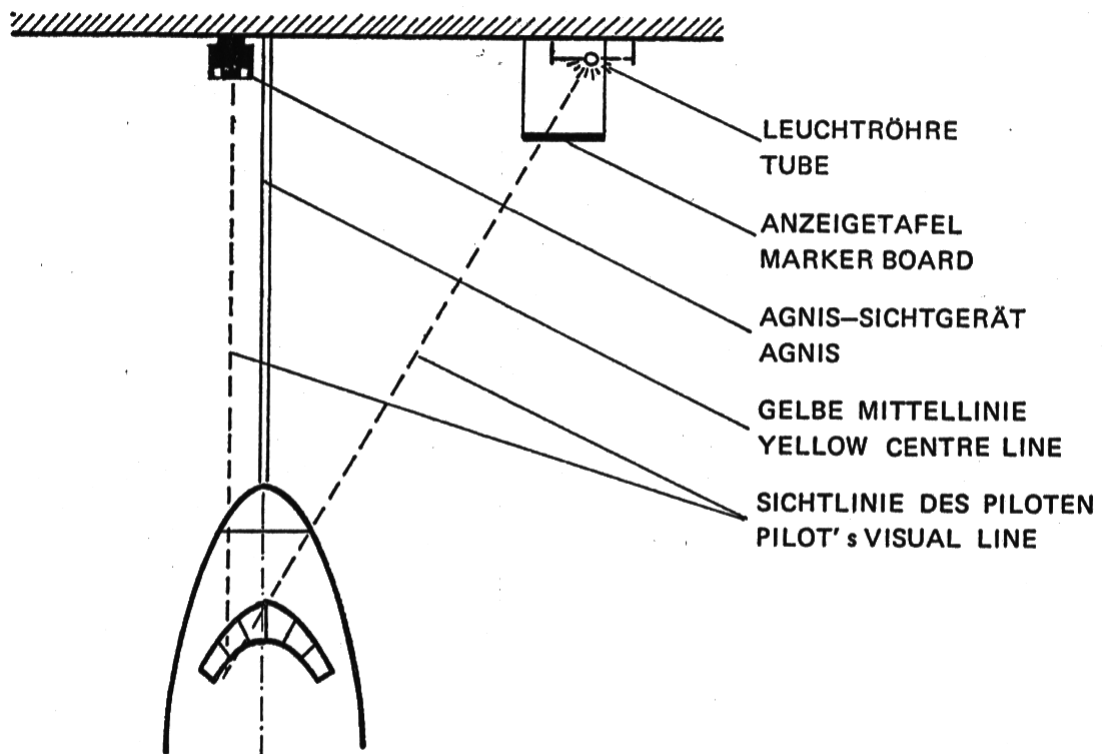


Centre Line Guidance System

In absence of Follow-Me vehicle or marshallers, an Aircraft Docking System requires a destination Guidance at airports providing for nose-in stands. This guidance enables a pilot to arrive exactly at the aircraft's predestinated parking position. Our AGNIS system comprises of the following components:

Centre Line Guidance Element
 Stop Display
 Control and Supervision unit



Centre line guidance

The Guidance element/device extends the centre line navigation of the aircraft. The aircraft is directed from the taxi way along the yellow centre line to approach its final parking position along the taxiing line by the guidance system.

The aircraft has to be guided in such a way that both slots of the AGNIS system show a GREEN light. Any deviations to the left or right must always be corrected in direction to this GREEN light.

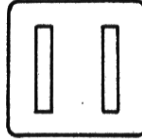
Rot Grün
Red Green



Flugzeug links der Mittellinie
Korrektur nach GRÜN (rechts)

Aircraft left of center line
turn towards green (right)

Grün Green
Grün Green



Flugzeug auf der Mittellinie

Aircraft on center line

Grün Rot
Green Red

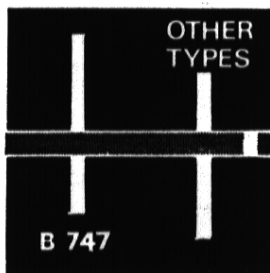


Flugzeug rechts der Mittellinie
Korrektur nach GRÜN (links)

Aircraft right of center line
turn towards green (left)

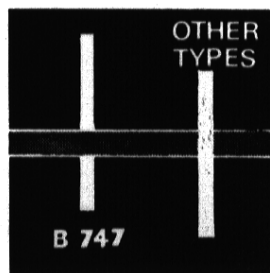
Full Stop

With the aid of stop-display the aircraft will be halted at its predestinated parking position.



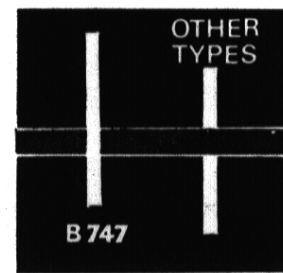
Alle Typen weiter rollen

All types continue taxiing



Alle Typen mit Ausnahme der
B 747 stop

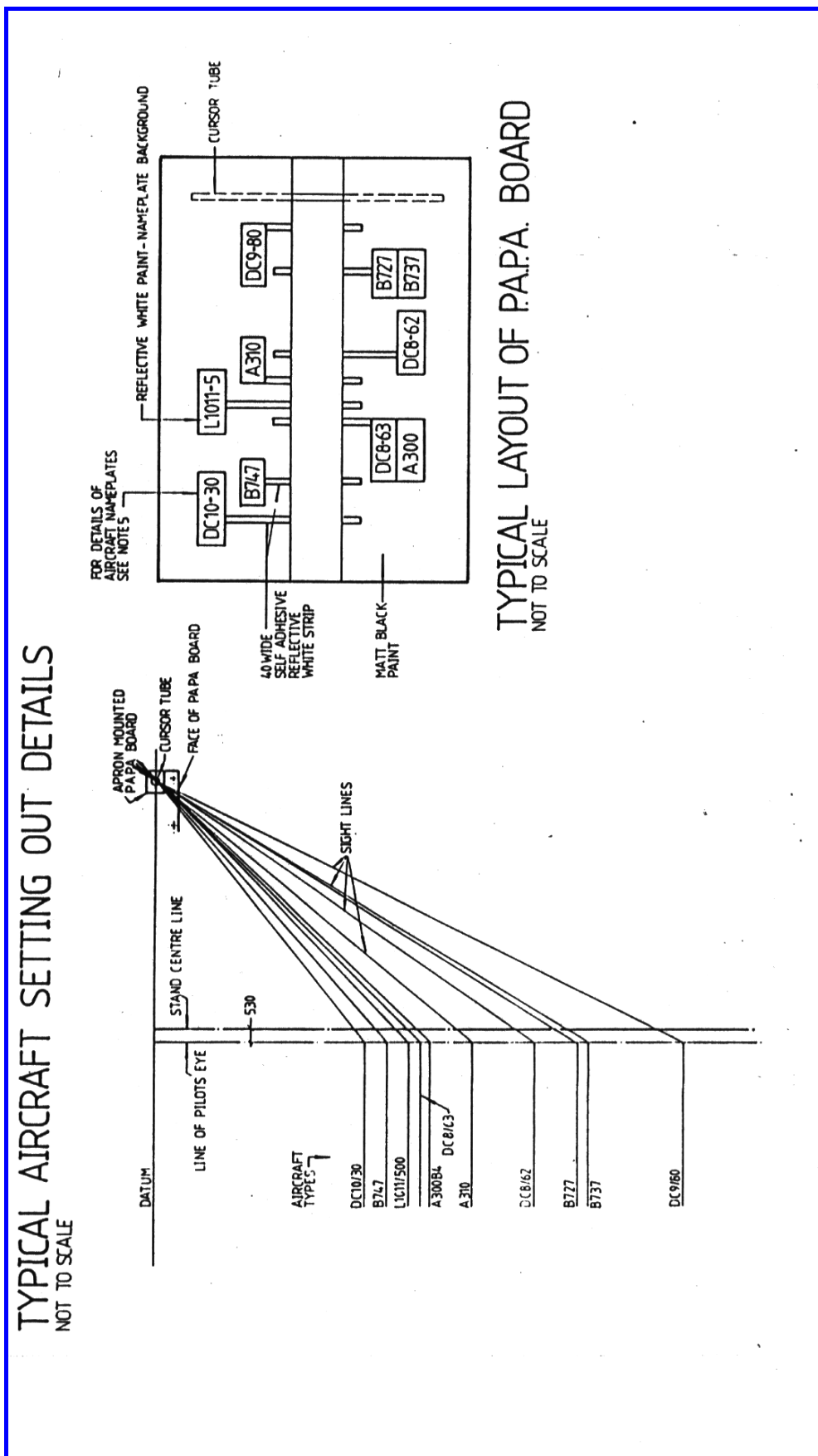
All types with exception of
B 747 stop



B 747 stop

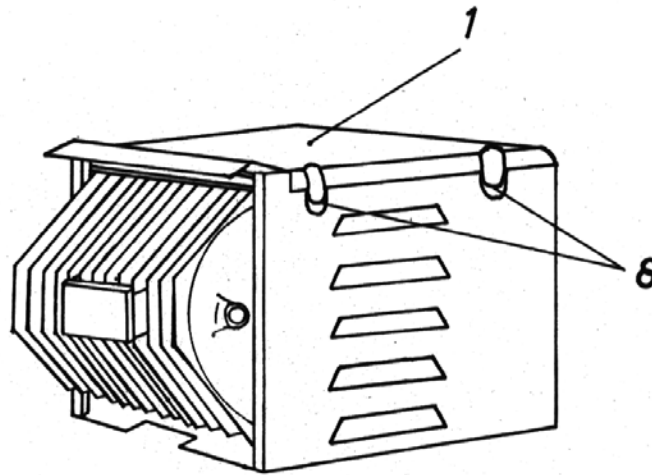
B 747 stop

The aircraft has reached its predestinated parking position if the light tube is vertically aligned with the marker line of the matching aircraft type.

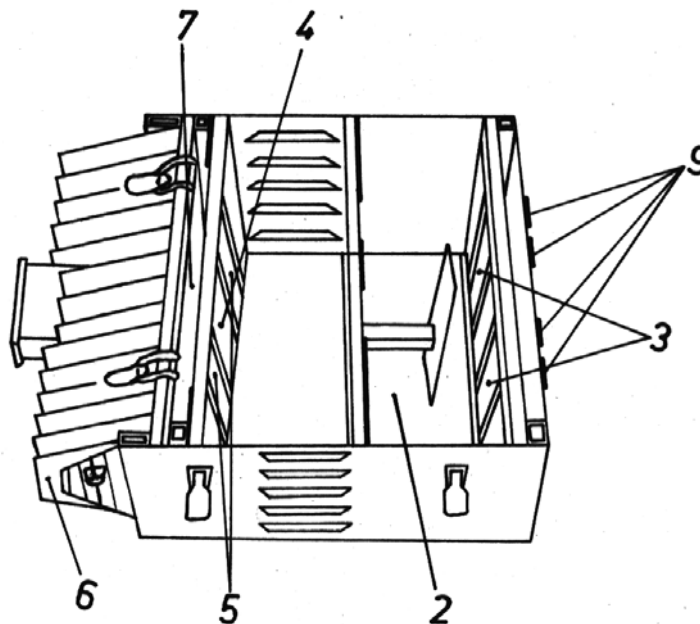


Centre line guidance device

The guidance device is a visual installation to guide an aircraft along the centre line (taxiing line) to its parking position in front of the building or in front of an AGNIS POLE. Attached to the building's facade, this visual device shows in the pilot's direction and serves him as a guiding aid



The guidance device is housed in a steel-sheet case [2], hot-galvanized, provided with WashPrimer, and a lustreless black powder coating. The lightning unit is a commercially available 1000 Watt halogen lamp made of aluminium [6] according to protection type IP55.



The integrated optical filters consist of traffic-signal glass [4 + 5] and special diffusion panes made of cathedral-glass [3]. The cover [1] is held by 4 quick-locks [8] which allow for an easy replacement of the filters and the halogen burner. On the front side there are 2 light ports [9] which emit the colours RED and GREEN according to the angle of view of the bearing given.

Functionality:

A halogen lamp of 1000 Watt generates the light required for display in the rear end of the device. Along the beam canal this light shines through an array of two GREEN and one RED filters and leaves shutter controlled through diffusion panes its light ports. Depending on the pilot's view, the light beam is controlled to show 2 GREEN lights provided his position matches a straight line under a 0° angle to the centre of the device's front side. On changing his position by turning left or right, his current view shows a passively induced RED bar due to his lateral deviation.

A halogen lamp of 1000 Watt generates the light required for display in the rear end of the device. Along the beam canal this light shines through an array of two GREEN and one RED filters and leaves shutter controlled through diffusion panes its light ports. Depending on the pilot's view, the light beam is controlled to show 2 GREEN lights provided his position matches a straight line under a 0° angle to the centre of the device's front side. On changing his position by turning left or right, his current view shows a passively induced RED bar due to his lateral deviation.

Visual sensitivity scaling: from shutter-opening and relative distance from device

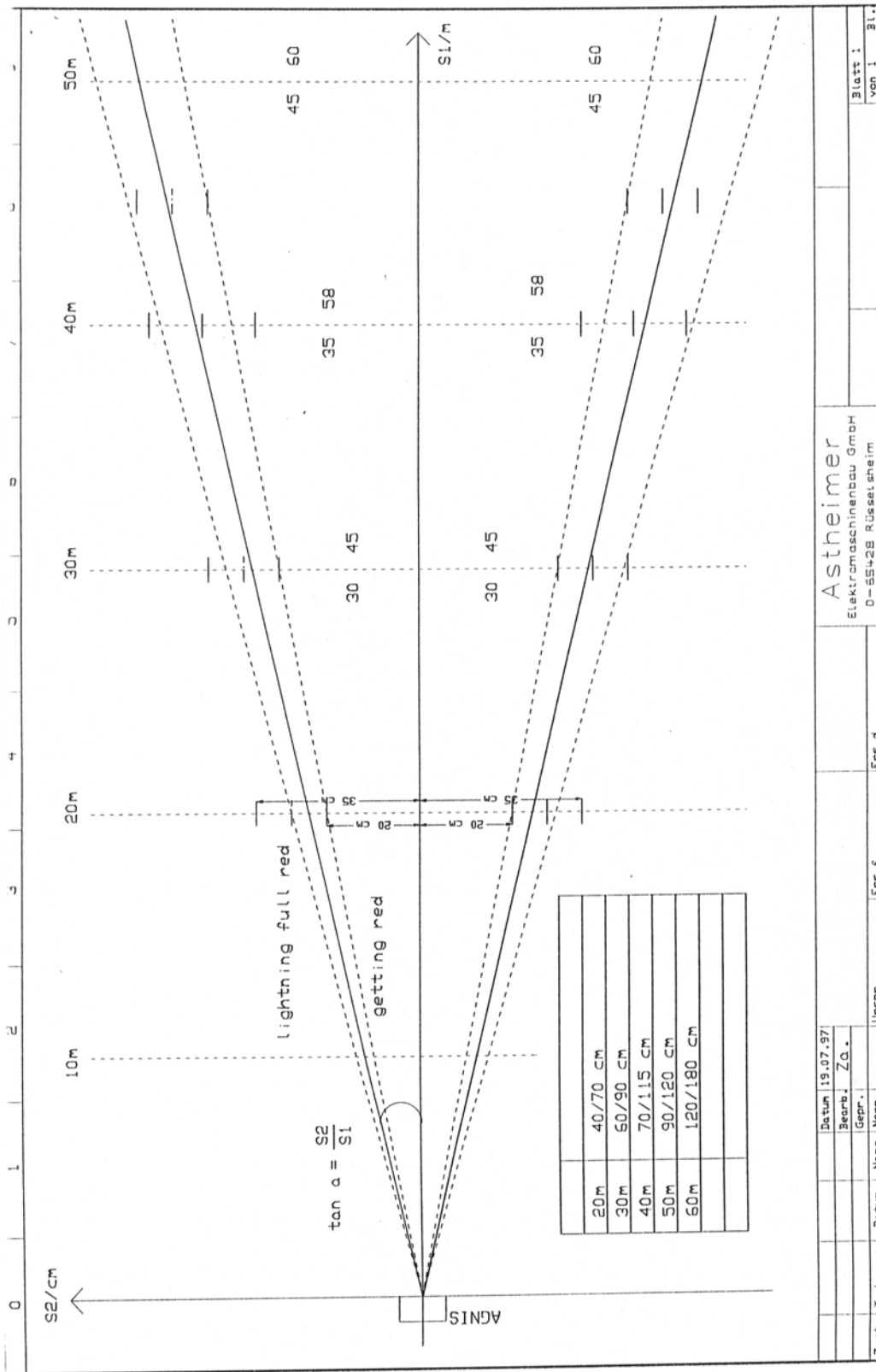
dist./[m]	5	10	15	20	25	30	35	40	45	55	
81/13 AE/[cm]	10	24	40	55	65	94	106	116	130	150	
81/13 kpl.ROT/[cm]		33	65	85]	110	138	160	170	195	218	240
79/13 AE/[cm]		20	29	43	54	69	90	104	114	135	
79/13 kpl.ROT/[cm]		38	62	77	92	115	130	154	170	197	240
75/13 AE/[cm]				20	30	40	50	60	65	70	
75/13 kpl.ROT/[cm]			44	64	72	90	100	110	135	150	170
79/14 AE/[cm]		26	37	43	67	79	92	108	120	160	
79/14 kpl.ROT/[cm]		43	70	98	126	140	163	197	216	229	274
77/14 AE/[cm]			19	42	58	66	80	97	104	145	
77/14 kpl.ROT/[cm]		40	62	81	100	124	147	170	188	200	236
77/15 AE/[cm]		20	25	40	53	78	103	114	131	140	
77/15 kpl.ROT/[cm]		51	73	90	114	137	165	194	200	228	260
75/16 AE/[cm]				27	32	40	50	60	70	90	
75/16 kpl.ROT/[cm]		50	80	108	118	140	154	180	195	206	244

Bedeutung der Begriffe: 75/13 AE

Bei Einstellung der Blenden von Mittenabstnd 75 mm und Öffnungsbreite 13 mm zeigt AE die Abweichung seitlich vom Gerät bei der jeweiligen Entfernung vom Gerät, bei der die Öffnungen gerade beginnen, dir Farbe von GRÜN nach ROT zu wechseln.

75/13 kpl.ROT

Bei Einstellung der Blenden von Mittenabstnd 75 mm und Öffnungsbreite 13 mm zeigt kpl.ROT die Abweichung seitlich vom Gerät bei der jeweiligen Entfernung vom Gerät, bei der die Öffnungen ein sattes komplettes ROT zeigen.



Zust.	Änderung	Datum	Name	Norm
			Urspr.	Ers.f
			Ers.f	Ers.f
Astheimer Elektromaschinenbau GmbH D-65428 Rüsselsheim			Blatt 1 von 1 Bl.	
		Datum 19.07.97		
		Bearb. Z.G.		
		Gepr.		

Technical data:

Measurement casing	Width 400 mm x height 340 mm x length 570 mm
colour	steel-sheets, hot-galvanized and powder-coated lustreless black
connection	220 Volt, 1000 Watt with 1.5 m silicon power cord and CEE plug 3 x 16 Ampere
Shutters	2 pieces GREEN 295 x 50 mm
	1 piece RED 295 x 80 mm
Diffusion panes	2 pieces Cathedral 295 x 50 mm

Spare parts:

Seq. No.	Piece	Description	Type	Measurement
1	1	cover		
2	1	beam canal case		
3	2	Listral glass	white	295 x 50 x 4
4	1	Signal glass	R 30701	295 x 80 x 3
5	2	Signal glass	BG 40706	295 x 50 x 3
6	1	Halogen spotlight	AEG 821 155356	
7	1	Halogen lamp	So7s-15 - 1000 W	
8	4	locking	SpV 1919	
9	1	Shutters		287 x 50/30 x 1

Control and Supervision unit

The Control and Supervision unit manages the switching-on/off of all optical units such as Centre Line Guidance system and Stop Display plus optionally Position panel and StopShortBoard, and monitors their status during operation. The switching- and supervisory functions can be carried out directly with the unit itself at a high voltage user-panel (not integral part of unit) or across a 24 Volt control connection.

User-panel at the door:	SWITCH ON	Flouresc. Button 1	ON
	SWITCH OFF Button	0	OFF
	TIME's RUNNING	Flouresc. Button 1	ON
	SUPERVISION 1000 W	Control lamp GREEN	for GO
	SUPERVISION 1000 W	Control lamp RED	for GO NO
	SUPERVISION lightning	Control lamp GREEN	for GO
	SUPERVISION lightning	Control lamp RED	for GO NO
	SUPERVISION Pos. Panel (alternative)	GREEN	for GO
	SUPERVISION Pos. Panel (alternative)	RED	for GO NO
	SUPERVISION Stop Display	Control lamp GREEN	for GO
	SUPERVISION Stop Display	Control lamp RED	for GO NO
	SUPERVISION Circle light (alternative)	GREEN	for GO
	SUPERVISION Circle light (alternative)	RED	for GO NO

alternative means for remote control panels

A Remote-User panel - which can be connected to a clamping board inside the unit and which operates independently from the main User-panel - can be made identical to the main User-panel.

This Remote-User panel can be integrated into an existing switch panel, for example a bridge. Connection can be done from junction to clamping board switch cabinet by using compatible connector pairs. Installation and on both sides can be connexed electrically removable.

Simultaneously the following functionality can be connected in addtion:

SUPERVISION 1000 W	Control lamp	GREEN
SUPERVISION 1000 W	Control lamp	RED
SUPERVISION lightning	Control lamp	GREEN
SUPERVISION lightning	Control lamp	RED
SUPERVISION Pos. Panel (alternative)		GREEN
SUPERVISION Pos. Panel (alternative)		RED
SUPERVISION Stop Display	Control lamp	GREEN
SUPERVISION Stop Display	Control lamp	RED
SUPERVISION Circle light (alternative)		GREEN
SUPERVISION Circle light (alternative)		RED

The colour GREEN means that the control lamp is operational, RED means that the control lamp is non-operational.



A control user panel working according to the control voltage of the used SPS (generally operating with 24 Volt d.c. voltage) has the following functionality:

SWITCH ON	24 Volt d.c. voltage impulse
SWITCH OFF	24 Volt d.c. voltage impulse

The supervisory functionality of each lamp can be utilized along with this control unit by using potential-free contacts.

Technical data:

Main Unit

Measurements	Width 500 mm x height 500 mm x length 300 mm
Connection	220 Volt a-c voltage
Output	via a 66 pole clamping board inside device
	220 Volt for Centre line guidance device
	220 Volt for lightning display
	(220 Volt for lightning Position Panel)
	(220 Volt for Circle light)
	200 Volt for Stop light
	ON / OFF / time / N / PE
	Ü1 / Ü1 / Ü2 / Ü2 / Ü3 / Ü3 / N / PE
	24 V-ON / 24 V-OFF / [-] inside
	connector to remote unit

Remote Unit

Measurements	width 300 mm x height 230 mm x length 120 mm
Connection	connector to main unit
Output	via a plug connector
	ON / OFF / time - controlling
	Ü1 / Ü1 / Ü2 / Ü2 / Ü3 / Ü3 - controlling

Remote Unit Type ATHEN 24 positions

ATHEN's Remote Tableau ist a summery of 24 positions in 1 unit.

Measurements	width 1845 mm x height 615 mm x length 120 mm
Connection	connector to main unit