Signal Towers Kombi*SIGN*

Signals to combine – At the twist of a hand

✔ Signal elements in every common voltage

✔ Modular system allows combination as required

✔ High protection rating IP 54 or IP 65

✔ Wide range of optical and audible elements

✔ LED technology ensures even better visibility

✔ New attention-grabbing light effects (e.g. EVS)

Kombi*SIGN* 71	Kombi*SIGN* 70	Kombi*SIGN* 50
Protection Rating IP 65	**Protection Rating IP 54**	**Protection Rating IP 54**
Modular signal tower system with 70 mm diameter for use in in extreme conditions.	Modular signal tower system with 70 mm diameter for use in in normal conditions.	Modular signal tower system with 50 mm diameter for use on smaller machines.
Not compatible with Kombi*SIGN* 70	Not compatible with Kombi*SIGN* 71	
Terminal Element	**Terminal Element**	**Terminal Element**
70 mm	70 mm	50 mm
Either: improved screw terminal	Screw terminal	Screw terminal
Or: terminal element with CAGE CLAMP® technology		
Cylindrical terminal element	Conical terminal element	Practical bayonet fixing system tool-free bulb-change.
See page 16.	**See page 36.**	**See page 54.**
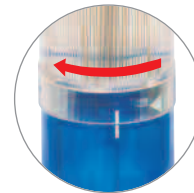
WERMA SIGNALTECHNIK

Simple operation thanks to bayonet mechanism

WERMA was the first signal beacon manufacturer to offer a bayonet mechanism allowing elements to be mechanically and electrically connected within seconds.

- ☑ Simple mounting and removal of the elements
- ☑ New combinations at the twist of a hand
- ☑ Tool-free bulb change

A fitting solution for every mounting requirement

The comprehensive range of accessories for Kombi*SIGN* signal towers offers solutions for the most diverse mounting needs and exceeds the industry standards in this respect.

Besides the wide choice of brackets, bases and tubes WERMA also offers unique special solutions, for example the Foldaway Base, the Tube with Clamp or the Indication Board.

You will find an overview of the entire range of accessories for Kombi*SIGN* Signal Towers on pages 60 and 61.
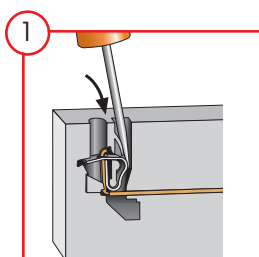
Kombi*SIGN* Signal Tower with Foldaway Base

Indication board for the addition of instructions

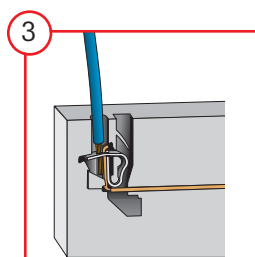# Safe and efficient connection thanks to CAGE CLAMP® technology

Terminal elements with CAGE CLAMP® technology enable leads to be quickly and easily wired, guaranteeing a secure and reliable contact.

1. Insert screwdriver at a slight angle into opening as far as possible.
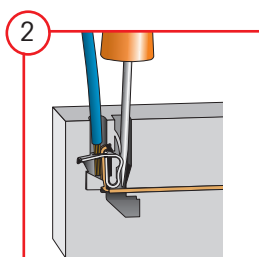
2. Open spring-loaded clamp with the help of the screwdriver and insert wire as far as possible

3. Remove screwdriver – the wire is firmly clamped.

CAGE CLAMP® is a registered trademark of WAGO Kontakttechnik GmbH.

Signal Tower Kombi*SIGN* 71

This is how you can assemble your Kombi*SIGN* 71 signal tower!

▶ **STEP 1**
Select the required optical or audible elements.

Many Kombi*SIGN* highlights are also available (for details see page 17).

Audible Signal Elements
• Buzzer Element
• Siren Element
• Vocal Element

Optical Signal Elements
• (LED) Permanent Light
• LED Permanent Light ultrabright
• (LED) Flashing Light
• LED EVS Element
• LED Blinking Light
• LED Rotating Light

NEW

▶ **STEP 2**
Select the appropriate mounting option for your application.

▶ **STEP 3**
Select the correct terminal element for your mounting option.

Base Mounting

Improved screw terminal
Order no. **640 820 00**

Terminal element with CAGE CLAMP® technology
Order no. **640 800 00**

Tube Mounting

Improved screw terminal
Order no. **640 830 00**

Terminal element with CAGE CLAMP® technology
Order no. **640 810 00**

▶ **STEP 4**
Where appropriate, select a base and the desired tube length (only for tube mounting).

Tube with clamp
Order no. **960 000 18**

Adaptor for single hole mounting
Order no. **960 000 25**

Base with integrated tube
Order no. **975 840 10**

Tube Ø 25 mm, all anodized	Order no.
100 mm long	**975 845 10**
250 mm long	**975 840 25**
400 mm long	**975 840 40**
600 mm long	**975 840 60**
800 mm long	**975 840 80**
1000 mm long	**975 840 03**

Base for Tube, plastic
Order no. **975 840 90**

Base for Tube, metal
Order no. **975 840 91**

Foldaway Base
Order no. **960 000 30**

Tube Ø 25 mm, plastic, only for Foldaway Base, 45 mm long
Order no. **960 000 31**

▶ **STEP 5**
Where appropriate, select the bracket and the contact box.

Contact box for cable exit at side
Order no. **975 840 01**

Bracket for base mounting
Order no. **960 000 02**

Contact box for cable exit at side
Order no. **975 840 01**

Contact box with magnetic base and cable exit at side
Order no. **975 840 04**

Bracket for 1-sided mounting
Order no. **975 840 85**

Bracket for 2-sided mounting
Order no. **975 840 86**

Bracket for base mounting with concealed cable entry
Order no. **960 000 14**

Bracket for tube mounting
Order no. **960 000 01**

TIP

The Signal Devices Site on the Internet:
www.werma.com

With our new **signal tower configurator** you can put together your own individual signal tower.

WERMA
SIGNALTECHNIK

The Highlights for Kombi*SIGN* 71

NEW

WIN – Wireless Information Network

- Economical wireless-based Machine Data Collection system (MDC system)
- Central monitoring of a wide range of different machines via PC

See page 24

NEW

Kombi*SIGN* reflect

- Simple monitoring of signal towers out of view
- Signal tower ″reflection″ to a central location

See page 23

GSM Transmitter Element
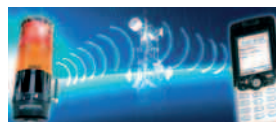
- Malfunction signalled by signal tower is transmitted via SMS or call to a mobile phone
- Activation without the need for programming
- No additional power supply needed

See page 26

AS-Interface Element

- LEDs indicate current status
- 31 or 62 addresses
- Available with standard or A/B technology

See page 27

NEW

LED Permanent Light Element ultrabright

- Up to 20 times brighter than conventional LED elements
- Maximum brightness via intelligent LED control

See page 28

LED Flashing Light Element

- Extremely long life duration up to 50,000 hrs
- Low current consumption
- Shock-proof and vibration resistant

See page 18

LED EVS Element

- Attention-grabbing flickering light
- Extremely powerful signal effect
- Random sequence of light signals prevents acclimatisation effect

See page 29

Vocal Element

This Signal Tower speaks to you!

- Plays customer-specific audio files in mp3 format (sounds, alarms, music or spoken text)
- Easy programming via USB interface
- Up to 60 minutes replay capacity

See page 30

Siren Element with self-adjusting sound output

- Sound output is automatically adjusted to the background noise level
- Warning tone can be heard without being irritatingly loud

See page 31

Terminal Element with USB Interface

- Direct triggering of signal tower elements via USB Interface
- Easy activation

See page 32

Customer-specific coloured coatings

- Signal towers in customer-specific colours – complete range of RAL colours available
- Meets the demands of an increasing design orientation

See page 33

Foldaway base

- Enables signal towers to be folded down completely, even when connected
- Vertical alignment of signal towers even on sloping surfaces

See page 35

640   Signal Tower Kombi*SIGN* 71

IP 65

Bracket (accessory)

IP 65

Base with tube (accessory)

- **High protection rating IP 65**
- **Signal tower system 70 mm Ø with modular construction**
- **Improved illumination**
- **Flexible combination of optical and audible elements**

ℹ️ TECHNICAL SPECIFICATIONS:

Dimensions (Ø x Height):	Terminal element: 70 mm x 26.5 mm Light element: 70 mm x 65 mm Audible element: 70 mm x 72/79/111 mm
Housing:	Terminal element: PA fibreglass, high-impact Cap: PC
Lens:	PC, transparent Audible and ASI elements: PC
Fixing:	Base mounting Tube mounting, for tube Ø 25 mm Bracket mounting (accessory)
Socket:	Bayonet, B15d, for bulbs max. 7 W
Connection:	CAGE CLAMP® technology max. 2.5 mm^2 or screw terminal max. 2.5 mm^2 Contact protection according to VDE
Cable entry:	Cable diameter max. 14 mm
Element seal:	Pre-mounted with each module
Protection rating:	Light elements: IP 65 Audible elements: IP 65 (Order no. 645 830 55 = IP 40)
Number of modules possible:	Max. 5 / max. 10 elements with 2-sided bracket

Permanent light element	12 - 240 V ≈ Bulb not included in assembly.		
LED Permanent light element Current consumption:	24 V ≈ < 30 mA	115 V ∼ < 20 mA	230 V ∼ < 20 mA

NEW   **LED Permanent light element ultrabright** 24 V ⎓
Life duration: Up to 50,000 hrs
Current consumption: Max. 190 mA
Up to 20 times brighter than conventional LED beacons.

Flashing light element (Xenon) Life duration: Current consumption: Reduced for AS-Interface: Flash frequency:	24 V ⎓ 4 x 10^6 flashes 125 mA 80 mA c. 1 Hz	115 V ∼ 22 mA	230 V ∼ 15 mA

LED Flashing light element   24 V ⎓
Life duration: 50,000 hrs
Current consumption: < 30 mA (red/yellow)   < 25 mA (green/clear/blue)
Flash frequency: c. 1 Hz (Double Flash)

LED EVS* element   24 V ⎓
Current consumption: 350 mA (red/yellow)   250 mA (green/clear/blue)
* EVS = Enhanced Visibility System

LED Blinking light element Current consumption: Blink frequency:	24 V ≈ 25 mA c. 1 Hz	115 V ∼ 25 mA	230 V ∼ 25 mA

LED Rotating light element   24 V ≈
Current consumption: 70 mA
Rotation frequency: c. 120 r.p.m.

Improved light effect

c ⓊⓁ us   CE   PℂCT   IP65   +50°C / -20°C   2 Ws   105 dB   24 V PLC

WERMA SIGNALTECHNIK
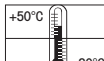
(LED) Permanent/Flashing element

Permanent light, clear with info

LED EVS element

LED element

🛒 **ORDER SPECIFICATIONS OPTICAL ELEMENTS:**

Permanent light element	12-240 V≂		
red	641 100 00		
green	641 200 00		
yellow	641 300 00		
clear	641 400 00		
blue	641 500 00		

Bulb not included in assembly. Accessories see page 22.

LED Permanent light element	24 V≂	115 V∼	230 V∼
red	644 100 75	644 100 67	644 100 68
green	644 200 75	644 200 67	644 200 68
yellow	644 300 75	644 300 67	644 300 68
clear	644 400 75	644 400 67	644 400 68
blue	644 500 75	644 500 67	644 500 68

NEW

LED Permanent light element ultrabright	24 V⎓		
red	644 180 55		
green	644 280 55		
yellow	644 380 55		
clear	644 480 55		
blue	644 580 55		

Flashing light (Xenon)	24 V⎓ (ASI)	24 V⎓	115 V∼	230 V∼
red	643 110 55	643 100 55	643 100 67	643 100 68
green	643 210 55	643 200 55	643 200 67	643 200 68
yellow	643 310 55	643 300 55	643 300 67	643 300 68
clear	643 410 55	643 400 55	643 400 67	643 400 68
blue	643 510 55	643 500 55	643 500 67	643 500 68

Compare the prices and advantages of an LED Flashing light

LED Flashing light element	24 V⎓		
red	644 120 55		
green	644 220 55		
yellow	644 320 55		
clear	644 420 55		
blue	644 520 55		

LED EVS element	24 V⎓		
red	644 140 55		
green	644 240 55		
yellow	644 340 55		
clear	644 440 55		
blue	644 540 55		

LED Blinking light element	24 V≂	115 V∼	230 V∼
red	644 110 75	644 110 67	644 110 68
green	644 210 75	644 210 67	644 210 68
yellow	644 310 75	644 310 67	644 310 68
clear	644 410 75	644 410 67	644 410 68
blue	644 510 75	644 510 67	644 510 68

LED Rotating light element	24 V≂		
red	644 130 75		
green	644 230 75		
yellow	644 330 75		
clear	644 430 75		
blue	644 530 75		

Improved light effect

Life duration up to 50,000 hrs

Further voltages on request.

📏 **TECHNICAL DIAGRAMS:**

see page 277 onwards

640

Signal Tower KombiSIGN 71

IP 65

Audible element

**Siren element with
self-adjusting sound output**

IP 65

Terminal element with cap

Vocal element

GSM transmitter element

🛒 ORDER SPECIFICATIONS AUDIBLE ELEMENTS:

Buzzer element 85 dB, 25 mA, IP 65, Continuous or pulse tone	24 V ≈ **645 800 75**	115 V ∼ **645 800 77**	230 V ∼ **645 800 68**
Siren element 105 dB, 150 mA, IP 40 Continuous tone alternating	24 V ⎓ **645 830 55** no UL approval		
Multi-functional Siren 100 dB, IP 65, 8 different tones, adjustable sound output	24 V ≈ / 80 mA **645 820 75**	115 V ∼ / 40 mA **645 820 67**	230 V ∼ / 40 mA **645 820 68**
Multi-functional Siren, **can be triggered externally** 100 dB, 80 mA, IP 65, 7 diff. tones can be triggered externally, adjustable sound output, number of tones depending on the number of optical elements.	24 V ⎓ **645 850 55**		
Siren element with **self-adjusting sound output** Technical specifications see page 31.	24 V ⎓ **645 810 55**		

🛒 ORDER SPECIFICATIONS TERMINAL ELEMENTS :

	CAGE CLAMP®	Screw terminal
Terminal element for tube mounting including cap	640 810 00	640 830 00
Terminal element for bracket or base mounting including cap and seal	640 800 00	640 820 00
Terminal element with **USB Interface** (for tube mounting) Technical specifications see page 32.	640 840 00	

🛒 ORDER SPECIFICATIONS KOMBISIGN-HIGHLIGHTS:

NEW	**WIN system for KombiSIGN 71** Technical specifications see page 24.	860 640 01
NEW	**WIN complete for KombiSIGN 71** Technical specifications see page 24.	860 640 03
NEW	**WIN slave for KombiSIGN 71** Technical specifications see page 24.	860 640 02
NEW	**KombiSIGN 71 reflect** Technical specifications see page 23.	861 640 01
	GSM Transmitter Element **for KombiSIGN 71** Technical specifications see page 26.	24 V ⎓ **646 700 55**
	Vocal Element **for KombiSIGN 71** Technical specifications see page 30.	24 V ⎓ **645 840 55**
	AS-Interface Element **for KombiSIGN 71** Technical specifications see page 27.	Standard Slave A/B-Slave 24 V ⎓ 24 V ⎓ **646 830 55** **646 810 55**

WERMA
SIGNALTECHNIK

Accessories for Signal Tower KombiSIGN 71

IP 65

🛒 **ORDER SPECIFICATIONS ACCESSORIES:**

|	
Contact box for cable exit at side, with mounting material	975 840 01
Contact box with magnetic base and cable exit at side	975 840 04
Bracket for tube mounting with cable gland	960 000 01
Bracket for surface mounting with cable gland	960 000 02
Bracket for base mounting with concealed cable entry, incl. rubber seals	960 000 14
Bracket for 1-sided mounting, incl. rubber seals	975 840 85
Bracket for 2-sided mounting, incl. rubber seals	975 840 86
Tube with clamp, Ø 25 mm 250 mm long, with cable gland	960 000 18

Tube Ø 25 mm, all anodized aluminium

100 mm long	975 845 10
250 mm long	975 840 25
400 mm long	975 840 40
600 mm long	975 840 60
800 mm long	975 840 80
1000 mm long	975 840 03

Foldaway Base incl. rubber seals, suitable for tube, Ø 25 mm, all anodized aluminium (Technical specifications see page 35)	960 000 30
Tube Ø 25 mm, plastic for mounting the Terminal Element directly on the Foldaway Base	960 000 31
Base for tube mounting Ø 25 mm, plastic, incl. rubber seal	975 840 90
Base for tube mounting Ø 25 mm, metal, incl. rubber seal, recommended for tube lengths of 400 mm and longer	975 840 91
Base with integrated tube, Ø 25 mm, 110 mm long, plastic, incl. rubber seal	975 840 10
Adaptor for tube mounting, Ø 25 mm / 1/2" NPT thread	975 840 02
Adaptor for single hole mounting Ø 25 mm, M 18	960 000 25
Cable gland for surface mounting M 16 x 1.5 mm	960 000 04

📏 **TECHNICAL DIAGRAMS:**

see page 292 onwards

Accessories for Signal Tower Kombi*SIGN* 71

IP 65
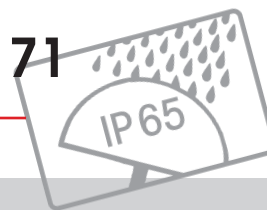
ORDER SPECIFICATIONS ACCESSORIES:

Bulb BA15d, total length max. 42 mm
(for permanent light 641)

12 V, 5 Watt	**955 840 34**
24 V, 5 Watt	**955 840 35**
30 V, 5 Watt	**955 840 32**
115 V, 5 Watt	**955 840 57**
230 V, 5 Watt	**955 840 38**

LED bulb BA15d, total length max. 42 mm
(for permanent light 641)

Voltage	24 V ≈	115 V ∼	230 V ∼
Current consumption	< 45 mA	< 15 mA	< 15 mA
red	**956 100 75**	**956 100 67**	**956 100 68**
green	**956 200 75**	**956 200 67**	**956 200 68**
yellow	**956 300 75**	**956 300 67**	**956 300 68**
white	**956 400 75**	**956 400 67**	**956 400 68**
blue	**956 500 75**	**956 500 67**	**956 500 68**
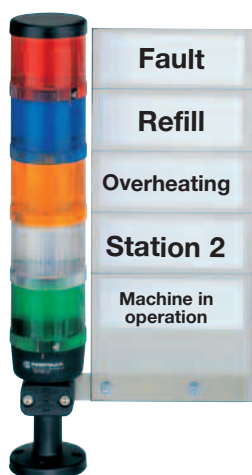
Indication Board

- Indication Board for one to five modules
- Simple mounting onto signal tower tube
- Ample space for written information
- Simply break off unwanted segments

Dimensions of indication board (W x H):	153 x 345 mm
Surface area per section (W x H):	c. 140 x 50 mm
Material:	PMMA
Assembly:	Indication board (5 sections) incl. mounting material
Mounting:	Fixing only possible on 25 mm diameter tube
Indication board	**960 000 05**

Fault
Refill
Overheating
Station 2
Machine in operation
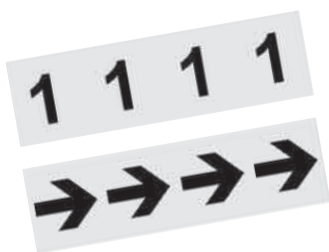
Info transparencies: To place inside optical elements, not for use in Flashing Light, LED EVS, LED Flashing Light and LED Permanent Light Element ultrabright.

neutral	**975 840 49**	number „6"	**975 840 56**
number „0"	**975 840 50**	number „7"	**975 840 57**
number „1"	**975 840 51**	number „8"	**975 840 58**
number „2"	**975 840 52**	number „9"	**975 840 59**
number „3"	**975 840 53**	number „10"	**975 840 92**
number „4"	**975 840 54**	arrow	**975 840 62**
number „5"	**975 840 55**		

⚠ ADDITIONAL INFORMATION:

You will find an overview of the entire range of accessories for Kombi*SIGN* Signal Towers on pages 60 and 61.

TECHNICAL DIAGRAMS:

WERMA
SIGNALTECHNIK

KombiSIGN reflect for KombiSIGN 71

NEW

The slave sends the status directly to the master, and reflects the status of the signal tower installed on the machine

Remote transmission via wireless signal with a maximum range of up to 300 m (unobstructed line of sight)

- Simple monitoring of signal towers out of view
- Signal tower "reflection" to a central location
- Shortening of reaction times and reduction of costs
- KombiSIGN reflect is integrated into existing WERMA signal towers
- No additional wiring costs
- Simple commissioning due to pre-configured modules

TECHNICAL SPECIFICATIONS:

Slave

Dimensions (Ø x Height):	70 mm x 65.5 mm
Housing:	PC, black
Connection:	Bayonet
Operating voltage:	24 V ⎓
Current consumption:	40 mA

Master

Dimensions (Ø x Height):	70 mm x 65.5 mm (without antenna)
Housing:	PC, black
Connection:	Bayonet
Operating voltage:	24 V ⎓
Current consumption:	40-90 mA

Wireless connection

ISM frequency:	868 MHz (KombiSIGN reflect conforms to the EU's EN 300220 harmonised standard and can thus be used in all EU member countries. Further countries upon request.)
Transmission range:	Up to 300 m (unobstructed line of sight)

ORDER SPECIFICATIONS:

KombiSIGN 71 reflect	**861 640 01**

ADDITIONAL INFORMATION:

Signal tower "reflection"
WERMA Signaltechnik provides a simple solution for the remote wireless monitoring of machinery. The new "KombiSIGN reflect" kit can be integrated into existing signal towers which are already installed on your machines. KombiSIGN reflect "reflects" the status of the machine to a signal tower within your line of sight.

This enables you to wirelessly monitor machines situated at a greater distance and respond quickly to malfunctions. With KombiSIGN reflect, even machines which where not previously network-capable can now be remotely monitored.
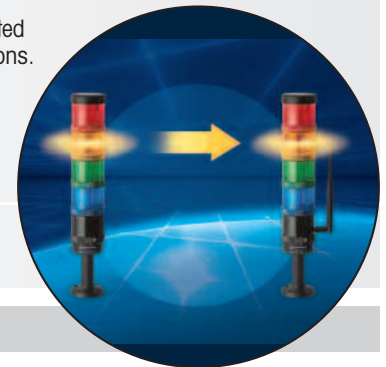
Simply fit the KombiSIGN reflect slave to the signal tower on the machine

TECHNICAL DIAGRAMS:

Simple monitoring of signal towers out of view

CE   IP 65   +50°C / -20°C   PLC

WERMA SIGNALTECHNIK

860   WIN* for KombiSIGN 71
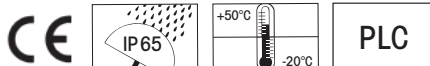
NEW

"WIN system" is immediately ready for use: Fit the slaves in the existing signal towers and connect the master to the PC

- Economical wireless-based Machine Data Collection system (MDC system)
- Central monitoring of a wide range of different machines via PC
- Relevant machine information at a glance

- Reduction of reaction times, repair and maintenance requirements and costs
- No additional wiring as existing WERMA signal towers can be used
- Downtime analysis

The all inclusive kit for KombiSIGN 71: "WIN complete" consists of three pre-configured signal towers and the master

i   **TECHNICAL SPECIFICATIONS:**

Patent pending

WIN slave

Dimensions (Ø x Height):	70 mm x 65.5 mm
Housing:	PC, black
Connection:	Bayonet
Operating voltage:	24 V ≈
Current consumption:	40 mA

WIN master

Dimensions (L x H x W):	76 mm x 30 mm x 80 mm (without antenna)
Housing:	ABS, black
Connection:	Via USB
Operating voltage:	Via USB
Current consumption:	< 100 mA
Suitable for:	Windows 2000, Windows XP, Windows Vista, Windows 7

Wireless connection

ISM frequency:	868 MHz (WIN conforms to the EU's EN 300220 harmonised standard and can thus be used in all EU member countries. Further countries upon request.)
Transmission range:	Up to 300 m (unobstructed line of sight) Every slave simultaneously functions as a "repeater", enabling the transmission range to be significantly increased.

Expandable at any time: With additional "WIN slaves" up to 50 machines can be integrated into the network

WIN complete

With the all inclusive kit "WIN complete" you can immediately start monitoring up to three machines. All you have to do is mount the signal towers from the kit onto your machines. After installing the supplied software on to your PC you can immediately start monitoring the status of your machines.

Assembly:	WIN master, 3 WIN slaves for KombiSIGN 71 (pre-configured), 3 KombiSIGN 71 signal towers (LED permanent light elements in red, yellow and green, terminal element, base with integrated tube), software

WIN system

With "WIN system" the user has even more choice: The kit consists of a WIN master including the software, a USB cable and three pre-configured WIN slaves.
The slaves are fitted to the existing WERMA signal towers which need to be monitored.
Or you can order your own signal towers from WERMA's wide range of KombiSIGN products - enabling you to combine audible elements, different light effects, colours and mounting options as required.

Assembly:	WIN master, 3 WIN slaves for KombiSIGN 71 (pre-configured), Software

WERMA
SIGNALTECHNIK

With the supplied software, users can wirelessly monitor their machinery via PC

The software displays the status of the signal towers integrated into wireless network

ORDER SPECIFICATIONS:

WIN system for Kombi*SIGN* 71	**860 640 01**

Assembly: WIN master, 3 WIN slaves Kombi*SIGN* 71
(pre-configured), Software

WIN complete for Kombi*SIGN* 71	**860 640 03**

Assembly: WIN master, 3 WIN slaves for Kombi*SIGN* 71 (pre-configured),
3 Kombi*SIGN* signal towers (LED permanent light elements in red, yellow and green,
terminal element, base with integrated tube), software

WIN slave for Kombi*SIGN* 71	**860 640 02**

To expand WIN complete or WIN system.
Both networks can be expanded to up to 50 WIN slaves per network as required.

⚠ ADDITIONAL INFORMATION:

* WIN = Wireless Information Network

The "Wireless Information Network", "WIN" for short,
is a simple MDC system (Machine Data Collection system).

WIN enables you to centrally monitor and evaluate the performance of up to fifty machines
of varying ages and functions via wireless technology. Even machines which were not
previously network-capable can now be integrated into networks.

Software for monitoring and analysing the machine operating status
With the supplied software, users can wirelessly monitor machinery on their Pc.
They can search for faults or analyse the operating status, thus raising the
efficiency and productivity of their machines.

Examples:

Module 1: Status indication
of the networked signal towers
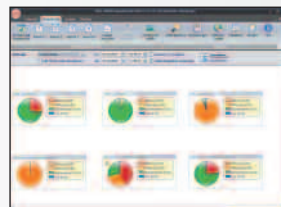
Module 2: Productivity per machine
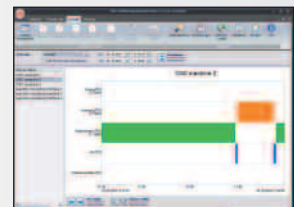
Module 3: Failure analysis over time

Further informationen can be found in the chapter „Tech-Talk" beginning on page 320.

TECHNICAL DIAGRAMS:

CE   IP 65   +50°C / -20°C   SPS
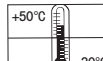
646   GSM Transmitter Element for Kombi*SIGN* 71

Patent approved

- Unique Signal Tower solution
- GSM transmitter element can be simply integrated into an existing signal tower
- Activation without the need for programming

- Malfunction signalled by signal tower is transmitted via SMS to a mobile phone
- No additional power supply
- Also suitable for US frequencies (Quadband)

Also suitable for US frequencies

## ℹ TECHNICAL SPECIFICATIONS:

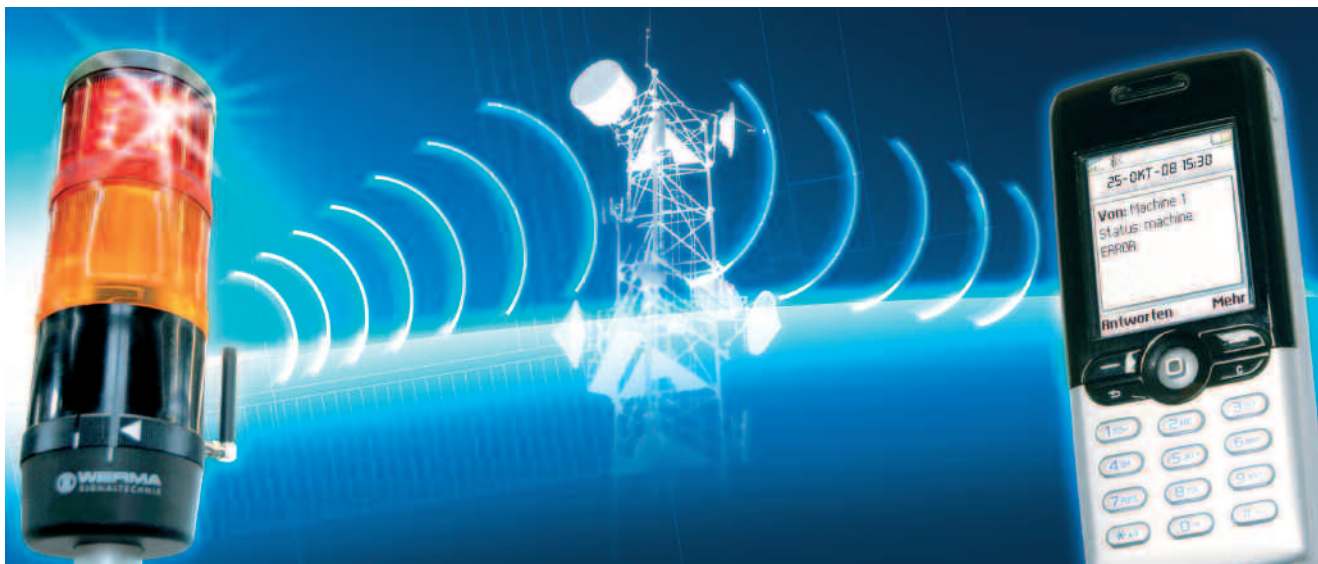|	
Dimensions (Ø x Height):	70 mm x 65.5 mm (without antenna)
Housing:	PC
Current consumption:	50 mA
Max. current draw (momentary):	450 mA
GSM frequency:	850, 900, 1800/1900 MHz
Plug-in slot for SIM card:	Integrated (SIM card is not included in assembly)
Antenna connection:	FME plug connector (bracket antenna included)

🛒 ORDER SPECIFICATIONS:

GSM Transmitter Element	24 V ⎓
	646 700 55

📏 TECHNICAL DIAGRAMS:

see page 278

Class 2

c ⓤⓛ US   CE   PGⓣ   170 g   IP 65   +50°C / -20°C

WERMA
SIGNALTECHNIK

AS-Interface Element
for Kombi*SIGN* 71

- LEDs indicate current status
- 31 or 62 addresses
- Available with standard or A/B technology
- Voltage supply switchable from internal bus supply to additional external voltage supply
- With addressing socket

Cable not included in assembly

LEDs display the current status

ℹ TECHNICAL SPECIFICATIONS:

	Standard Slave	A/B-Slave
Number of addresses:	Max. 31	Max. 62
Number of signal elements:	Max. 4	Max. 3
IO-Code:	8	8
ID-Code:	F	A
ID2-Code:	–	E
Outputs:	4 semiconductor relays	3 semiconductor relays
Approved in accordance with:	Spec. V 3.0	Spec. V 3.0

Specif. Power supply	
AS-Interface Element:	Via bus conduction
Operating voltage:	25 V … 31.6 V according to the AS-Interface specification
Reverse battery protection:	Integrated
Watchdog:	Integrated
Additional external voltage:	24 V ⎓

	With internal add. voltage	With external add. voltage
Current carrying cap. Σ Imax:	200 mA	200 mA per signal element
Current consumption max:	250 mA	75 mA
Voltage at signal element:	18 V - 31 V	24 V +/- 10%
Short circuit/overload protection:	Integrated	Pre-fuse M 1.6 A

🛒 ORDER SPECIFICATIONS:

AS-Interface Element	Standard Slave	A/B-Slave
	646 830 55	**646 810 55**

⚠ ADDITIONAL INFORMATION:

The Kombi*SIGN* Signal Towers 70 and 71 with AS-Interface Element are capable of total communication: Through simple integration of an AS-Interface Element the actuators are connected to the networking system Actuator-Sensor-Interface – this considerably reduces complex wiring. The necessary power supply (supply via bus or external) can be selected with a switch. This element is mounted as the first tier of the individual signal tower directly on top of the terminal element. (Further Information see page 319).

📏 TECHNICAL DIAGRAMS:

Class 2

Standard Slave A/B-Slave

c(UL)us CE PG ASi Approval No. 66301 ASi Approval No. 66202 77 g IP 65 +50°C / -20°C

644

LED Permanent Light Element ultrabright for Kombi*SIGN* 71

NEW
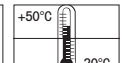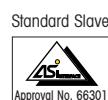
- **Up to 20 times brighter than conventional LED elements**
- **Extremely good visibility – even in direct sunlight**
- **Life duration up to 50,000 hrs**

- **Maximum brightness via intelligent LED control**
- **Low current consumption and maintenance-free**
- **Shock-proof and vibration-resistant**

Life duration up to 50,000 hrs

ℹ TECHNICAL SPECIFICATIONS:

Dimensions (Ø x Height):	70 mm x 65.5 mm
Lens:	PC, transparent
Seal:	Pre-mounted with each element
Number of modules possible:	5, with 2-sided bracket max. 10
Current consumption:	Max. 190 mA

🛒 ORDER SPECIFICATIONS:

LED Permanent light element ultrabright	24 V ⎓
red	**644 180 55**
green	**644 280 55**
yellow	**644 380 55**
clear	**644 480 55**
blue	**644 580 55**

Maximum brightness via intelligent LED control

⚠ ADDITIONAL INFORMATION:

Sophisticated triggering
Thanks to its sophisticated triggering, the innovative LED element "ultrabright" is up to 20 times brighter than conventional LED elements – making it almost certainly the brightest permanent light that the world of signalling technology currently has to offer.

Furthermore, the intelligent electronics ensure that the LEDs operate at maximum brightness, depending on the ambient and operating temperatures. The "ultrabright" LED element is therefore always working at its optimum, and the energy-saving LED technology ensures that power consumption is kept to a minimum.

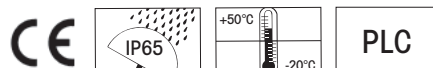Further informationen can be found in the chapter "Tech-Talk" beginning on page 325.
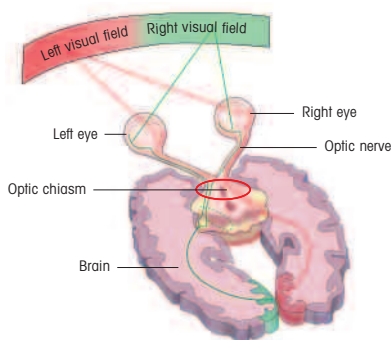
📏 TECHNICAL DIAGRAMS:

The high level of brightness guarantees good visibility – even in direct sunlight

CE   IP65   +50°C / -20°C   PLC

WERMA
SIGNALTECHNIK

Patent pending

- • Attention-grabbing flickering light
- • Developed on a neurobiological basis
- • Extremely powerful signal effect
- • Random sequence of light signals prevents acclimatisation effect
- • For signalling extremely hazardous situations and the need for immediate action

Life duration up to 50,000 hrs

ℹ TECHNICAL SPECIFICATIONS:

Dimensions (Ø x Height):	70 mm x 65 mm
Lens:	PC, transparent
Seal:	Pre-mounted with each element
Number of modules possible:	5, with 2-sided bracket max. 10
Current consumption:	red / yellow: 200 mA
	green / blue / clear: 150 mA

🛒 ORDER SPECIFICATIONS:

Voltage	24 V ⎓
red	**644 140 55**
green	**644 240 55**
yellow	**644 340 55**
clear	**644 440 55**
blue	**644 540 55**

⚠ ADDITIONAL INFORMATION:

* EVS = Enhanced Visibility System
Further informationen can be found in the chapter "Tech-Talk" on page 326.

EVS – Attention-grabbing light effect on neurobiological basis
The flickering of neon lamps and comparable light effects are highly effective at attracting our attention. The neurobiological basis of this phenomenon is explained by a university scientist as follows: Light signals are processed in the human brain, not directly in the eye.

In order to be consciously registered there, incoming stimuli first have to pass through a form of filter. This filter has a "protective" function. During sleep it reduces disturbing stimuli to a minimum and assists in "overlooking" regular or continuous signals.

EVS – Flickering light without acclimatisation effect
On the basis of this understanding, WERMA's R+D department set out to find a flickering light with a high degree of effectivity in attracting attention. In a multistage laboratory experiment 20 test candidates were asked to judge a series of different light signals and to determine the most eye-catching light. The result of the study was a stochastic flickering light with optimal attention-grabbing characteristics: EVS – Enhanced Visibility System! The light effect of this system is completely new and distinguishes it from all previous systems.

📏 TECHNICAL DIAGRAMS:

see page 277

Integrated into the Kombi*SIGN* Signal Towers, the new LED EVS Element generates a highly attention-grabbing signal

Left visual field   Right visual field

Right eye
Left eye
Optic nerve
Optic chiasm
Brain

The way in which the brain processes visual stimuli formed the basis for the development of the new EVS technology

CE   IP 65   +50°C / -20°C   PLC

645

Vocal Element for Kombi*SIGN* 71

German utility model approved

- • Plays customer-specific audio files in mp3 format (sounds, alarms, music or spoken text)
- • Easy programming via USB interface
- • Excellent sound quality

- • Up to 60 minutes replay capacity
- • Positive and negative logic possible
- • Adjustable sound output

ℹ TECHNICAL SPECIFICATIONS:

mp3 compatible

Dimensions (Ø x Height):	70 mm x 111 mm
Housing:	PC
Current consumption:	400 mA
Integrated memory:	Approx. 60 min. of replay capacity
Number of sequences recordable:	15, depending on the number of signal elements
Number of additionally signal elements:	Max. 3
Programming:	Via USB connection cable from PC
Sound output:	Adjustable, max. 85 dB
Assembly includes USB connection cable.	

🛒 ORDER SPECIFICATIONS:

Vocal element	24 V ⎓
	645 840 55

ACCESSORIES:

Headset with microphone	**960 645 01**

TECHNICAL DIAGRAMS:

see page 278

The vocal element can be combined with up to 3 signal elements.

Individual messages can be recorded via the headset with microphone directly on to the PC (accessory, specific version may vary from photo)

This Signal Tower communicates with you – the WERMA Vocal Element!

Plays customer-specific audio files in mp3 format (sounds, alarms, music or spoken text)

Easy programming via USB interface

Excellent sound quality

Up to 60 minutes replay capacity

Adjustable sound output

WERMA SIGNALTECHNIK

c ⓊⓁ us   CE   PCT   150 g   IP 65   +50°C -20°C   max 85 dB

WERMA SIGNALTECHNIK

645

Siren Element with self-adjusting sound output for Kombi*SIGN* 71

Patent approved

- Automatic sound output adjustment between 80 and 100 dB
- Sound output is c. 5 dB louder than the background noise level
- Continual measurement of the ambient noise level
- Ideal for applications with changing ambient sound levels

ℹ TECHNICAL SPECIFICATIONS:

Dimensions (Ø x Height):	70 mm x 111 mm
Housing:	PC
Tone type:	Pulse tone
Tone frequency:	2.5 KHz
Sound output:	80 dB - max. 100 dB

Loud enough yet not disturbing!

🛒 ORDER SPECIFICATIONS:

Voltage:	24 V ⎓
Current consumption:	< 150 mA
	645 810 55

⚠ ADDITIONAL INFORMATION:

The siren element adjusts its sound output through continual measurement of the ambient noise level. The emitted tone is c. 5 dB louder than the background noise level. The warning signal can always be heard without being irritatingly loud for people in the sounder's vicinity.

📏 TECHNICAL DIAGRAMS:

c(UL)us CE PCT 125 g IP65 +50°C -20°C max100 dB PLC

WERMA
SIGNALTECHNIK
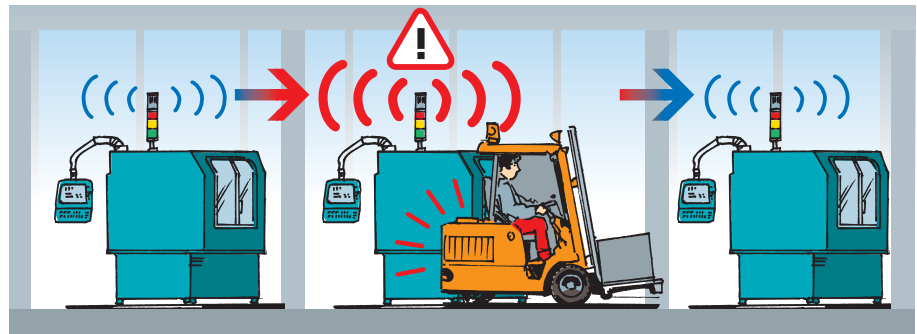
640

Terminal Element with USB Interface for Kombi*SIGN* 71

- **Direct triggering of signal tower elements via USB Interface**
- **Easy activation**
- **Can be combined with up to 4 signal elements**
- **Assembly includes installation software and USB connection cable**
- **No additional power supply necessary**
- **No additional hardware needed**

Direct triggering of the signal tower via USB Interface

TECHNICAL SPECIFICATIONS:

Dimensions (Ø x Height):	70 mm x 26.5 mm
Material:	PA-GF, shock resistant
Fixing:	Tube mounting
Connection:	USB-Bus
	Assembly includes installation software and USB connection cable (AWG 22), 2 m long
	Maximum permitted length of USB cable (min. AWG 22): 7 m
Current carrying capacity Imax:	100 mA

ORDER SPECIFICATIONS:

Terminal element USB	24 V ⎓
	640 840 00

ACCESSORIES:

Base with integrierted tube	**975 840 10**
Tube mounting with base for tube (metal)	**975 840 91**

Tube Ø 25 mm

100 mm long	**975 845 10**	250 mm long	**975 840 25**
400 mm long	**975 840 40**	600 mm long	**975 840 60**
800 mm long	**975 840 80**	1000 mm long	**975 840 03**

Base for tube (metal) and tube Ø 25 mm (accessories)

⚠ ADDITIONAL INFORMATION:

Direct triggering via USB Interface
In many applications, it is necessary to indicate operating states or faults by means of an optical signal. A PLC or machine controller is not available in all areas; PCs are often also connected to control the machines. The optimal solution for this is the terminal element with USB interface for Kombi*SIGN* 70, 71 and Kompakt 71.

This innovation in the field of signal towers is controlled directly from the PC and can therefore be put into operation easily and in an uncomplicated manner. Neither a separate power supply nor additional hardware is required because the terminal element with USB interface is based on a standard USB interface.

TECHNICAL DIAGRAMS:

see page 277

WERMA SIGNALTECHNIK

640

KombiSIGN 71 in customer-specific coloured coatings

- **Signal towers in customer-specific colours**
- **Meets the demands of an increasing design preference**
- **Simple ordering procedure**
- **Complete range of RAL colours available**
- **High protection rating IP 65**

ℹ TECHNICAL SPECIFICATIONS:

Dimensions Terminal Elements (Ø x Height):	70 mm x 26.5 mm
Housing Terminal Elements:	PA-GF, fibreglass, high-impact, Cap: PC
Connection:	CAGE CLAMP® technology max. 2.5 mm²
	Contact protection according to VDE
Cable entry:	Cable diameter max. 14 mm
Number of modules possible:	Max. 5
Minimum order quantity:	10 pieces
Delivery time:	By arrangement
Colour Finish:	Matt or gloss

Please state the required RAL number

🛒 ORDER SPECIFICATIONS TERMINAL ELEMENTS:

|	CAGE CLAMP®	Screw terminal
Terminal element for tube mounting, coated, including cap	640 710 00	640 730 00
Terminal element for bracket or base mounting, coated including cap and seal	640 700 00	640 720 00

🏛 ACCESSORIES:

Base with integrated tube, coated Ø 25 mm, 110 mm long, plastic, incl. rubber seals	960 000 24
Bracket for 1-sided mounting, coated, incl. rubber seals	960 000 22

⚠ ADDITIONAL INFORMATION:

Please state the required RAL number and colour finish (matt or gloss) with each of your orders. Slight colour deviations are possible.

📏 TECHNICAL DIAGRAMS:
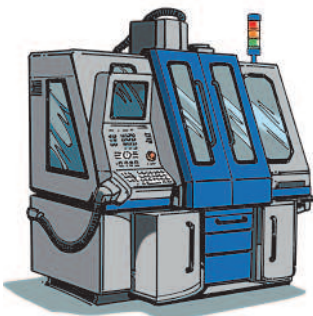
The Signal Towers are designed to harmonise with the colour of the customer's product design, guaranteeing a uniform appearance

RAL

The KombiSIGN Signal Towers 71 can be coated in any colour within the RAL spectrum

960

Interface Box
for KombiSIGN 71

Assembly:
Interface Box and
terminal element for
signal tower KombiSIGN 71

- **Direct triggering from PC via RS 232 or RS 485 interfaces**
- **Programming of various drives via serial interface**
- **Triggering of up to 4 independent elements of a KombiSIGN signal tower**
- **Up to 127 signal towers can be adressed (RS 485)**
- **Monitoring of each element possible**
- **Versions for Bus systems available on request**

ℹ️ TECHNICAL SPECIFICATIONS:

Dimensions of the Interface box (L x H x W):	80 x 66 x 82 mm
Material:	ABS
Drive:	24 V ⎓
Interfaces:	RS 232, RS 485

Assembly:	960 000 16	960 000 17
	• Interface box	• Interface box
	• Terminal element	• Terminal element
	• 2 cable glands M16	• 1 cable gland M16
		• Network appliance with cable
		• Connection cable RS 232, 2 m long, with Sub-D 9-pin and socket for power supply
		• CD with demonstration programme
		• Programming handbook

🛒 ORDER SPECIFICATIONS:

Interface box	**960 000 16**
Interface box incl. accessories	**960 000 17**

📏 TECHNICAL DIAGRAMS:

see page 292 + 293

Assembly without
laptop and signal tower elements

160 g   IP 65   +50°C / -20°C

WERMA
SIGNALTECHNIK

Foldaway Base for Kombi*SIGN* 71

German utility model approved

Maximum stability even with strong shocks and vibrations thanks to the locking mechanism

When transporting the machine, the signal tower can be folded away in a few simple steps

Vertical alignment of signal towers even on sloping surfaces

- The signal tower can be folded away while still connected
- Minimises packaging costs and optimises machine transportation
- Simple mounting and cable entry – for up to Ø 14 mm
- Vertical alignment of signal towers even on sloping surfaces
- Positioning in 7.5° steps, markings for 30, 45, 60 or 90 degrees

ℹ TECHNICAL SPECIFICATIONS:

Dimensions (Ø x Height):	70 mm x 117 mm
Material:	PA-GF
Cable diameter:	Max. 14 mm
Assembly:	Incl. rubber seals
Fixing:	Vertical, horizontal
	Positioning in 7.5° steps
Suitable for:	Tube, Ø 25 mm, all anodized aluminium,
	not included in assembly (accessory)

🛒 ORDER SPECIFICATIONS:

Foldaway base for Kombi*SIGN* 71	**960 000 30**

🗄 ACCESSORIES:

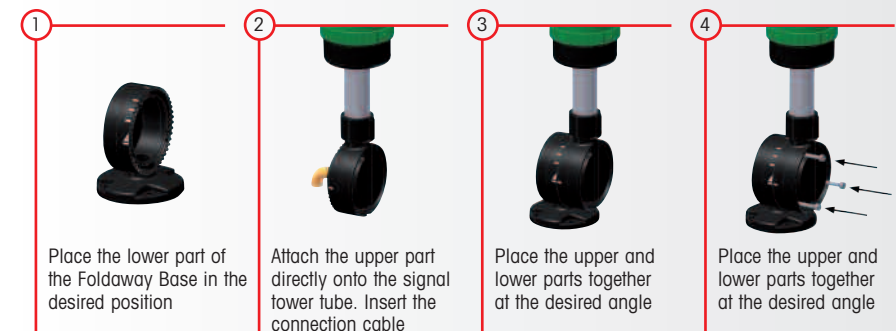|	
Tube Ø 25 mm, plastic 45 mm long, for direct mounting of the Terminal Element onto the Foldaway Base	**960 000 31**
Tube Ø 25 mm, all anodized aluminium, see page 21	
Cable gland M 16 x 1.5 mm	**960 000 04**

✓ QUICK AND SIMPLE MOUNTING:

①	②	③	④
Place the lower part of the Foldaway Base in the desired position	Attach the upper part directly onto the signal tower tube. Insert the connection cable	Place the upper and lower parts together at the desired angle	Place the upper and lower parts together at the desired angle

📏 TECHNICAL DIAGRAMS:

see page 293

CE IP65 +50°C / -20°C

WERMA
S I G N A L T E C H N I K