

- ▶ modularly constructed with bayonet locking system
- ▶ fast and easy to operate, mount, configure and change of modules
- ▶ troublefree and fingersafe bulb change at any position without using any tools



QUICK MOUNT SYSTEM „FOOT ADAPTER“ (Pat.No. 501053) (Base type BFR)

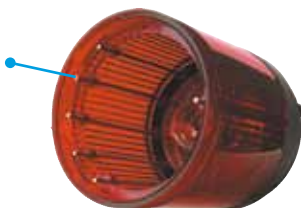


Quick mounting system "Foot adapter" saves the customer the electrical connection and eases considerably mounting of signal tower for machine manufacturers and their customers. Detailed description see page 51.

Features

- ▶ modularly designed, versatile, flexible and powerful signal towers
- ▶ any desired combination possible for many different kind of applications
- ▶ complete range of visual and audible modules in all conventional voltages
- ▶ extensive mounting options
- ▶ 6 lens colours
- ▶ PLC fit (leakage/inrush current)
- ▶ Protection class IP 65, UL certified, UL type 4, 4X, 13
- ▶ Integration into field bus system with AS-Interface module BAZ

module contacts



CONFIGURATION

SIGNAL TOWER modul SIGNAL70



LIGHT MODULES	Light source	Type
Steady light	bulb or LED-bulb	SLL
Flashing light		SLB
Strobe light	xenon tube	SLF
LED-Steady light	LED	SDC
LED-Flashing light		SDA
LED-Rotating light		SDR
LIGHT-BUZZER-MODULES		
Steady light - Buzzer	bulb or LED-bulb	SLP
Steady light - Buzzer light and tone separately addressable		SLD
Flashing light - Buzzer		SBP
Strobe light - Buzzer	xenon tube	SFP
LED-Steady light - Buzzer	LED	SCP
LED-Flashing light - Buzzer		SAP
LED-Rotating light - Buzzer		SRP
PIEZO BUZZER MODULES	Volume	
Continuous or pulsing tone and sound pressure selectable with DIP switches	85-107 dB	SDE
		SPE
Continuous and pulsing tone externally switchable, sound pressure selectable with DIP switches		SDZ
		SPZ
ELECTRONIC SOUNDER MODULES (15 tone types available – pls. refer to sound table page 47.)		
Tone type selectable by DIP switch	64-103 dB	STE
2 tone types externally switchable		STZ

continuous or pulsing tone and volume (92-107 dB) selectable by DIP switch



BASES



horizontal
BMW



vertical
BMV



on aluminium tube with plastic foot
BMR
(Use with pole connection boxes, page 50)



BSR



on aluminium tube for horizontal mounting with screw
BWS



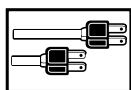
BWS + BSS



set for vertical mounting
BSS
(for BWS)



on aluminium tube with foot adapter for quick mounting
BFR



Technical data

for all modul SIGNAL70 modules/products:

Housing material	polycarbonate, grey RAL 7035, black RAL 9005, silver	Temperature range	-25 °C bis +70 °C
Lens material	polycarbonate		
Lens colours	amber, red, clear, blue, green, yellow		
Terminals	up to 2,5 mm ²		

Light modules		SLL	SLB	SLF	SDC	SDA	SDR	
Bulb W		7 W						
Socket (BA 15 d)		X						
Flashing-/Strobe frequency			2 Hz	1,4 Hz			2 Hz	
Strobe energy				3 J				
Lifetime				~ 5 Mio. flashes				
Light source LED						X		
Light emission				360°				
Light type		steady light	flashing light	strobe light	LED-steady light	LED-flashing light	LED-rotating light	
Leakage		3						
Nominal current	12 V	max. 7 W		285 mA	120 mA			
	24 V			180 mA			70 mA	
	110/120 V			50 mA			43 mA	
	230/240 V			35 mA			41 mA	
Protection class				IP 65, UL type 4, 4X, 13				
Weight				100 g				
Light Buzzer modules		SLP	SLD	SBP	SFP	SCP	SAP	SRP
Bulb		7 W						
Socket (BA15 d)		X						
Flashing-/Strobe frequency			2 Hz	1,4 Hz				
Strobe energy				3 J				
Light source LED						X		
Light emission				360°				
Light type		steady light	flashing light	strobe light	LED-steady l.	LED-flashing l.	LED-rotating light	
Leakage		3 mA						
Nominal current	12 V	5 W, 27 mA		310 mA	150 mA			
	24 V	7 W, 45 mA		220 mA	110 mA			
	110/120 V	7 W, 43 mA		93 mA	64 mA			
	230/240 V	7 W, 40 mA		75 mA	61 mA			
Tone-/light-operation		synchronous	separate control	synchronous	synchronous	synchronous	synchronous	synchronous
Tone type				continuous- or pulsing tone (selectable by DIP switch)				
Tone frequency				3.300 Hz				
Sound pressure (dB)				92 / 107 dB (selectable by DIP switch)				
Protection class				IP 65, UL type 4, 4X, 13				
Weight				130 g				
Piezo Buzzer and Sounder modules		SDE	SPE	SDZ	SPZ	STE	STZ	
Tone type				continuous and pulsing tone		15 tone types		
Tone frequency				3.300 Hz		100 - 1.500 Hz		
Sound pressure (dB)		92 / 107 dB	85 / 97 dB	92 / 107 dB	85 / 97 dB	64 - 103 dB potentiometer		
Leakage				3 mA				
Nominal current	12 V			27 mA	35 mA			
	24 V			45 mA	75 mA			
	110/120 V			43 mA	65 mA			
	230/240 V			40 mA	65 mA			
Tone selection		DIP switch		externally switchable		DIP switch		
Protection class		IP 65, UL type 4, 4X, 13	IP 54, UL type 12	IP 65, UL type 4, 4X, 13	IP 54, UL type 12	IP 54, UL type 12		
Weight		90 g	100 g		110 g	140 g		
Weight (Bases)				pls. refer to general weight list				



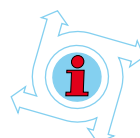
Tone table								
STE (tone 1 only)						STZ (tone 1 + 2)		
DIP switch	Tone 1	Speed	Tone frequency (Hz)		Volume	Tone 2		
			lower	upper				
	Triangle tone		7-22 Hz	500 Hz	1.500 Hz	80-100 dB(A)	Continuous tone	
	Continuous tone		-	■	500-1.500 Hz	83-103 dB(A)	Changing tone	
	Continuous tone		-	500-1.000 Hz	■	83-103 dB(A)	Interrupted tone	
	Interrupted tone		0.5-1.5 Hz	■	500-1.500 Hz	83-103 dB(A)	Three tone gong	
	Interrupted tone		0.5-1.5 Hz	500-1.500 Hz	■	83-103 dB(A)	Siren (non repeating)	
	Changing tone		0.5-1.5 Hz	500-1.500 Hz	500-1.500 Hz	83-103 dB(A)	DIN Emergency Signal	DIN 33404
	Saw tooth tone ascending		0.5-1.5 Hz	500-1.500 Hz	500-1.500 Hz	83-103 dB(A)	Continuous tone	
	Saw tooth tone descending		0.5-1.5 Hz	500-1.500 Hz	500-1.500 Hz	83-103 dB(A)	Interrupted tone	
	Sinus wave tone		0.5-1.5 Hz	500-1.500 Hz	500-1.500 Hz	82-102 dB(A)	DIN Emergency Signal	DIN 33404
	DIN Emergency Signal	DIN 33404	1 Hz	500 Hz	1.200 Hz	82-102 dB(A)	Three tone gong (n. repeat.)	
	Siren (non repeating)		2-4 s	1.500 Hz	500 Hz	83-103 dB(A)	Triangle tone	
	Signal horn (Continuous tone)		-	100-350 Hz	■	64-80 dB(A)	Continuous tone	
	Three tone gong		2-4 s	660-550-440 Hz		76-95 dB(A)	Sinus wave tone	
	Two tone gong		2-3 s	550-440 Hz		75-93 dB(A)	Two tone gong (n. repeat.)	
	Gong		1-3 s	500-1.500 Hz	■	75-93 dB(A)	Continuous tone	

■ set to maximum (+)



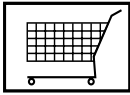
Order data

Type	Denomination	Light options		Tone options		Order No.			Nominal voltage (V)
		Bulb	LED-bulb	Tone types	Sound pressure	Housing grey	Housing black	Housing silver	
Light-Modules									
SLL	Steady light	GL	LLL, LLB			210 10C 900	210 50C 900	210 80C 900	to 250 V AC/DC
SLB	Flashing light	GL	LLL			220 10C 405	220 50C 405	220 80C 405	12-24 V AC/DC
						220 10C 310	220 50C 310	220 80C 310	110/120 V AC
						220 10C 313	220 50C 313	220 80C 313	230/240 V AC
SLF	Strobe light	3 J. xenon tube				230 10C 405	230 50C 405	230 80C 405	12-24 V AC/DC
						230 10C 310	230 50C 310	230 80C 310	110/120 V AC
						230 10C 313	230 50C 313	230 80C 313	230/240 V AC
SDC	LED-Steady light					211 10C 404	211 50C 404	211 80C 404	12 V AC/DC
						211 10C 405	211 50C 405	211 80C 405	24 V AC/DC
						211 10C 310	211 50C 310	211 80C 310	110/120 V AC
						211 10C 313	211 50C 313	211 80C 313	230/240 V AC
SDA	LED-Flashing light	integrated LED				221 10C 404	221 50C 404	221 80C 404	12 V AC/DC
						221 10C 405	221 50C 405	221 80C 405	24 V AC/DC
						221 10C 310	221 50C 310	221 80C 310	110/120 V AC
						221 10C 313	221 50C 313	221 80C 313	230/240 V AC
SDR	LED-Rotating light					231 10C 404	231 50C 404	231 80C 404	12 V AC/DC
						231 10C 405	231 50C 405	231 80C 405	24 V AC/DC
						231 10C 310	231 50C 310	231 80C 310	110/120 V AC
						231 10C 313	231 50C 313	231 80C 313	230/240 V AC
Light-Sound-Modules									
SLP	Steady light - Buzzer	GL	LLL, LLB	<input type="checkbox"/> conti. <input type="checkbox"/> ~ 107 dB <input type="checkbox"/> pulsing <input type="checkbox"/> ~ 92 dB		250 10C 404	250 50C 404	250 80C 404	12 V AC/DC
						250 10C 405	250 50C 405	250 80C 405	24 V AC/DC
						250 10C 310	250 50C 310	250 80C 310	110/120 V AC
						250 10C 313	250 50C 313	250 80C 313	230/240 V AC
SLD	Steady light - Buzzer Light/Tone separately switchable 2 required positions	GL	LLL, LLB	<input type="checkbox"/> conti. <input type="checkbox"/> ~ 107 dB <input type="checkbox"/> pulsing <input type="checkbox"/> ~ 92 dB		212 10C 404	212 50C 404	212 80C 404	12 V AC/DC
						212 10C 405	212 50C 405	212 80C 405	24 V AC/DC
						212 10C 310	212 50C 310	212 80C 310	110/120 V AC
						212 10C 313	212 50C 313	212 80C 313	230/240 V AC
SBP	Flashing light - Buzzer	GL	LLL	<input type="checkbox"/> conti. <input type="checkbox"/> ~ 107 dB <input type="checkbox"/> pulsing <input type="checkbox"/> ~ 92 dB		260 10C 404	260 50C 404	260 80C 404	12 V AC/DC
						260 10C 405	260 50C 405	260 80C 405	24 V AC/DC
						260 10C 310	260 50C 310	260 80C 310	110/120 V AC
						260 10C 313	260 50C 313	260 80C 313	230/240 V AC
SFP	Strobe light - Buzzer	3 J. xenon tube		<input type="checkbox"/> conti. <input type="checkbox"/> ~ 107 dB <input type="checkbox"/> pulsing <input type="checkbox"/> ~ 92 dB		270 10C 404	270 50C 404	270 80C 404	12 V AC/DC
						270 10C 405	270 50C 405	270 80C 405	24 V AC/DC
						270 10C 310	270 50C 310	270 80C 310	110/120 V AC
						270 10C 313	270 50C 313	270 80C 313	230/240 V AC
SCP	LED-Steady light - Buzzer			<input type="checkbox"/> conti. <input type="checkbox"/> ~ 107 dB <input type="checkbox"/> pulsing <input type="checkbox"/> ~ 92 dB		251 10C 404	251 50C 404	251 80C 404	12 V AC/DC
						251 10C 405	251 50C 405	251 80C 405	24 V AC/DC
						251 10C 310	251 50C 310	251 80C 310	110/120 V AC
						251 10C 313	251 50C 313	251 80C 313	230/240 V AC
SAP	LED-Flashing light - Buzzer	integrated LED		<input type="checkbox"/> conti. <input type="checkbox"/> ~ 107 dB <input type="checkbox"/> pulsing <input type="checkbox"/> ~ 92 dB		261 10C 404	261 50C 404	261 80C 404	12 V AC/DC
						261 10C 405	261 50C 405	261 80C 405	24 V AC/DC
						261 10C 310	261 50C 310	261 80C 310	110/120 V AC
						261 10C 313	261 50C 313	261 80C 313	230/240 V AC
SRP	LED-Rotating light - Buzzer			<input type="checkbox"/> conti. <input type="checkbox"/> ~ 107 dB <input type="checkbox"/> pulsing <input type="checkbox"/> ~ 92 dB		271 10C 404	271 50C 404	271 80C 404	12 V AC/DC
						271 10C 405	271 50C 405	271 80C 405	24 V AC/DC
						271 10C 310	271 50C 310	271 80C 310	110/120 V AC
						271 10C 313	271 50C 313	271 80C 313	230/240 V AC



NOTE:

Light sources have to be ordered separately (pls. refer to order data- accessories).



Order data

Type	Denomination	Tone options		Order No.			Nominal voltage (V)
		Tone type	Sound pressure	Housing grey	Housing black	Housing silver	
Sound-Modules							
SDE	Piezo Buzzer, IP 65 tone type and sound pressure selectable by DIP switch	<input type="checkbox"/> continuous	<input type="checkbox"/> ~ 107 dB	247 100 404	247 500 404	247 800 404	12 V AC/DC
		<input type="checkbox"/> pulsing	<input type="checkbox"/> ~ 92 dB	247 100 405	247 500 405	247 800 405	24 V AC/DC
		<input type="checkbox"/> continuous	<input type="checkbox"/> ~ 97 dB	247 100 310	247 500 310	247 800 310	110/120 V AC
		<input type="checkbox"/> pulsing	<input type="checkbox"/> ~ 85 dB	247 100 313	247 500 313	247 800 313	230/240 V AC
SPE	Piezo Buzzer, IP 54 tone type and sound pressure selectable by DIP switch	<input type="checkbox"/> continuous	<input type="checkbox"/> ~ 97 dB	243 100 404	243 500 404	243 800 404	12 V AC/DC
		<input type="checkbox"/> pulsing	<input type="checkbox"/> ~ 85 dB	243 100 405	243 500 405	243 800 405	24 V AC/DC
		<input type="checkbox"/> continuous	<input type="checkbox"/> ~ 97 dB	243 100 310	243 500 310	243 800 310	110/120 V AC
		<input type="checkbox"/> pulsing	<input type="checkbox"/> ~ 85 dB	243 100 313	243 500 313	243 800 313	230/240 V AC
SDZ	Piezo Buzzer, IP 65 tone type externally switchable sound pressure adjustable by DIP switch 2 required positions	continuous and pulsing	<input type="checkbox"/> ~ 107 dB	248 100 404	248 500 404	248 800 404	12 V AC/DC
			<input type="checkbox"/> ~ 92 dB	248 100 405	248 500 405	248 800 405	24 V AC/DC
			<input type="checkbox"/> ~ 97 dB	248 100 310	248 500 310	248 800 310	110/120 V AC
SPZ	Piezo Buzzer, IP 54 tone type externally switchable sound pressure adjustable by DIP switch 2 required positions	continuous and pulsing	<input type="checkbox"/> ~ 97 dB	244 100 404	244 500 404	244 800 404	12 V AC/DC
			<input type="checkbox"/> ~ 85 dB	244 100 405	244 500 405	244 800 405	24 V AC/DC
			<input type="checkbox"/> ~ 92 dB	244 100 310	244 500 310	244 800 310	110/120 V AC
Electronic Sounder-Modules							
STE	Electronic Sounder, IP 54 tone type selectable by DIP switch, upper/lower frequency and speed infinitely variable	15 tone types see sound table	64-103 dB	241 100 405	241 500 405	241 800 405	12-24 V AC/DC
				241 100 310	241 500 310	241 800 310	110/120 V AC
				241 100 313	241 500 313	241 800 313	230/240 V AC
STZ	Electronic Sounder, IP 54 2 tone types externally switchable, upper/lower frequency and speed infinitely variable	15 tone types see sound table	64-103 dB	242 100 405	242 500 405	242 800 405	12-24 V AC/DC
				242 100 310	242 500 310	242 800 310	110/120 V AC
				242 100 313	242 500 313	242 800 313	230/240 V AC

ORDER DATA ACCESSORIES		
Type	Nominal Voltage (V)	Order No.
GL01	12 V 5 W	890 010 904
GL02	24 V 7 W	890 010 905
GL03	48 V 7 W	890 010 908
GL04	60 V 7 W	890 010 909
GL05	110/120 V 7 W	890 010 910
GL06	230/240 V 7 W	890 010 913

Type	Nominal voltage (V)	Order No.
LED-Lampe BA15d		
LLL	12 V AC/DC	893 00C 404
	24 V AC/DC	893 00C 405
	48 V AC/DC	893 00C 408
	110/120 V AC	893 00C 310
	230/240 V AC	893 00C 313
Flashing light		
LLB	12 V AC/DC	893 01C 404
	24 V AC/DC	893 01C 405
	48 V AC/DC	893 01C 408
	110/120 V AC	893 01C 310
	230/240 V AC	893 01C 313

Colour code for lens C

1	amber	5	blue
2	red	6	green
4	clear	7	yellow

Length code for tubes L

1	50 mm (not for BFR)	5	500 mm
2	100 mm	6	600 mm
3	250 mm	7	800 mm
4	400 mm		



Order data

Type	Bases	Order No.		
		Housing grey	Housing black	Housing silver
BMW	Base for horizontal mounting	200 100 900	200 500 900	200 810 900
BMV	Base for vertical mounting	200 200 900	200 600 900	200 820 900
BMR	Pole mount base on aluminium tube with plastic foot	200 30L 900	200 70L 900	200 80L 900
BSR	Pole mount base on stainless steel tube with zinc die-cast foot, powder coated	200 31L 900	200 71L 900	200 81L 900
BWS	Pole mount base for horizontal mounting with screw	200 33L 900	200 73L 900	200 83L 900
BSS	Set for vertical mounting (for BWS)	200 400 900	200 800 900	
BFR	Pole mount base on aluminium tube with foot adapter for quick mounting	200 34L 900	200 74L 900	200 84L 900
	Cap - is automatically included with each base			

Signal Tower moduSIGNAL70

AS-INTERFACE

The integration of the moduSIGNAL70 signal tower into AS-Interface field bus systems is easily possible with the new AS-Interface module type BAZ. The new AS-Interface module BAZ is optionally available with standard-slave or the new A/B technique.

The AS-Interface module with standard slave can address up to 31 modules and maximum 4 modules on the signal tower. The option with A/B technique is able to address up to 62 modules and 3 or 4 modules on the signal tower.

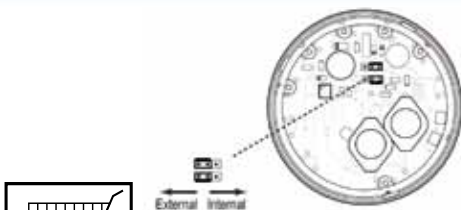
When using internal power supply from the bus system maximum 200 mA are available for the signal tower elements.



Features

- LED-status indicator – check routine
- modules for 31 or 62 addresses
- available with standard or A/B technique
- internal (via bus system) or external power supply selectable
- easy integration of signal tower as actor into the actor-sensor-interface system BAZ-module is mounted as first module directly onto the signal tower base
- significantly reduced wiring work

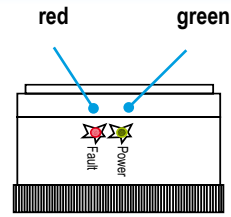
Selection of module powering



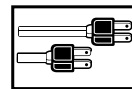
Order Data

Type	Description	Order-Nr.
BAZ	AS-Interf. module for 31 slaves - up to 3 signal tower modules	280 500 510
	AS-Interf. module for 62 slaves - up to 3 signal tower modules	280 500 000
	AS-Interf. module for 62 slaves - up to 4 signal tower modules	280 500 100

Status indication



green	red	Status
●	○	Normal operation
●	●	No data exchange
★	●	No data exchange, Slave-adress = 0
★	★	Peripheral fault, overcurrent or low voltage on the output



Technical data

Type	BAZ		
order number	280 500 510	280 500 000	280 500 100
number of slaves	31	62	62
number of modules	4	3	4
IO-Code	8	7	7
ID-Code	F	A	A
ID2-Code		E	7
Datenbits	D0...Modul 0		
	D1...Modul 1		
	D2...Modul 2		
	D3...Modul 3		
current from A S-Interface line	max. 250 mA		
temperature range	-20° bis +50° C		
protection class	IP 65		
AS-Interface voltage range	26,5 - 31,6 V		
module power from the AS-Interface line	max. 200 mA		
external power supply	PELV, 24 V DC +/- 10%, max. 300 mA per Modul		
housing material	polycarbonate, black		

ACCESSORIES POLE CONNECTION BOXES

For additional installation possibilities of pole mount assemblies BMR:

- Surface cable conduits in protection class IP 65 – horizontally or vertically
- Model with magnetic base for mobile mounting, signalling device in protection class IP 65 on metal surfaces

Code for thread

1	M 20	3	PG 16
2	NPT 1/2"		

BDW



BDV

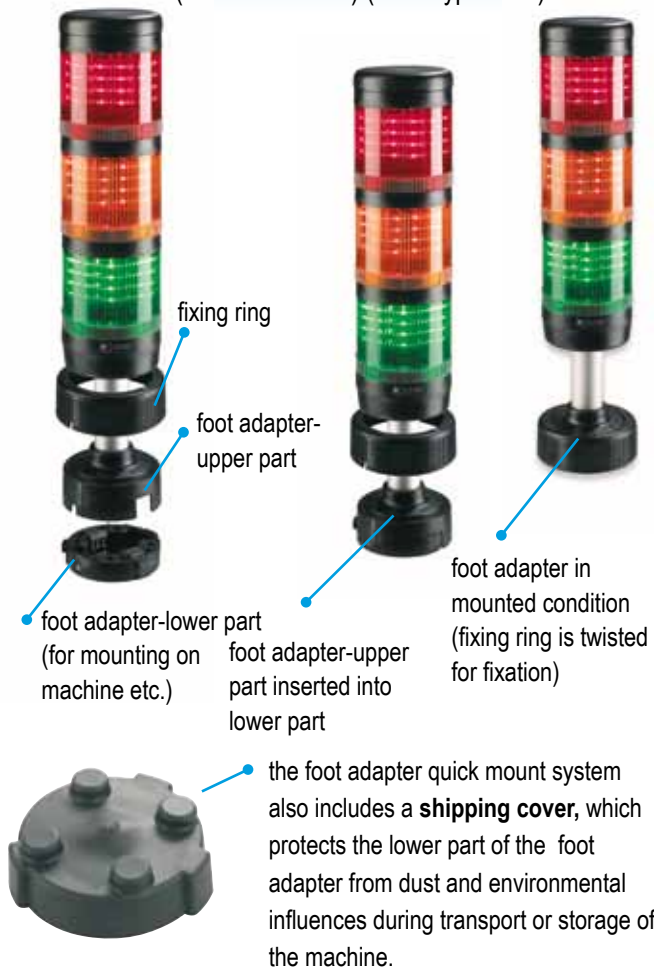


BDM



Type	Pole connection box	Order No.			Weight (g)
		Housing grey	Housing black	Housing silver	
BDW	for horizontal mounting	841 10T 900	841 50T 900	841 80T 900	90
BDV	for vertical mounting	841 11T 900	841 51T 900	841 81T 900	110
BDM	for magnetic mounting	841 12T 900	841 52T 900	841 82T 900	330

QUICK MOUNT SYSTEM „FOOT ADAPTER“ (Pat.No. 501053) (Base type BFR)



Function

- ▶ the signal tower with pole mount base on aluminium tube with foot adapter for quick mounting (BFR) is electrically pre-wired
- ▶ the foot adapter lower part is mounted on the machine etc. and electrically connected
- ▶ the signal tower with foot adapter upper part is inserted into the lower part and firmly mounted by twisting the fixing ring
- ▶ the signal tower is immediately fully operable

Advantages

- ▶ simple and cost saving disassembly of signal tower for transport of machine etc.
- ▶ quick cost saving installation of complete signal tower at client
- ▶ immediate function, no electrical connection required at client
- ▶ safe transport of signal tower (separately packed)
- ▶ additional locking option of signal tower with safety screw that cannot be lost
- ▶ signal tower fits only in one position onto the foot adapter lower part – no wrong installation of signal tower possible

How to order Signal Tower modul SIGNAL70

Configuration 24 V AC/DC	Position	Type	Order No. Catalogue	correct order no.
Steady light blue	5	SLL	210 50C 900	210 505 900
Steady light amber	4	SLL	210 50C 900	210 501 900
Steady light clear	3	SLL	210 50C 900	210 504 900
Steady light red	2	SLL	210 50C 900	210 502 900
Steady light green	1	SLL	210 50C 900	210 506 900
Base for horizontal mounting		BMW	200 500 900	200 500 900
5 x bulb		GL02	890 010 905	890 010 905

Configuration 230 V AC	Position	Type	Order No. Catalogue	correct order no.
Electronic Sounder module 15 tone types	3	STE	241 100 313	241 100 313
LED-flashing light red	2	SDA	221 10C 313	221 102 313
LED-steady l. green	1	SDC	211 10C 313	211 106 313
Base for vertical mounting		BMV	200 200 900	200 200 900

Configuration 230 V AC	Position	Type	Order No. Catalogue	correct order no.
Flashing module, red	1	SBP	260 50C 313	260 502 313
Base for horizontal mounting		BMW	200 500 900	200 500 900
1 x bulb		GL06	890 010 913	890 010 913

Configuration 24 V AC/DC	Position	Type	Order No. Catalogue	correct order no.
LED-rotating light-buzzer module, red	1	SRP	271 50C 405	271 502 405
Pole mount base on stainless steel tube with zinc die cast foot, powder coated, 100 mm long		BSR	200 71L 900	200 712 900

Configuration 24 V AC/DC	Position	Type	Order No. Catalogue	correct order no.
Strobe light blue	1	SLF	230 10C 405	230 105 405
Pole mount base on aluminium tube with plastic foot, 100 mm long		BMR	200 30L 900	200 302 900
Pole connection box for horizontal mounting		BDW	841 10T 900	841 101 900

