

Acoustics | Clocks | Evacuation

swiss made **g+m**  
elektronik ag

# Precise

The analogue and digital clock systems from g+m elektronik ag



# Precision with quality

Clocks run differently with us. Even more precisely, more innovatively and more individually. Analogue and digital clock systems which bear the mark of g+m elektronik ag meet ultra-modern requirements as regards state-of-the-art technology and system design. They guarantee maximum accuracy and operational reliability in a wide variety of applications. Be it in railway stations, airports, schools, hospitals, on factory shop floors, in offices and sports halls – our analogue and digital clocks are available, accurate to the second, for any application.

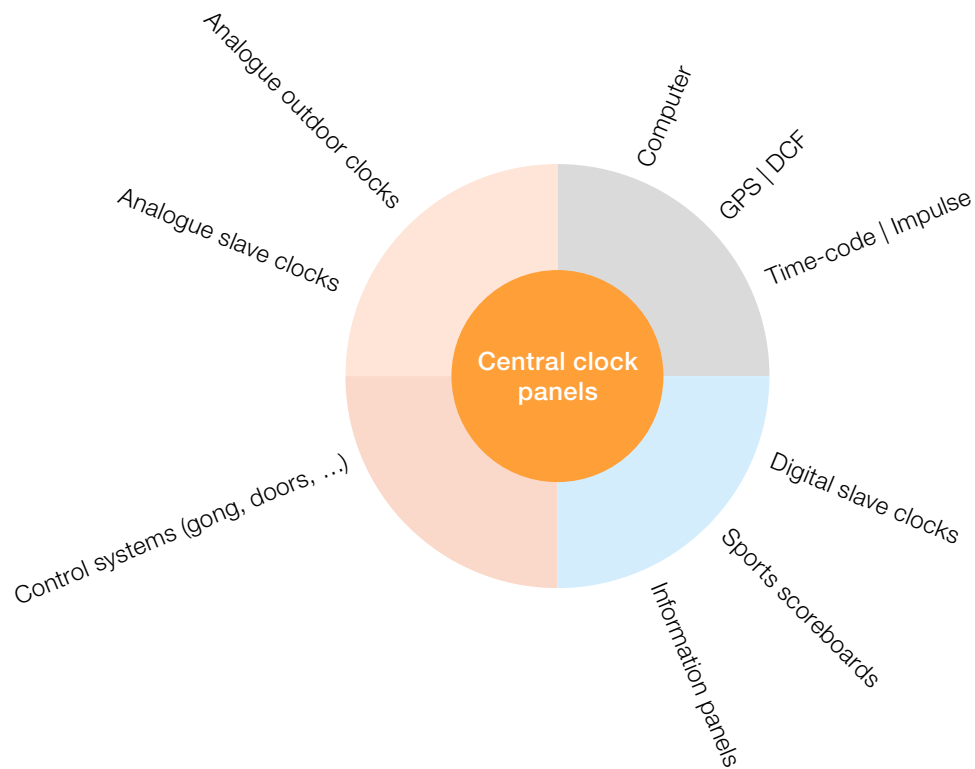
Clocks from g+m elektronik ag are operated with state-of-the-art transmission and signalling systems for synchronisation and can be integrated in complex clock structures as master clocks and slave clocks. Their precision engineering is hidden in high-workmanship, sturdily designed housings which fit in with any room design and building architecture.

We would be more than willing to develop a system concept for you to suit your individual needs. Let us advise you – we will match any clock system flexibly to your needs. Ask to see our references: our clock systems and central clock panels go with the time, the world over.

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# Time for technology



## Pulse systems

Our range of analogue and digital clocks can be operated in clock systems consisting of a master clock and a number of slave clocks. On a pulse system, the slave clocks are operated with a 24 VDC pulse which is generated by the master clock or a central clock panel. The pulses synchronise the slave clocks once per minute, per 30 seconds or per second. In the case of analogue clocks, the pulse pattern is dependant upon whether the clocks have a second hand.

## Pulse per minute or second

The slave clocks are connected in parallel with the master clock or the central clock panel by means of a 2-wire cable. On installation, the effective time of the clock to be installed is compared with the master clock, whereby the master clock automatically sets the correct time with the corresponding number of high-speed pulses. The slave clocks stop in the event of an electrical power failure. When the power is switched back on again, they are set precisely again with the corresponding pulse pattern.

## Time-code systems

g+m elektronik ag's time-code system allows a master clock to control the slave clocks serially and transmit complete information, such as year, month, day, hours and minutes. Every slave clock features a microprocessor which receives the time code, compares it with the corresponding position of the hands by magnet and Hall sensors and then sets the hands correctly. All clocks in a time-code system are connected to a 2-wire bus cable which combines the 24 VDC voltage feeding and the serial time code at the same time. This simplifies both installation and also cable routing.

### Analogue NTP clocks for Ethernet – indoor and outdoor

A local network time server transmits the time to the NTP clocks, whereby automatic transmission can be set manually, e.g. once per minute in normal mode. The default protocol for monitoring and alarm management can be used as an option. In the event of an electrical power failure, the clocks doesn't stop.

Powering the NTP clocks:

Power over Ethernet (RJ-45 network with power supply and data via the network). This requires special network switches with PoE output.

### Wireless time systems for flexible wiring

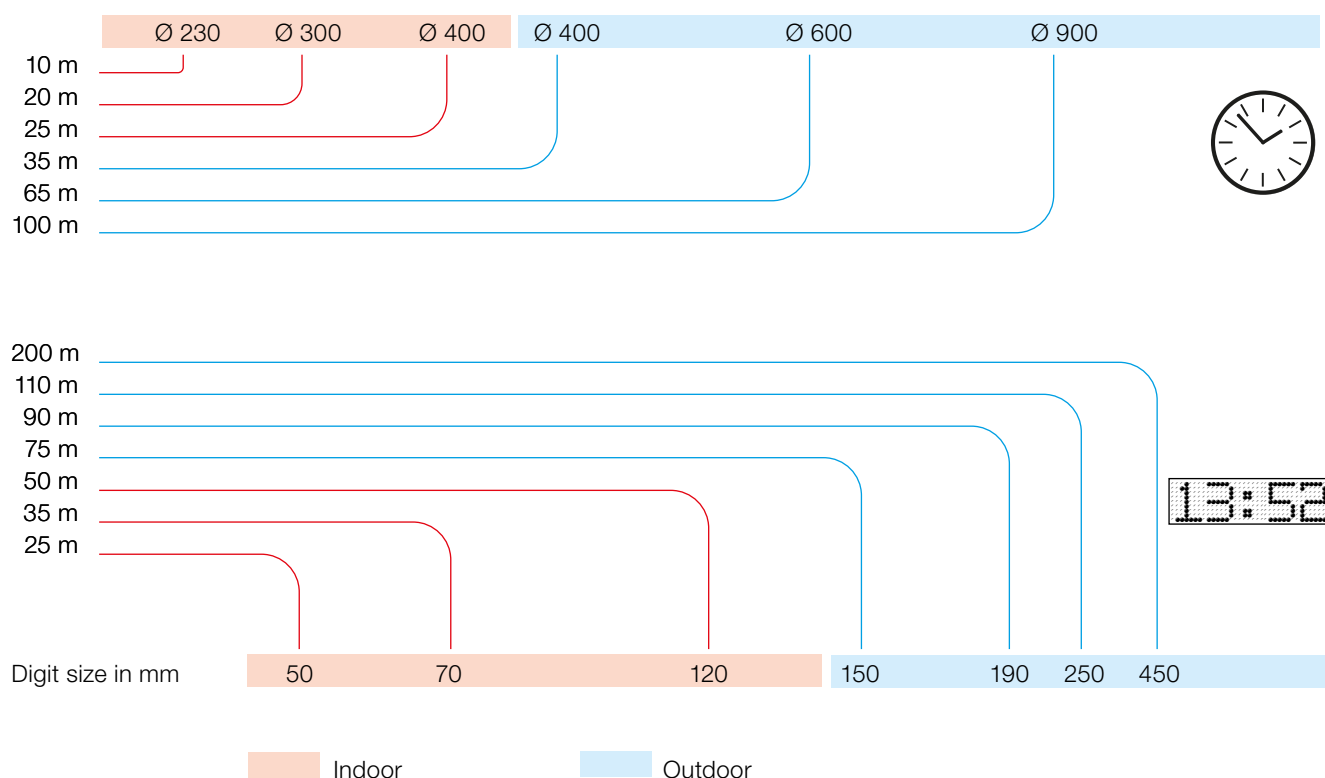
Our master clocks can be connected to a transmitter which transfers the time information wirelessly on a frequency of 869 MHz. The slave clocks can be installed at a distance of up to 200 metres depending on room conditions and wall thickness. The range of the transmitter can be adapted individually to the installations. Using repeaters to extend the network, it is possible to increase the range even further.

Wireless connection of the master clock to the slave clock may be interrupted by an electrical power failure. But the slave clock continues to run autonomously. The slave clock is synchronised and sets the current time once it receives a signal from the master clock again.

### Autonomous clocks

Our analogue clocks are powered by battery or mains. They run individually as autonomous clocks and can be controlled with the aid of a GPS, DCF or MSF receiver. Digital clocks are also available with alternating temperature, date and time display.

#### Comparison of visual range of analogue and digital clocks



# Comparison of clocks

## MASTER CLOCKS AND CENTRAL CLOCK PANELS

### Master clocks and central clock panels

When it is important that all clocks show exactly the same time, this is where the clock system comes into its own. All analogue and digital slave clocks connected to their central clock panel are controlled with one uniform time. The heart of every clock system is the master clock. It functions as a timer. Its internal quartz timebase guarantees an accuracy of  $\pm 0.1$  seconds per day.

### Pulses accurate to the second

The master clock evaluates the time and date information using a radio receiver. It corrects possible deviations and forwards the data serially in the form of pulses or as a time-code signal to all connected slave clocks. Time changes, such as changing from daylight saving time to wintertime, can either be performed fully automatically or can be freely configured. Thanks to time-code synchronisation, the slave clocks set themselves automatically even after a long power failure and run again accurate to the second in a very short time.

### Diverse convenience features

Accurate switching operations that can be triggered by the master clock are an attractive feature for schools, public institutions or industrial concerns. It is thus possible to trigger visual and audible signaling devices to start break times or working times by means of additional signaling and switching circuits. These so-called floating contacts can also be used to control lighting, air-conditioning, ventilation, heating and alarm systems easily and in operator-friendly manner.

### Technical data

Slave clock output	1 A (output with electronic short-circuit protection)
Minute pulse	24 V; pulse duration 2 seconds (selectable 1–4 seconds)
Second pulse	24 V; pulse duration 0.5 seconds (selectable 0.1–1 seconds)
Power reserve	72 hours (pulse memory with high-speed pulses after power failure)

### Programming

Signal points	800
Switching programs	On/Off pulse with selectable duration Daily, weekly and twilight program
Program memory	10 years (lithium battery)

### Circuits

Relay length	2 floating changeover and 2 NO contacts
Max. loading, relay output	230 V/6 A
Total load, relay outputs	4 × 6 A

### General data

Operating voltage	230 V/ 50Hz (-5%, +10%) alternatively 24 V DC (-5%, +20%)
Total connected electrical load	18 VA
Ambient temperature	0 °C to 40 °C
Relative humidity	Maximum 85 %



**Master clock APS-57.1**

- Slave clock output until 1.8 A
- Minute pulse
- Time Code
- 8 circuits
- Module for APS System



**Master clock GM-HU-3000**

- Slave clock output 1 A
- Minute pulse
- Time code
- AFNOR (GM-HU-3000-2)
- 4 circuits
- For 19" rack mounting



**Master clock Pro Line 19"**

- Slave clock output modular
- For 19" rack mounting
- All synchronisation modes
- Maximum operational reliability
- Reliability thanks to redundancy



**Master clock GM-HU-MM**

- Slave clock output 0.5 A
- Minute pulse
- Time code
- GM-HU-MM-P1 = 1 relay



**Master clock WDP-Q-TC**

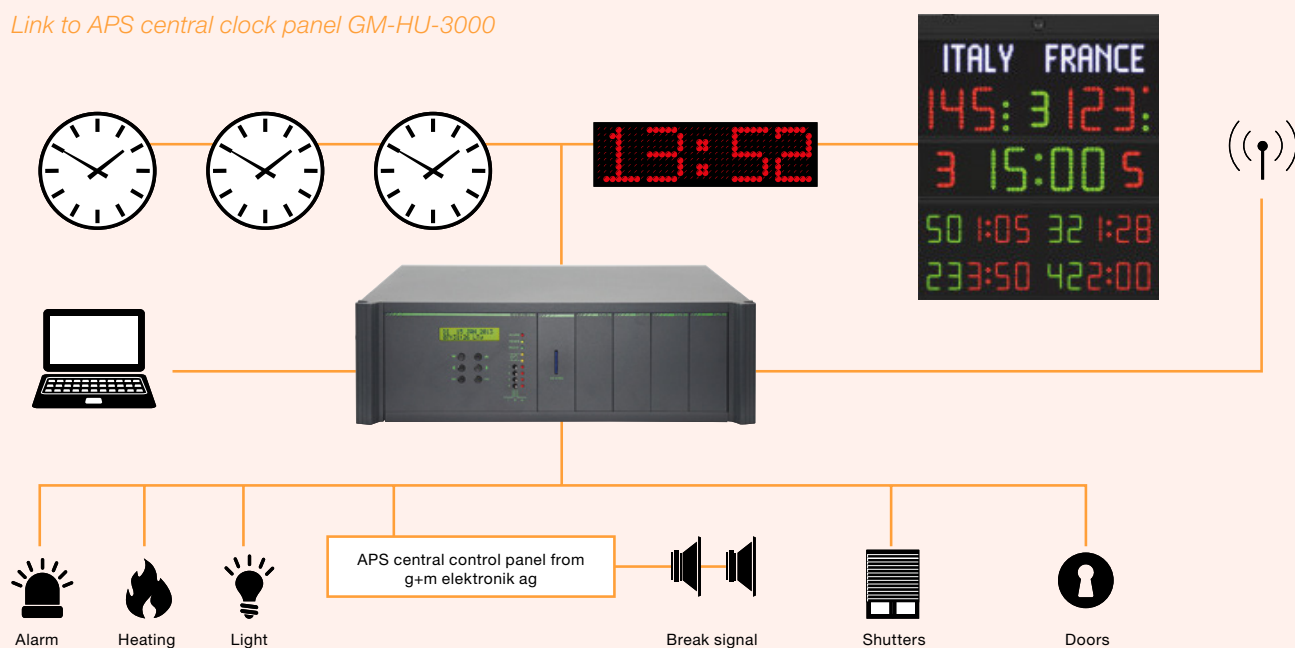
- Slave clock output 1 A
- Minute pulse
- Time code



**Master clock WDP-Y4-MINI-W1**

- Slave clock output 2 A
- Minute pulse
- Time code
- 4 circuits

*Link to APS central clock panel GM-HU-3000*



# Perfect timing

## SYNCHRONISED MASTER CLOCKS

The master clock of a central clock panel is synchronised with a uniform time signal which it receives by DCF or GPS receiver.

### **Synchronisation by DCF signal**

If DCF technology is used, the signal of the DCF-77 long-wave transmitter in Mainflingen near Frankfurt am Main, Germany, is received. This German transmitter supplies the radio-controlled clocks within a radius of around 1'500 km with signals for CET which it, in turn, receives as a time signal from the most accurate clock in the world: the cesium timebase in the German National Standards Laboratory (PTB) in Brunswick, Germany.

The DCF-77 signal contains the current time and date information. It sets the radio clock fully automatically within a few minutes during commissioning or restart. The switch to daylight saving time is also performed automatically.

However, signal transmission may be impaired by various interference sources at the reception location, e.g. motors, data terminals, monitors, corona discharges on high-voltage pylons or also thunderstorms on the transmission path. If a thunderstorm or a violent storm occurs at the transmission location of Mainflingen, Germany, broadcasting is discontinued fully for the duration of the thunderstorm, which may last up to several hours.

### **Synchronisation by GPS signal**

The global navigation satellite system GPS is available for maximum precision without restriction. Numerous satellites in six different orbits circle the earth twice daily at an altitude of around 20'000 km. There are two atomic clocks which can lose only one single second in a million years located on board each satellite. By means of the GPS signal, the satellites constantly transmit their orbit positions and the time at a frequency of 1.57542 GHz. The GPS signal achieves an accuracy of one billionth of a second with a location accuracy of one metre at the reception location of the GPS antenna.

Owing to the high transmission frequency of 1.57542 GHz, the GPS signal is virtually unsusceptible to interference. Time shifts in the region of picoseconds occur at most and these result from atmospheric layer transitions. The availability of the time in the GPS signal is 100 percent with an unobstructed view of the horizon. With a half-obstructed view it is still 90 to 95 percent. However, the low transmit power of the satellites and the high frequency do require short cable routes between GPS antenna and electronic circuitry in order to still filter out interfering frequencies in the cables adequately.



# Analogue clocks

## INDOOR AND OUTDOOR

The classic – the analogue clock with the two hands is known throughout the world from railway station forecourts, school playgrounds and church steeples. g+m elektronik can provide you with a broad range of analogue clocks comprising many attractive design variants.

Be it with a frame made of plastic or aluminium, in white, grey or any RAL colour – our analogue clocks are eye-catchers. We offer you variants in various sizes, single-sided or double-sided, for wall or ceiling mounting. Opt for curved or flat glass, with or without second hand, and line dial or regular dial with numbers. If you so wish, we can also design an individual dial for you. Our analogue clocks are also available as damp-proof and weatherproof versions.

### Indoor and outdoor, round Enclosure: IP65

										Synchronisation		
		Version			Second hand		Dial		Slave Mode			
Ø in mm	Metal or acrylic glass cover	Single sided	Double sided	LED illumination	Creeping	Jump-type	Numbers	Lines	Impulse 24 V	TC	230 V Stand alone	
Ø 300	•	•			On request	On request	•	•	•	•		
Ø 400	•	•		•	On request	On request	•	•			•	
Ø 500	•	•	•		On request	On request	•	•	•	•		

### Indoor, square

										Synchronisation	
		Version		Second hand		Dial		Slave Mode			
Size in mm	Metal or acrylic glass cover	Single sided	Double sided	Creeping	Jump-type	Numbers	Lines	Impulse 24 V	TC		
230 × 230	•	•	•			•	•	•	•		
300 × 300	•	•	•			•	•	•	•		
400 × 400	•	•	•			•	•	•	•		

# Analogue clocks

## INDOOR AND OUTDOOR

### Clock system with analogue clocks

You have the option of having a master clock control several analogue clocks as slave clocks. Your advantage is that all connected slave clocks are operated centrally and thus show a uniform time.

### Optimally integrated

If the master clock features a radio receiver, all connected slave clocks show the accurate time from the radio transmitter. In this case, an alternating-polarity minute pulse with 12, 24, 48 or 60 Volt is transmitted

to the so-called slave clock line via a 2 or 4-wire line. All slave clocks are connected in parallel to the slave clock line.

### Good timing

On analogue clocks, the minute pulse and the operating voltage are identical. A slave clock mechanism with minute pulse for a single-sided analogue clock corresponds to a power of approx. 5 mA with 24 V line voltage. The total power consumption of all slave clocks results from the number of slave clocks to be controlled, the line length and the

wire cross-section. It may not exceed the total output power of the required master clock.

### Reliable clock systems

Additional rechargeable power reserve batteries for the master clock allow all connected analogue clocks to continue to run for a certain time in the event of power failure. Switchover between daylight saving time and winter-time is performed automatically.

### Indoor, round

Ø in mm	Version		Second hand		Dial				
	Alu	Plastic	Single sided	Double sided	Creeping	Jump-type	Numbers	Lines	Fine Lines
Ø 230	•	•	•	•	On request	On request	•	•	On request
Ø 300	•	•	•	•	On request	On request	•	•	On request
Ø 400	•	•	•	•	On request	On request	•	•	On request

### Indoor and outdoor, round

Enclosure: Indoor IP52, Outdoor IP54

Ø in mm	Alu	Back-lighting	LED illumination	Version		Second hand	Dial		Impulse 24 V
				Single sided	Double sided		Numbers	Lines	
Ø 400	•	On request	On request	•	•	On request	•	•	•
Ø 600	•	On request	On request	•	•	On request	•	•	•
Ø 900	•	On request	On request	•	•	On request	•	•	•

Wide range of versions

Design, colour and equipment-complement variants

Clock system with master and slave clocks

Control via radio receiver

Rechargeable power reserve batteries in the event of power failure



Synchronisation				
Slave Mode				
DIN Line	Impulse 24 V	Time Code	NTP	Wireless
On request	•	•	•	•
On request	•	•	•	•
On request	•	•	•	•

Synchronisation					
Slave Mode			Autonomous		
Time Code	NTP	Wireless No second hand	DCF Battery-operated/230 V	GPS 230 V	Quartz No second hand Battery-operated
•	On request	•	•	•	•
•	On request	•	•	•	•
•	On request	•	•	•	•





Opalys-7



Opalys-14



Opalys-Ellipse



Opalys-Date

Accessories		
Ceiling/wall bracket		Table support
1-sided	2-sided	
•	•	•
•	•	•
•	•	•
•	•	•



Cristalys-7



Cristalys-14



Cristalys-Ellipse



Cristalys-Date

Accessories		
Ceiling/wall bracket		Table support
1-sided	2-sided	
•	•	•
•	•	•
•	•	•
•	•	•

# Digital LED clocks

## STYLE

Due to its excellent readability, this LED indoor clock is often used in the education, finance, healthcare, transport and industry sectors. The Style clock series features a slender, black plastic housing (ABS) with wall bracket – a matt glass front prevents unwelcome light reflections. Time, date, temperature, day and week are displayed in red, yellow, green, blue or white.

All models in the Style series have the following characteristics:

- Figures measuring 5, 7 or 10 cm in height with permanent or alternating display (hour, minute, day, date, week or temperature)
- Eco mode (programmable energy-saving function for certain time intervals)
- Four brightness levels
- Various synchronisation types (see table)
- Pre-programmed changeover from summer/winter time
- 12-hour or 24-hour display
- 12 languages

Clocks		Options											h/min
		Display colour					Synchronisation						
Model	Dim. (W × H)	Red	Green	Yellow	White*	Blue*	AFNOR	DCF*	DHF	Impulse	Quartz	NTP*	
Style-5	243 × 106 mm	•	•	•	•	•	•	•	•	•	•	•	•
Style-5-EB	243 × 106 mm	•					•		•	•	•	•	•
Style-5S	368 × 106 mm	•	•	•	•	•	•	•	•	•	•	•	•
Style-5S-EB	368 × 106 mm	•					•		•	•	•	•	•
Style-7	320 × 140 mm	•	•	•	•	•	•	•	•	•	•	•	•
Style-7-EB	320 × 140 mm	•					•		•	•	•	•	•
Style-7-IP55	320 × 140 mm	•					•		•	•	•	•	•
Style-7E	320 × 320 mm	•	•	•	•	•	•	•	•	•	•	•	•
Style-7D	320 × 320 mm	•	•	•	•	•	•	•	•	•	•	•	•
Style-7D-EB	320 × 320 mm	•					•		•	•	•	•	•
Style-7D-IP55	320 × 320 mm	•					•		•	•	•	•	•
Style-10	517 × 209 mm	•	•	•	•	•	•	•	•	•	•	•	•
Style-10-EB	517 × 209 mm	•					•		•	•	•	•	•
Style-10-IP55	517 × 209 mm	•					•		•	•	•	•	•
Style-10S	849 × 209 mm	•	•	•	•	•	•	•	•	•	•	•	•
Style-10D	654 × 346 mm	•	•	•	•	•	•	•	•	•	•	•	•
Style-10SD	654 × 346 mm	•	•	•	•	•	•	•	•	•	•	•	•
Style-Mondiale-3	875 × 213 mm	•	•	•	•	•	•	•	•	•	•	•	•
Style-Mondiale-4	1140 × 213 mm	•	•	•	•	•	•	•	•	•	•	•	•
Style-Mondiale-5	1405 × 213 mm	•	•	•	•	•	•	•	•	•	•	•	•
Style-Mondiale-6	1670 × 213 mm	•	•	•	•	•	•	•	•	•	•	•	•
Style-Mondiale-7	1935 × 213 mm	•	•	•	•	•	•	•	•	•	•	•	•

\* Only for extra charge



Style-5



Style-10S



Style-7E



Style-10D



Style-10-SD



Style-7D



Style World time clock

Display			Special features		Accessories			
Permanent display			Installation	IP55	Ceiling/wall bracket		Housing	DCF
h/min/sec	h/min/date	h/min/sec/date			1-sided	2-sided		
					•	•		•
			•				•	
•					•	•		•
•			•				•	
					•	•		•
			•				•	
				•				•
	•		•		•	•		•
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# Digital LED clocks

## LUMEX 5, 7, 12

Our digital clocks LUMEX 5, 7 and 12 combine precision with elegant, modern design. The series of high-quality LED digital clocks is proof of how good punctuality can look in indoor areas. The digital display, in addition to the standard version in red, is also available in yellow and green. The luminous intensity can be adjusted manually and is adapted automatically to the ambient lighting.

The LUMEX clocks already contain the TC, 24 V minute pulse and stand-alone synchronisation systems. It is possible to switch over automatically between time, date and the optional temperature display, whereby the interval can be set manually. Our LUMEX 5, 7 and 12 digital clocks turn into perfect chronometers with radio remote control or cable remote control.

### Operating modes

- Autonomous
- Slave clock minute pulse 24 VDC pol. or time code from master clock
- NTP
- Wireless

### Mounting/Installation

- Single or double-sided wall or ceiling mounting
- Wall panel mounting

### Options

- Radio synchronisation RDS
- Radio synchronisation DCF-77
- GPS satellite synchronisation
- Temperature sensor
- Chronometer including Remote Control



LUMEX 5, 7, 12



LUMEX 5, 7, 12 S

### Indoor areas

	Version		Digit size			Colours			Synchronisation			
	Single sided	Double sided	5	7	12	Yellow	Red	Green	Slave Mode			
Display									Impulse 24 V	TC	NTP	Wireless
HH:MM	•	•	•	•	•	•	•	•	•	•	•	•
HH:MM:SS	•	•	•	•	•	•	•	•	•	•	•	
HH:MM, panel-mounting	•			•	•	•	•	•	•	•	•	
HH:MM:SS, panel-mounting	•			•	•	•	•	•	•	•	•	
HH:MM:SS, date	•		•				•		•	•		
HH:MM:SS, date alphanumeric	•		•				•		•	•		



## LUMEX 15-45

Our LUMEX 15-45 series is ideally suited to indoor and outdoor areas. The standard version of the rugged LED digital clocks in red is also available in yellow and, for the indoor clocks, also in green. The luminous intensity can be set manually and it is matched automatically to ambient lighting.

The LUMEX clocks already contain the TC, 24 V minute pulse and stand-alone synchronisation systems. It is possible to switch over automatically between time, date and the optional temperature display, whereby the interval can be set manually. Our LUMEX digital clocks 15-45 turn into perfect chronometers with radio remote control or cable remote control.

### Operating modes

- Autonomous
- Slave clock minute pulse 24 VDC pol. or TC from master clock
- Wireless

### Mounting/Installation

- Single or double-sided wall or ceiling mounting with bracket

### Accessories

- Bracket for double-sided wall or ceiling mounting

### Options

- Radio synchronisation RDS
- Radio synchronisation DCF-77
- GPS satellite synchronisation
- Temperature sensor
- Chronometer including remote control



LUMEX 15-45 with time/date interval display



Optionally with temperature display



LUMEX 15-45 S

### Indoor and outdoor areas

Display	Version		Digit size					Colours			Synchronisation			
	Single sided	Double sided	15	19	25	30	45	Yellow	Red	Green	Slave Mode			
											Impulse 24 V	TC	NTP	Wireless
Indoor HH:MM	•	•	•	•	•	•	•	•	•	•	•	•	On request	
Indoor HH:MM:SS	•	•	•	•	•	•	•	•	•	•	•	•	On request	
Outdoor HH:MM	•	•	•	•	•	•	•	•			•	•	On request	
Outdoor HH:MM:SS	•	•	•	•	•	•	•	•			•	•	On request	

# Digital Clocks

## COMBI CLOCKS | POOL CLOCKS



### Combi clocks – ideal for hospitals

A combination clock provides you with two time-measuring devices in one. The practical combination of analogue and digital clock is suitable for both wall panel mounting and wall surface mounting. Both clocks show the time accurately to the second, whereby only the analogue clock shows the actual time. The time elapses forwards or backwards, starting at 00:00:00 or 23:59:59, on the digital clock. It emits an audible, 65 dB-loud signal when the time elapses completely. The analogue clock is synchronised within a clock system via a master clock with a 24 V minute pulse.

Combi Chrono is the ideal combination clock for time-sensitive applications, such as in recording studios or operating theatres. Its housing made of chromium with a front panel made of polycarbonate features enclosure IP54 and can be cleaned easily, as also prescribed for the operating-theatre sector. The white dial of the analogue clock has a diameter of 300 mm. The hour and minute hands are black and the second hand is red. The digital display with black background displays red LED digits with a height of 60 mm for hours and minutes and 45 mm for seconds. The luminous intensity is 300 mcd. The clock requires a 230 V connection. The clock is controlled with an external remote control which features enclosure IP65. It can be surface-mounted or flush-mounted.



### Pool clocks – for indoor and outdoor pools

Data display in swimming baths and sports arenas plays an important role under special air and moisture conditions. The digital Pool clock for indoor and outdoor areas was specifically designed for this – it displays the time and both the water and air temperature alternately.

It fits in elegantly with any room or area design with its black aluminium housing and the dark polycarbonate front panel. The double-row LED display is available in colours red and yellow, and it is also available in green for indoor areas. On the outdoor version of the Pool clocks the display brightness adapts automatically by means of a dimmer. Three buttons are used for easy and convenient programming. Its display is used as a stand-alone unit or it is synchronised by means of a master clock with a TC or a 24 V minute pulse signal. GPS synchronisation is also available as an option. You also have the choice between a radio variant and an NTP variant and the chronometer function. The clock is mounted as a single-sided unit on the wall or as a double-sided unit on the wall or ceiling.

#### The digital Pool clock is available in the following sizes:

POOL 15	Display height	150 mm	Readoff approx. 60 metres
POOL 19	Display height	190 mm	Readoff approx. 75 metres
POOL 25	Display height	250 mm	Readoff approx. 100 metres

# World time clocks

## INDOOR

### Style LED world clock

Between three and seven time zones can be displayed on this slender world clock. The time is displayed in digits measuring 50 mm in height, with the figures for the city names measuring 30 mm in height. You can choose between the LED colours red, green, blue, yellow and white.

The clock features a black plastic housing (ABS) with wall bracket, with the matt glass front preventing unwelcome light reflections.



# Sports scoreboards

## INDOOR | MINI, MEDI AND MAXI SERIES

g+m elektronik ag offers a value-for-money range of high-quality scoreboards for sports halls with its MINI, MEDI and MAXI series of sports scoreboards. Depending on version, these scoreboards are approved by FIBA (International Basketball Federation) for Levels 1 to 3. Their modular structure allows the scoreboard to be extended easily at any time.

The wireless receiver for the GM-SCB-700 battery-operated touch-screen remote control is already fitted on models MIDI and MEDI and, in parallel, there is also the option of connecting the remote control using a Cat cable. Safety of the front panels against ball throwing has also been tested in accordance with German Standard DIN 18032-3.

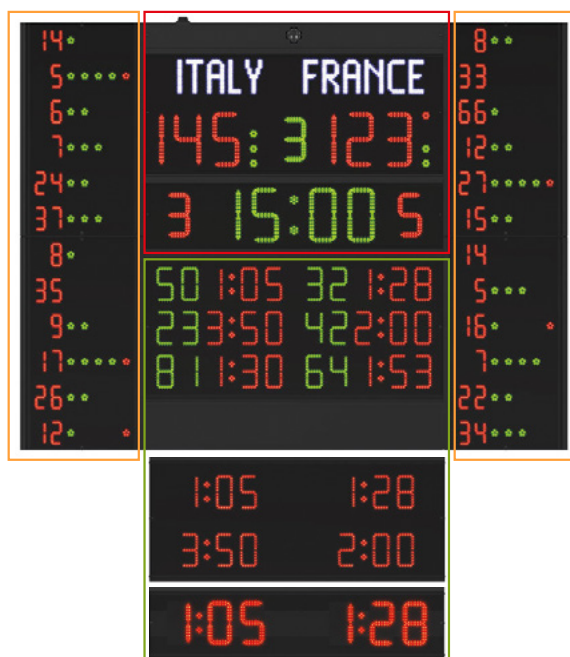
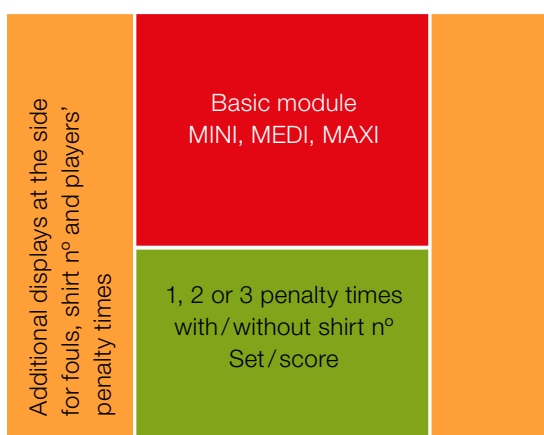
As an option, you can order a moisture-proof version of the PC boards for buildings with a high relative humidity, such as indoor ice rinks and indoor swimming pools. If modules need to be exchanged on the scoreboards after a certain time, this is no problem – all internal components are accessible from the front.

The scoreboards with the suffix «N» feature programmable LEDs. Alternating-possession arrow display, LED light strips for basketball baskets, additional displays for the 24-second rule, displays for referees and a transportable scoreboard round off the range.

### Which scoreboard provides a clear read-off?

MINI Serie	For a viewing distance of up to 50 m
MEDI Serie	For a viewing distance of up to 110 m
MAXI Serie	For a viewing distance of up to 130 m

### Modular structure of the scoreboard



**MINI Serie**

Indoor football (Futsal)  
Handball  
Hockey  
Tennis  
Volleyball, etc.

**MEDI Serie**

Badminton  
Basketball  
3 × 3 Basketball  
Boxing  
Ice hockey\*  
Indoor football (Futsal)  
Indoor hockey\*  
Handball\*  
Mini-Basketball  
Netball  
Wrestling  
Table tennis  
Volleyball  
Water polo

**MAXI Serie**

Badminton  
Basketball  
3 × 3 Basketball  
Boxing  
Ice hockey\*  
Indoor football (Futsal)  
Indoor hockey\*  
Handball\*  
Mini-Basketball  
Netball  
Wrestling  
Table tennis  
Volleyball  
Water polo

Sports

GM-SCB-FC50

GM-SCB-FC-52  
GM-SCB-FC-52N (progr. team names)  
GM-SCB-FC-54  
GM-SCB-FC-54N (progr. team names)  
GM-SCB-FC-56  
GM-SCB-FC-56-12A1 (incl. display at side)  
GM-SCB-FC-60N  
GM-SCB-FC-60N-12B2 (incl. display at side)  
GM-SCB-FC-62N (progr. team names)  
GM-SCB-FC-62N-12B2 (incl. display at side)

GM-SCB-100  
GM-SCB-100N (progr. team names)  
GM-SCB-110  
GM-SCB-110N (progr. team names)  
GM-SCB-120  
GM-SCB-120N (progr. team names)  
GM-SCB-130  
GM-SCB-130N (progr. team names)

Basic module

**2 Penalty times/Team**

GM-SCB-140

**2 Penalty times/Team**

GM-SCB-150

**Set/Score**

Volleyball and Tennis for 4 Sets

GM-SCB-160

Penalty times  
Set/Score

GM-SCB-412A (shirt n° 4–15)  
GM-SCB-414A (shirt n° 1–14)  
GM-SCB-412B (progr. digits H: 14 cm)  
GM-SCB-412D (progr. digits H: 15 cm)  
GM-SCB-414B (FIBA, progr. digits: H 14 cm)  
GM-SCB-414D (FIBA, progr. digits: H 15 cm)  
...

Additional  
displays at side**Mobile scoreboard for  
5–10 competition judges**

GM-SCB-KPB5  
GM-SCB-KPB10

**Mobile scoreboard**

GM-SCB-PS

GM-SCB-24S1-4 (FIBA, 24-second rule)  
GM-SCB-STRIPE (LED for basketball basket)  
GM-SCB-EZ (alternating-possession arrow  
display for basketball)  
...

Other  
displays

\* Scoreboards GM-SCB-52(N) and GM-SCB-100(N) are not suitable for these sports

# INDOOR | MINI, MEDI AND MAXI SERIES



Remote control GM-SCB-700



Mobile scoreboard GM-SCB-KPB10



Mobile scoreboard GM-SCB-PS



Alternating-possession arrow display GM-SCB-EZ



GM-SCB-24S-3



Various additional displays at side

## MULTISPORT, OUTDOOR

g+m elektronik ag offers a range of high-quality scoreboards for sports halls at a fair price with its scoreboards of the OUTDOOR series. Their modular structure allows the scoreboard to be extended easily at any time.

The scoreboards are suitable for operating temperatures between  $-20^{\circ}\text{C}$  and  $+50^{\circ}\text{C}$ . The viewing distance is up to 200 metres thanks to a digit height of 45 cm. All scoreboards in this series can be retrofitted with a wireless receiver for the GM-SCB-700 rechargeable battery-operated remote control. Safety against ball throwing and vandal-proof design of the front panels have been tested in accordance with German Standard DIN 18032-3. The scoreboards display the time when switched off.

### Sports

Football

### Sports

Beach volleyball

Football

Hockey

Rugby

Volleyball

### Series

GM-SCB-FOS-16

GM-SCB-FOS-26

GM-SCB-FOS-36

### Series

GM-SCB-FOS-18

GM-SCB-FOS-29

GM-SCB-FOS-39



GM-SCB-FOS-16



GM-SCB-FOS-18



GM-SCB-FOS-36



GM-SCB-FOS-29



GM-SCB-FOS-39



GM-SCB-FOS-39

Acoustics | Clocks | Evacuation



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