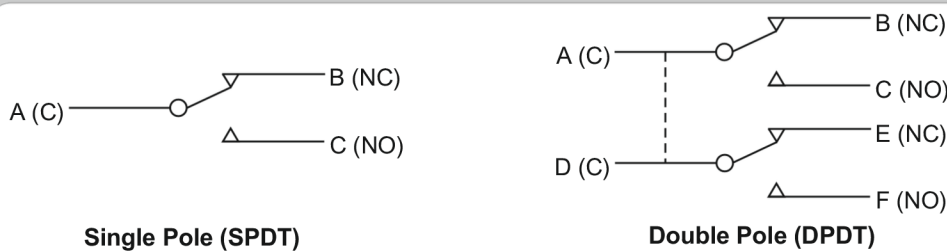
STANDART PRODUCT ORDERING KEY

Cross References

MS Part Number	Honeywell	BETALIGHT
MS24331-1	1EN1-6	LS2-24331-1
MS24331-2	2EN1-6	LS2-24331-2
MS24331-3	3EN1-6	LS2-24331-3
MS24331-4	4EN1-6	LS2-24331-4
MS21321-1	402EN1-6	LS2-21321-1
MS21321-2	404EN1-6	LS2-21321-2
MS27240-1	602EN1-6	LS2-27240-1
MS27240-2	604EN1-6	LS2-27240-2
MS27240-3	622EN1-6	LS2-27240-3
MS27240-4	624EN1-6	LS2-27240-4
MS27240-5	602EN222-6	LS2-27240-5
MS27240-6	604EN222-6	LS2-27240-6
MS27240-7	622EN222-6	LS2-27240-7
MS27240-8	624EN222-6	LS2-27240-8



CIRCUIT DIAGRAM



TECHNICAL SPECIFICATIONS

Housing Material	AISI 316 Stainless Steel
Actuator Material	AISI 316 Stainless Steel
Temperature Range	(-40°C) (+60°C)
Sealing	IP X7
Operation Force	15 ± 5N veya 30 ± 5N
Vibrat on Test; MIL-STD-202 Method 204; Test Cond t on B (5-2000 Hz)	15 g
Shock Test : MIL-STD-202 Method 213 Test Condition I (6ms ;sawtooth)	85 g
Insulat on Res stance : MIL-STD-202 Method 302 Test Condition B (500V;1 m n.)	Min. 100 MΩ
Dielectric Withstanding Voltage MIL-STD-202 - Method 301	1000 VAC
Mechanical Endurance	100 000 Cycles

LLS3 SERIES



PRODUCT CODE SYSTEMATIC

LS3	.	1	1	2	.	1	5	.	B	B	1	-	XX
Series		Dimension	Actuator	Op. Force		Contact	Connection Type		Cable Length	Cable Output Pos.	Colour		Custom Man. No

1	Series
2	Dimension
	1- Small Size (40 mm x 65 mm x 16 mm)
	2- Large Size (40 mm x 65 mm x 21 mm)
	S- Custom
3	Actuator
	1- Chisel
	2- Ball
	3- Roller - 0 Degree
	4- Roller - 90 Degree
	5- Manual S- Custom
4	Operation Force
	1- 15± 5N
	2- 30± 5N
	S- Custom
5	Contact
	1- Single Pole
	2- Double Pole
6	Connection Type
	1- Sure Seal (120-8551-002)
	2- Sure Seal (120-8551-101)
	3- KPT01E8-3P
	4- With Cable (Without Socket)
	5- AMP Socket (776495-2)
	6- KPT01E10-6P
	7- AMP Socket (282105-1)
	8- D38999/24WA98PN (Connector)
	S- Custom
7	Cable Length
	A - 150 mm
	B- 300 mm
	C- 500 mm
	D- 1000 mm
	S- Custom
8	Cable Output Position
	A- Below
	B- Side
9	Colour
	1- Green (Ral 6020)
	2- Black (Ral 9005)
	3- Grey (Ral 7046)
	S- Custom

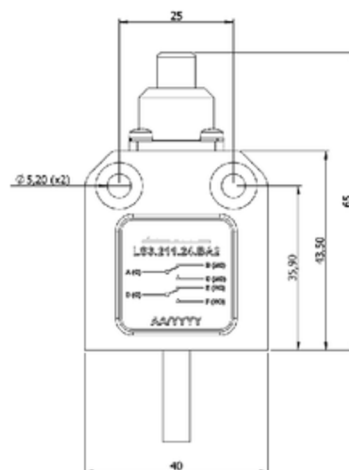
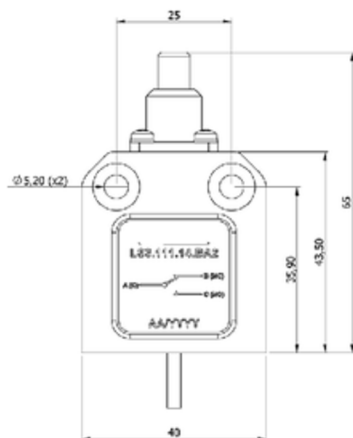


DIMENSIONS

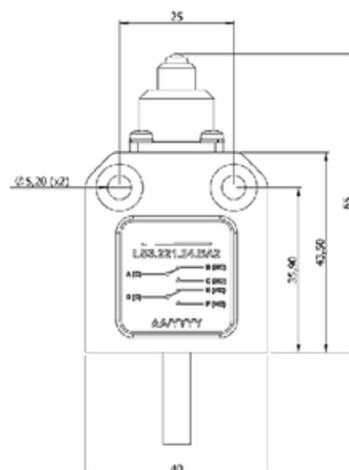
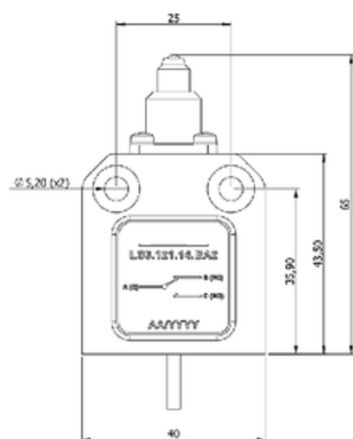
Small Size

Large Size

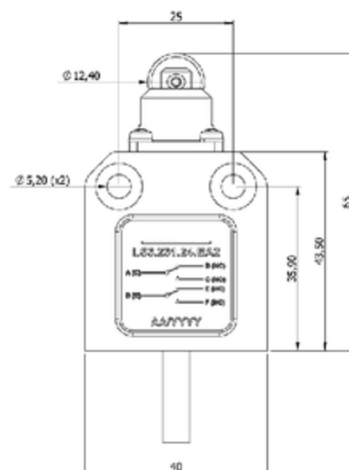
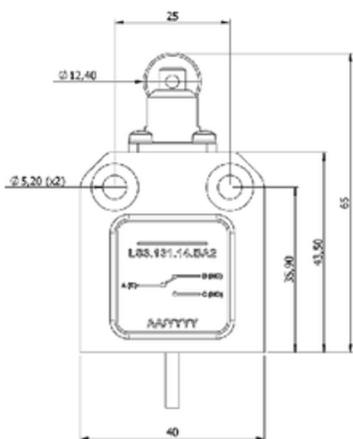
Chisel Actuator Type



Ball Actuator Type



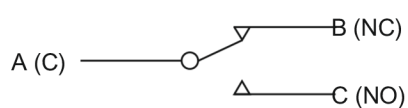
Roller Actuator Type



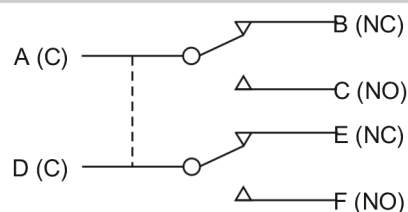
TECHNICAL SPECIFICATIONS

Housing Material	Al Alloy
Actuator Material	AISI 316 Stainless Steel
Temperature Range	(-40°C) (+60°C)
Sealing	IP X7
Operation Force	15 ± 5N veya 30 ± 5N
Vibration Test; MIL-STD-202 Method 204; Test Condition B (5-2000 Hz)	15 g
Shock Test : MIL-STD-202 Method 213 Test Condition I (6ms ;sawtooth)	85 g
Insulat on Resistance : MIL-STD-202 Method 302 Test Condition B (500V;1 min.)	M n. 100 MΩ
Dielectric Withstanding Voltage MIL-STD-202 - Method 301	1000 VAC
Mechanical Endurance	100 000 Cycles

CIRCUIT DIAGRAM



Single Pole (SPDT)



Double Pole (DPDT)



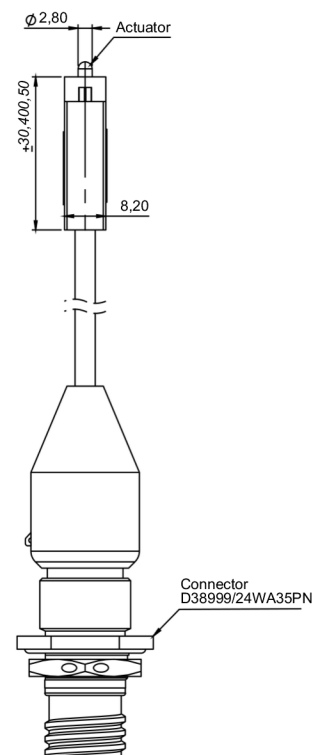
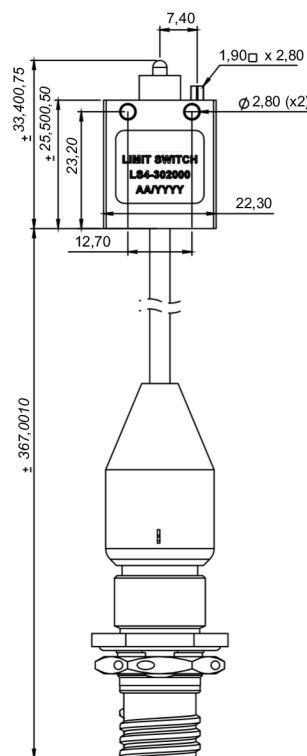
LS4 LIMIT SWITCH

P/N:LS4-302000



Technical Specifications

- P/N: LS4-302000
- Pretravel : Max. 1,25 mm
- Overtravel: Min. 0,30 mm
- Operation Force: 6 ± 2 N
- IP X7 Sealing



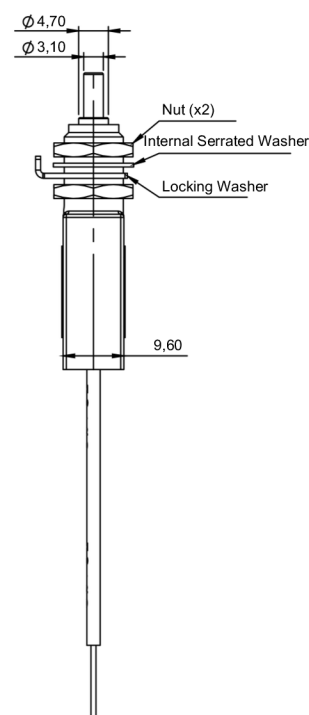
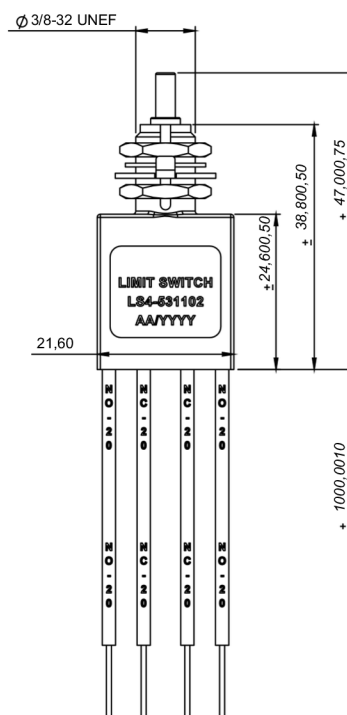
LS4 LIMIT SWITCH

P/N: LS4-531102



Technical Specifications

- P/N: LS4-531102
- Pretravel: $1,30 \pm 0,50$ mm
- Total travel: $7 \pm 0,50$ mm
- Operation Force 8 ± 2 N
- IP X7 Sealing



MILITARY LIMIT SWITCHES

LS1 SERIES



LS2 SERIES



LS3 SERIES



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