Technical Description

Functionality without compromise characterizes the **BOS S2**. All adjustment features (timing functions, setup aid, NO/NC setting) are accessible on the top of the unit and protected by a latching cover.

All three optical types are available in the same housing design:
- Thru-Beam (Emitter and Receiver)
- Retroreflective with polarizing filter
- Diffuse

The retroreflective version with polarizing filter operates in the visible red portion of the spectrum, all others use infrared.

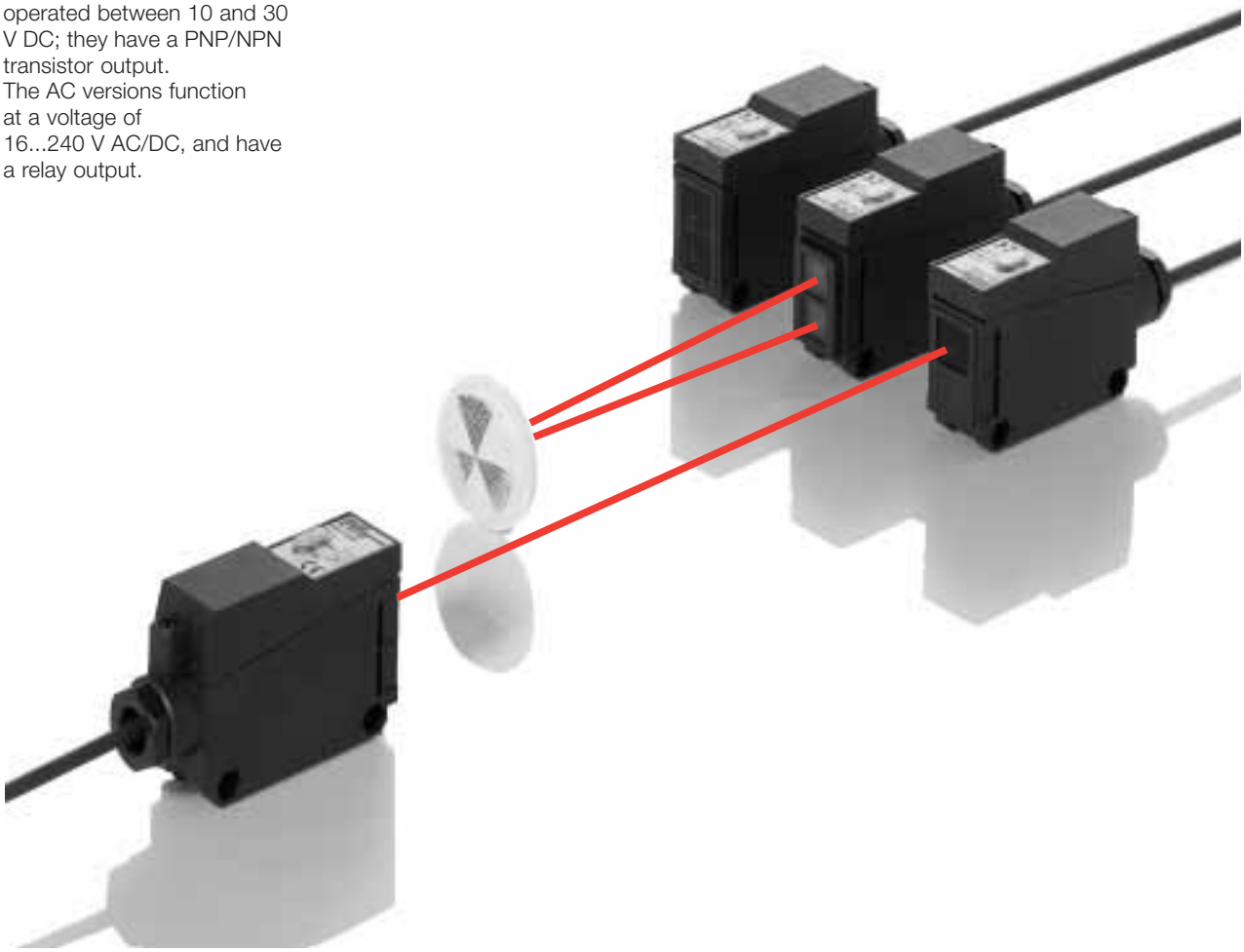
The DC versions can be operated between 10 and 30 V DC; they have a PNP/NPN transistor output.
The AC versions function at a voltage of 16...240 V AC/DC, and have a relay output.

Features

- Universal 10...30 V DC with PNP/NPN output, and 16...240 V AC/DC with relay output
- High immunity to ambient light and noise spikes
- Light-on or light-off switching
- Reception LED to indicate safe zone and contamination (green LED)
- Function display for output
- Adjusting aid using 2 LED‘s
- Programmable time delay
- IP 66
- All optical types in the same housing design
- Easily oriented adjustable mounting bracket included

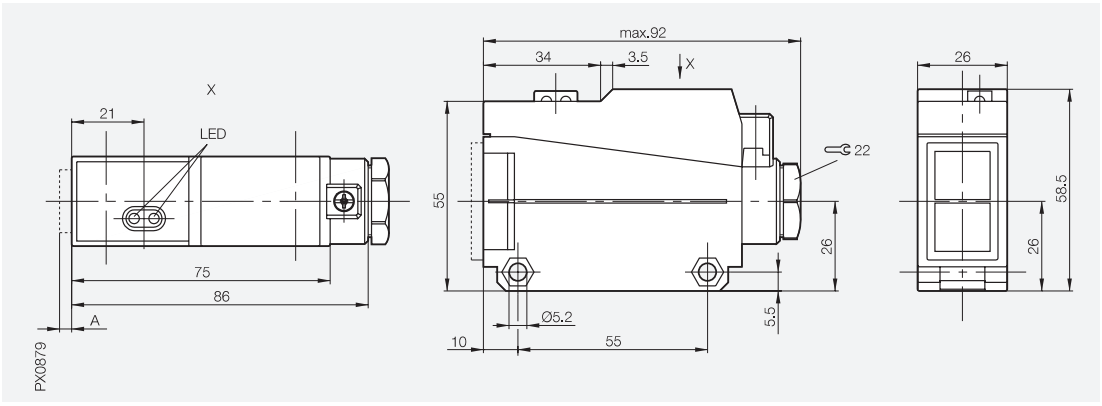
Applications

- Conveying
- Inventory control
- Gate controls
- Machine tools



BOS S2 DC, AC/DC, Diffuse and Retroreflective

Series		BOS S2, DC	BOS S2, AC/DC
Diffuse	Sensing range	900 mm/2 m	900 mm/2 m
Retroreflective	Sensing range	5 m	5 m



Diffuse					
PNP/NPN,relay	O/●	900mm		BOS S2-5-C90	BOS S2-1-C90
PNP/NPN,relay	O/●	900mm	timing functions*	BOS S2-5-C90T	BOS S2-1-C90T
PNP/NPN,relay	O/●	2.0m		BOS S2-5-C200	BOS S2-1-C200
PNP/NPN,relay	O/●	2.0m	timing functions*	BOS S2-5-C200T	BOS S2-1-C200T
Retroreflective					
PNP/NPN, relay	O/●	5m		BOS S2-5-A5	BOS S2-1-A5
PNP/NPN, relay	O/●	5m	timing functions*	BOS S2-5-A5T	BOS S2-1-A5T

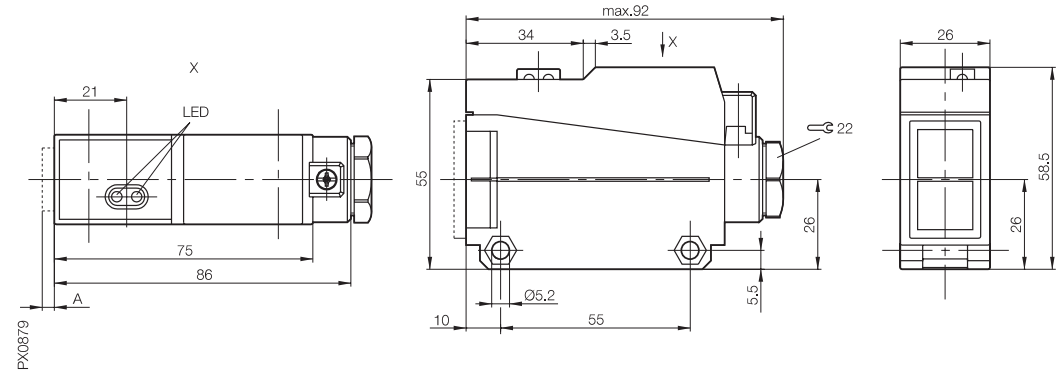
	BOS S2-5-...	BOS S2-1-...
Supply voltage U_B	**10...30 V DC**	**16...240 V AC/DC**
Voltage drop U_d at I_e	≤ 2 V	0 V
Rated isolation voltage U_i	75 V DC	250 V DC
Rated operational current I_e	≤ 100 mA	
No-load supply current I_0	≤ 30 mA	
Short circuit protected	yes	no
Permissible capacitance	0.33 µF	
On/Off delay	≤ 1 ms/≤ 2 ms	≤ 20 ms
Frequency of operating cycles	500 Hz/250 Hz	2 Hz
Utilization category	DC 13	140 V AC/DC 136
Output	PNP/NPN	relay 1 A, 250 V AC/30 V DC
Output function	O/● selectable	
Emitter light source	3000 Lux	
Permissible ambient light	Infrared 880nm	
Sensitivity adjustment	Potentiometer 0...270°	
Output function indication	yes	
Stability indication	yes	
Ambient temperature range T_a	–10...+60 °C	
Degree of protection per IEC 529	IP 66	
Housing material	PBT	
Material of sensing face	PMMA	
Connection	terminals M3.5	
No. of wires × conductor cross section	cable from 0.25...0.75 mm²	
Weight	100 g	

O/● = Light-On/Dark-On

Note: Reflector R2 and mounting bracket included

* Time delay range from 0.6 to 165.

Series			**BOS S2, DC**	**BOS S2, AC, DC**
Polarized Retroreflective	Sensing range		**3.5 m**	**3.5 m**
Thru-Beam	Sensing range		**10/50 m**	**10/50 m**



Polarized Retroreflective

PNP/NPN, Relay	O/● 3.5m		BOS S2-5-B3	BOS S2-1-B3
PNP/NPN, Relay	O/● 3.5m	timing functions*	BOS S2-5-B3T	BOS S2-1-B3T

Thru-Beam

PNP/NPN, Relay	O/● 10m receiver		BLE S2-5-F10	BLE S2-1-F10
PNP/NPN, Relay	O/● 10m receiver	timing functions*	BLE S2-5-F10T	BLE S2-1-F10T
PNP/NPN, Relay	O/● 10m emitter		BLS S2-5-G10	BLS S2-1-G10
PNP/NPN, Relay	O/● 50m receiver		BLE S2-5-F50	BLE S2-1-F50
PNP/NPN, Relay	O/● 50m receiver	timing functions*	BLE S2-5-F50T	BLE S2-1-F50T
PNP/NPN, Relay	O/● 50m emitter		BLS S2-5-G50	BLS S2-1-G50

Supply voltage U_B	**10...30 V DC**	**16...240 V AC/DC**
Voltage drop U_d at I_e	≤ 2 V	0 V
Rated isolation voltage U_i	75 V DC	250 V DC
Rated operational current I_e	≤ 100 mA	
No-load supply current I_0	≤ 30 mA	
Short circuit protected	yes	no
Permissible capacitance	0.33 µF	
On/Off delay	≤ 1 ms/≤ 2 ms	≤ 20 ms
Frequency of operating cycles	500 Hz/250 Hz	2 Hz
Utilization category	DC 13	140 V AC/DC 136
Output	PNP/NPN	relay 1 A, 250 V AC/30 V DC
Emitter light source	Infrared 880nm	
Output function	O/● selectable	
Permissible ambient light	3000 Lux	
Sensitivity adjustment	Potentiometer 0...270°	
Output function indication	yes	
Stability indication	yes	
Ambient temperature range T_a	–10...+60 °C	
Degree of protection per IEC 529	IP 66	
Housing material	PBT	
Material of sensing face	PMMA	
Connection	terminals M3.5	
No. of wires × conductor cross section	cable from 0.25...0.75 mm²	
Weight	100 g	

O/● = Light-On/Dark-On

Note: Reflector R2 and mounting bracket included.

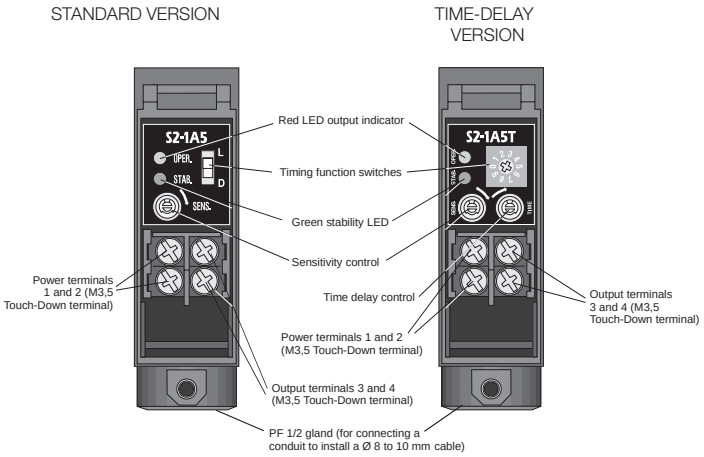
* Time delay range from 0.6 to 165.

Green Stability Display

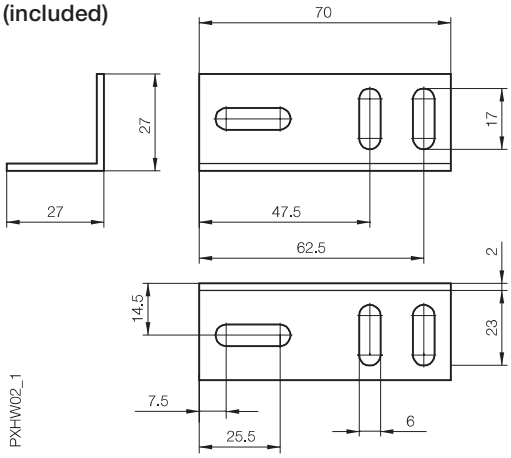
The green stability display illuminates in the “safe“ range, where the input energy is at least 30 % over or under the “threshold energy“.
The “threshold energy“ at which a signal change is effected, is defined as 100 %. The “safe“ range is therefore reached when:

– the input signal is at 130 % or more of the threshold energy.

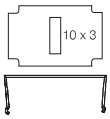
– the input signal is at 70 % or less than the threshold energy.



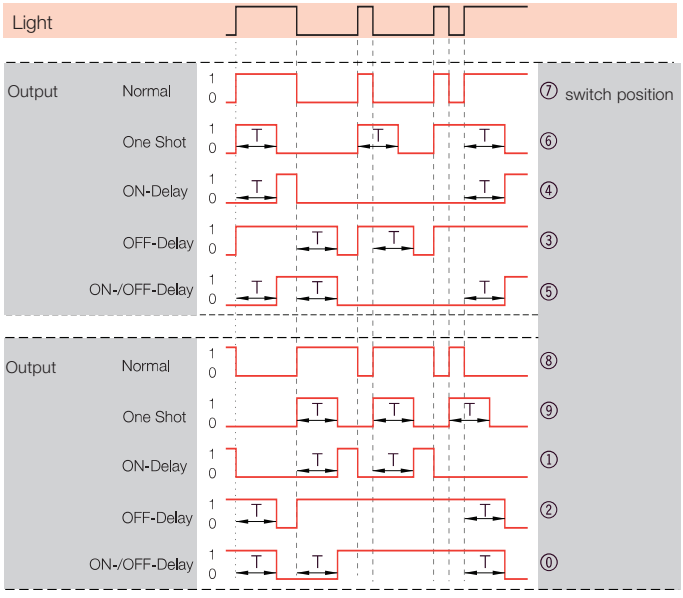
Mounting Bracket (included)



Slit Aperture
Part number: DLM-Z/32-1167

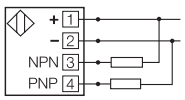


Programmable Time Functions

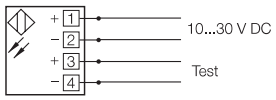


Wiring Diagrams

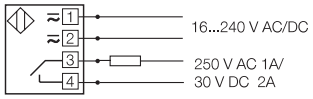
BOS S2-5-...



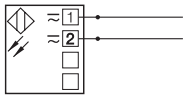
BLS S2-5-...



BLE S2-1-...

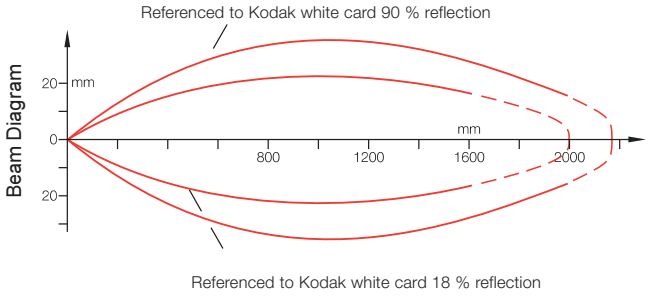


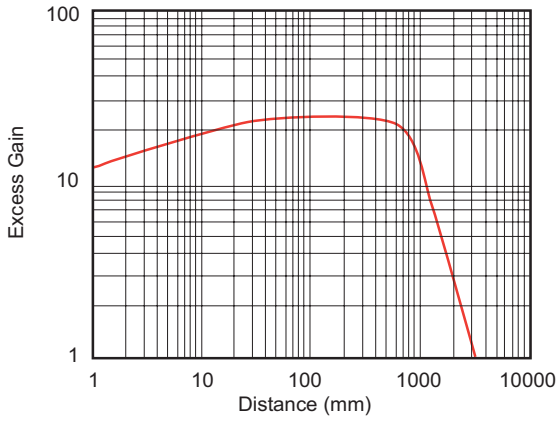
BLS S2-1-G...



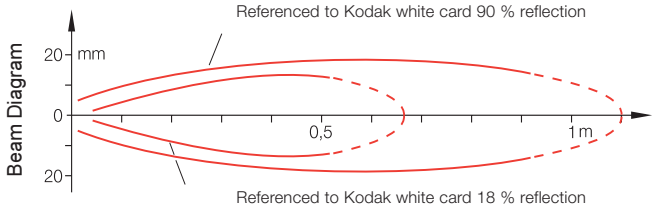
Time delay range from 0.6 to 165.

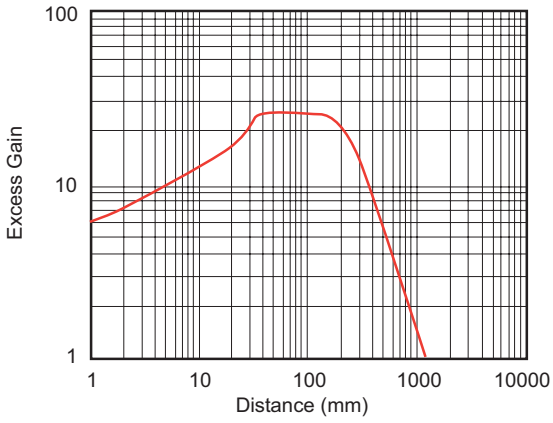
Diffuse Long Range BOS S2...C200...



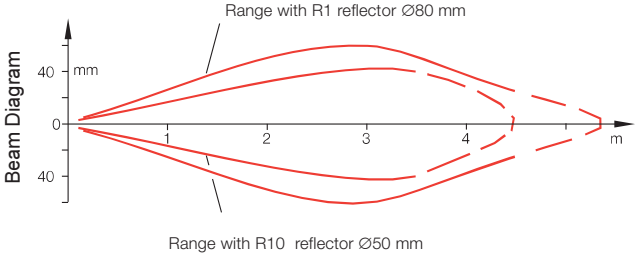


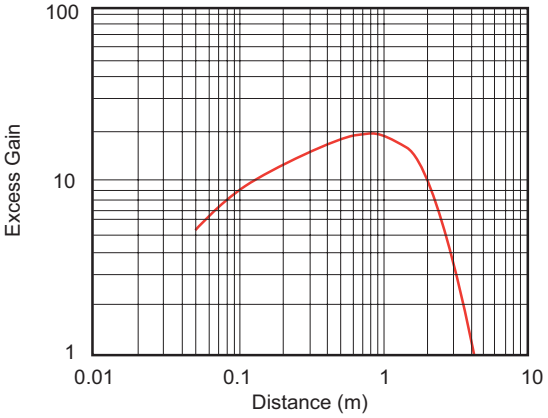
Diffuse, Short range BOS S2...C90...





Polarized retroreflective BOS S2...B3...

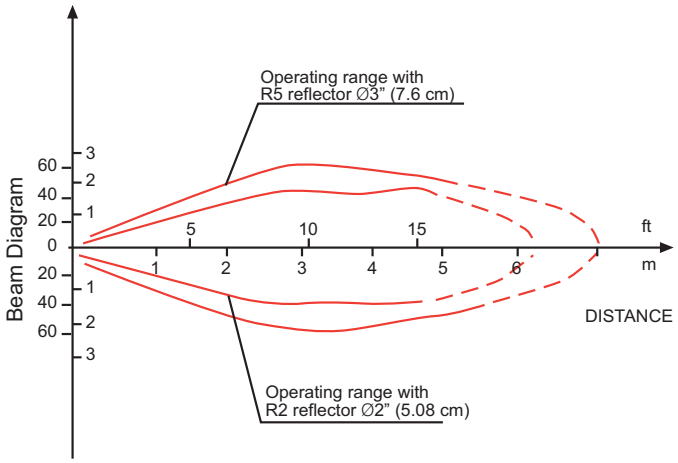


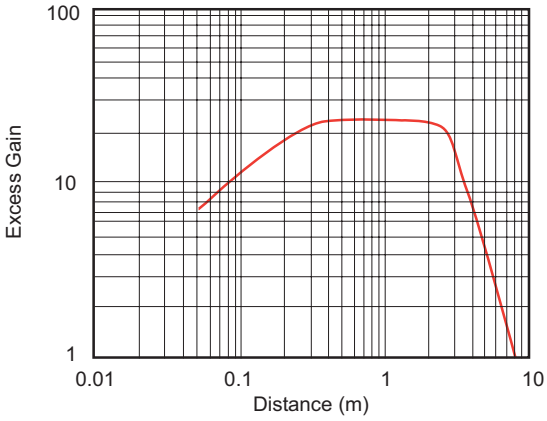


Note: Mounting bracket, R2 reflector for retroreflective model, and slit aperture (10×3) for emitter/receiver are included. See reflectors section for additional reflectors.

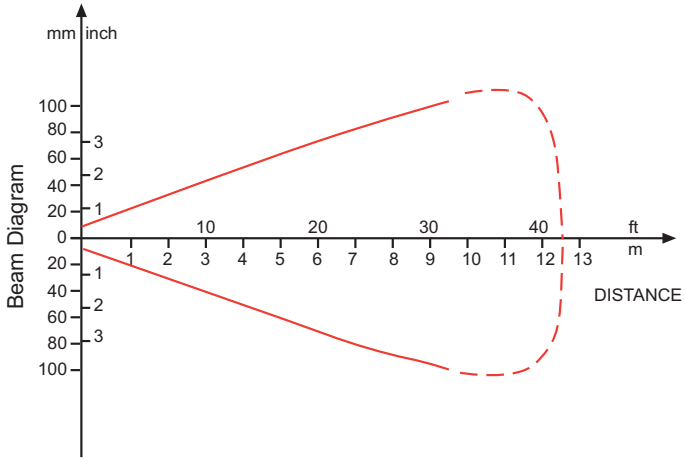
Diffuse values referenced to Kodak white card with 90 % reflection. Retroreflective values referenced to R1 reflector.

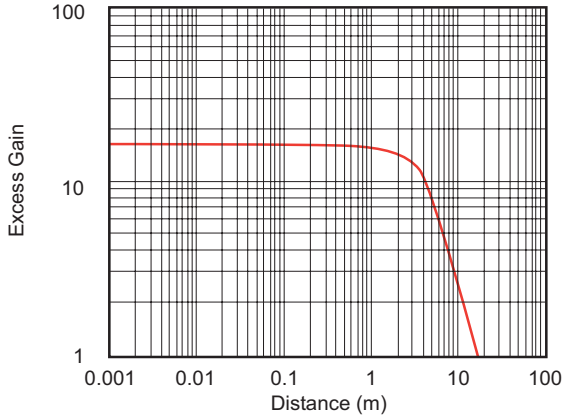
Retroreflective BOS S2...A5...





Thru-beam, short range BLE/BLS S2...F/G10





Thru-beam, long range BLE/BLS S2...F/G50