



TAGHeuer
by
Chrono Timing Systems *nelec*

Global Solution for Motor Racing





TAGHeuer

PROFESSIONAL TIMING



A new and unrivalled Timekeeping Global solution.

Today more than ever TAG Heuer continues to set the standard in the world of motor racing. From Jo Siffert to Kimi Raikkonen and Lewis Hamilton; from Scuderia Ferrari to Vodafone McLaren Mercedes; from FIA F1 to Le Mans and Indy 500, TAG Heuer continues its unparalleled and historic partnerships with the greatest, finest and fastest events, teams and drivers in motor racing.

TAG Heuer's involvement is stronger than ever. The standard for prestige sports chronographs and timing instruments since 1860, TAG Heuer has joined forces with Chronolec, a leader in the transponder market. Together, TAG Heuer and Chronolec are pushing timing technology to a new extreme of precision.

The partnership with Chronolec represents a bold new step in TAG Heuer's relentless pursuit of the ultimate in precision timekeeping. The partnership provides seamless expertise. Chronolec provides cutting-edge transponder technology to prestigious and extremely complex events such as the 24 Hours of Le Mans and the Le Mans Series Championship. Coupled with TAG Heuer's peerless heritage – Official timekeeping instruments for the Olympic Games in the 1920s and again in the 1980s at Moscow and Lake Placid; Official Timekeeper of the Scuderia Ferrari from 1971 to 1979; Team McLaren Official Timekeeper since 1985; the F1 World Championship from 1992 to 2003 at 1/1000th of a second; the Indy Racing League to 2004 to 2006 and the Race of Champions since 2005 at 1/10,000th of a second. Together, TAG Heuer and Chronolec continue to bring about impressive innovation in the world of timekeeping.

The TAG Heuer-Chronelec partnership is the first of its kind in the world and demonstrates the determination and commitment of two timekeeping leaders to combine forces and continue to push the envelope of timing technology.

Through the partnership with Chronolec, TAG Heuer has consolidated its timing knowledge and professionalism to produce unique, complete timing solutions that combine ultimate precision with unsurpassed reliability. The solutions are modular, expandable and easy to use, satisfying all types of timekeeping from the most straightforward requirements to the most demanding and complex configurations.

Continuing a tradition spanning 150 years, TAG Heuer's quest for ultimate precision continues; providing motor sports the with the opportunity to enjoy the most precise timekeeping solutions in history.

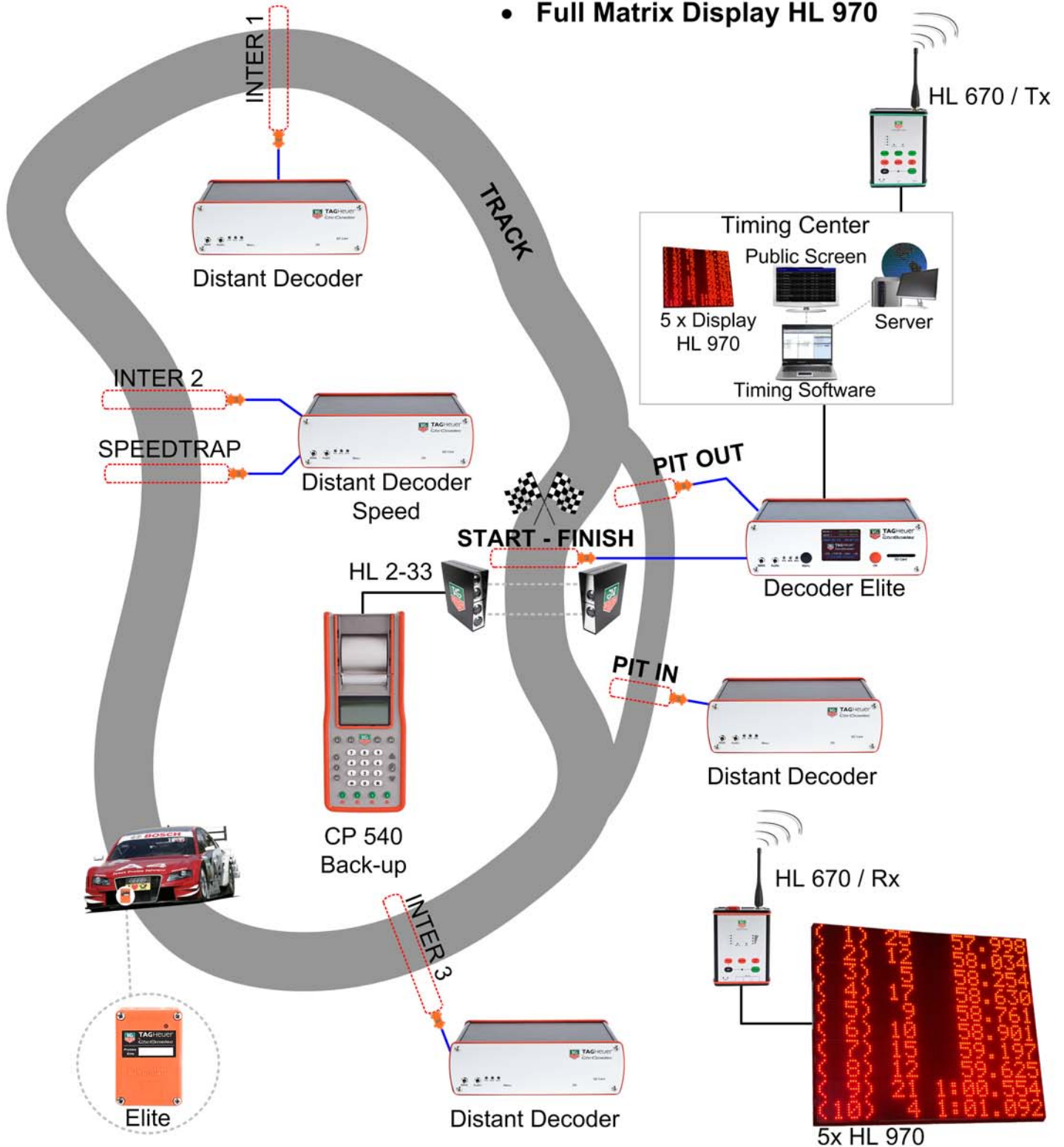


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Circuit & Road Racing Solution

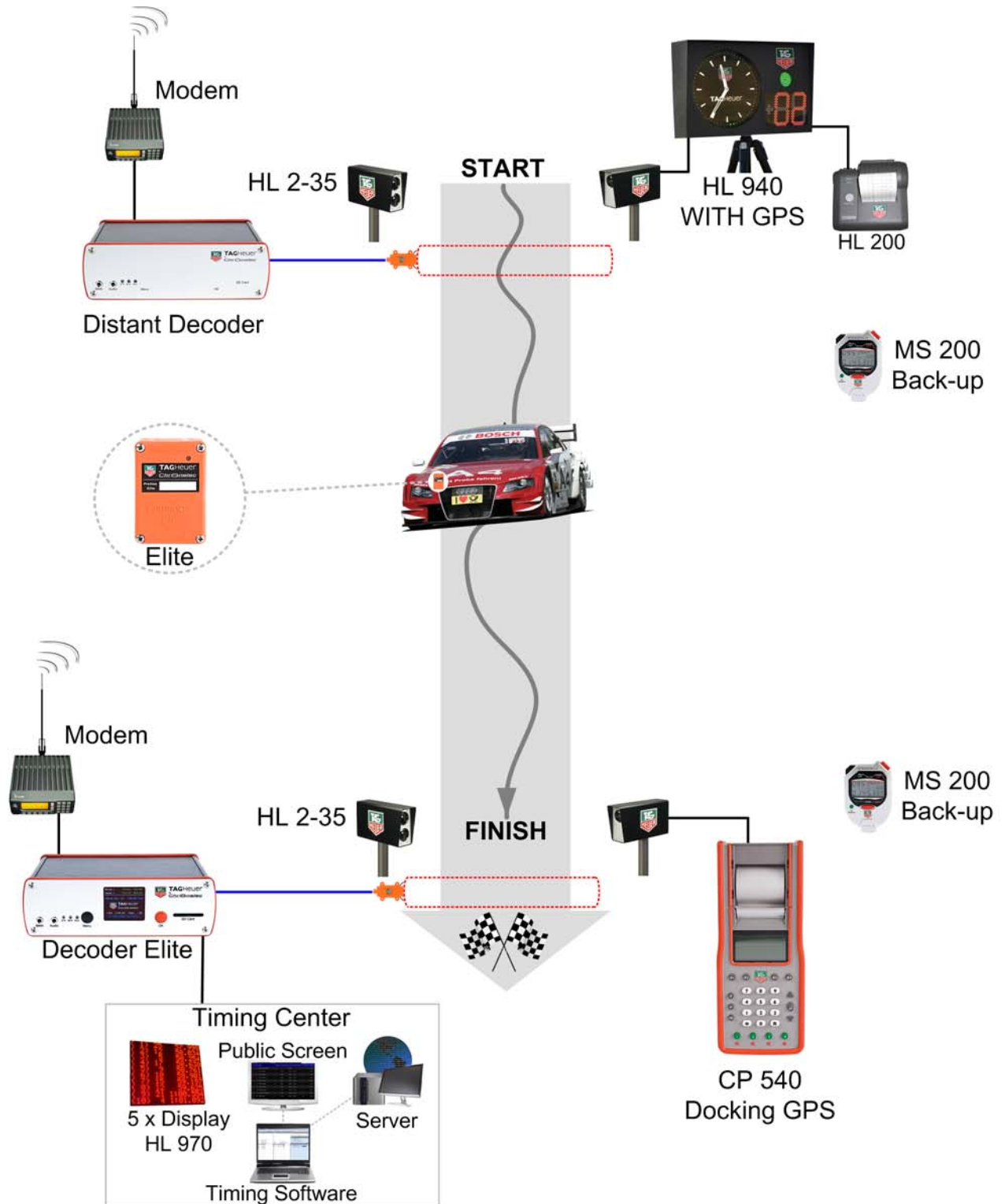
- Decoder Elite
- Decoder Distant
- Transponder Elite
- Chronoprinter 540
- Photocells HL 2-33
- Radio Impulse / Data (500mW) HL 670
- Full Matrix Display HL 970





Sprint & Hill-Climb Transponder Solution

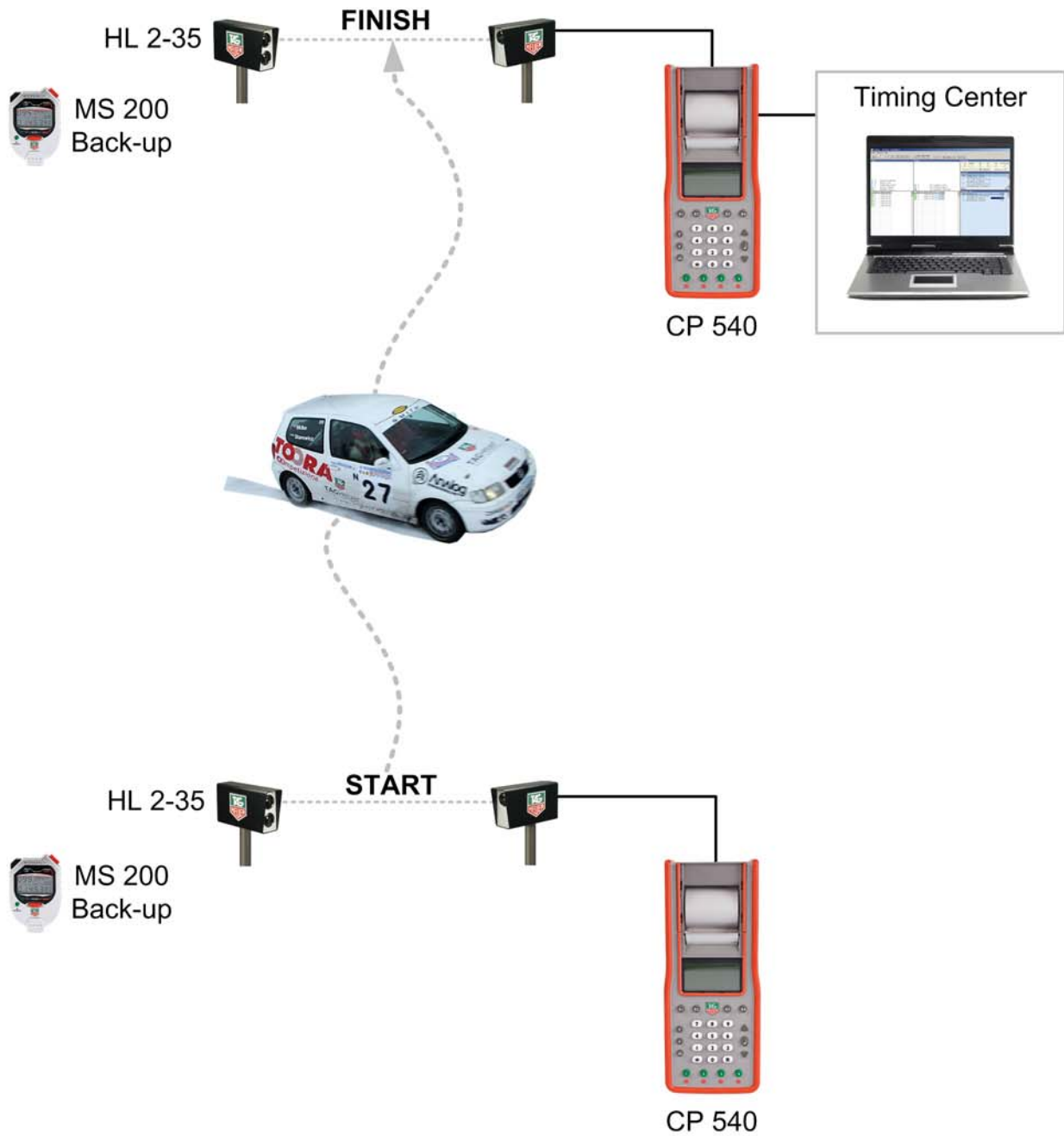
- Decoder Elite
- Decoder Distant
- Transponder Elite
- Chronoprinter 540
- Photocells HL 2-35
- Start Clock HL 940 + Printer HL 200
- Microsplit MS 200





Sprint & Hill-Climb Photocells Solution

- Chronoprinter 540
- Photocells HL 2-35
- Microsplit MS 200

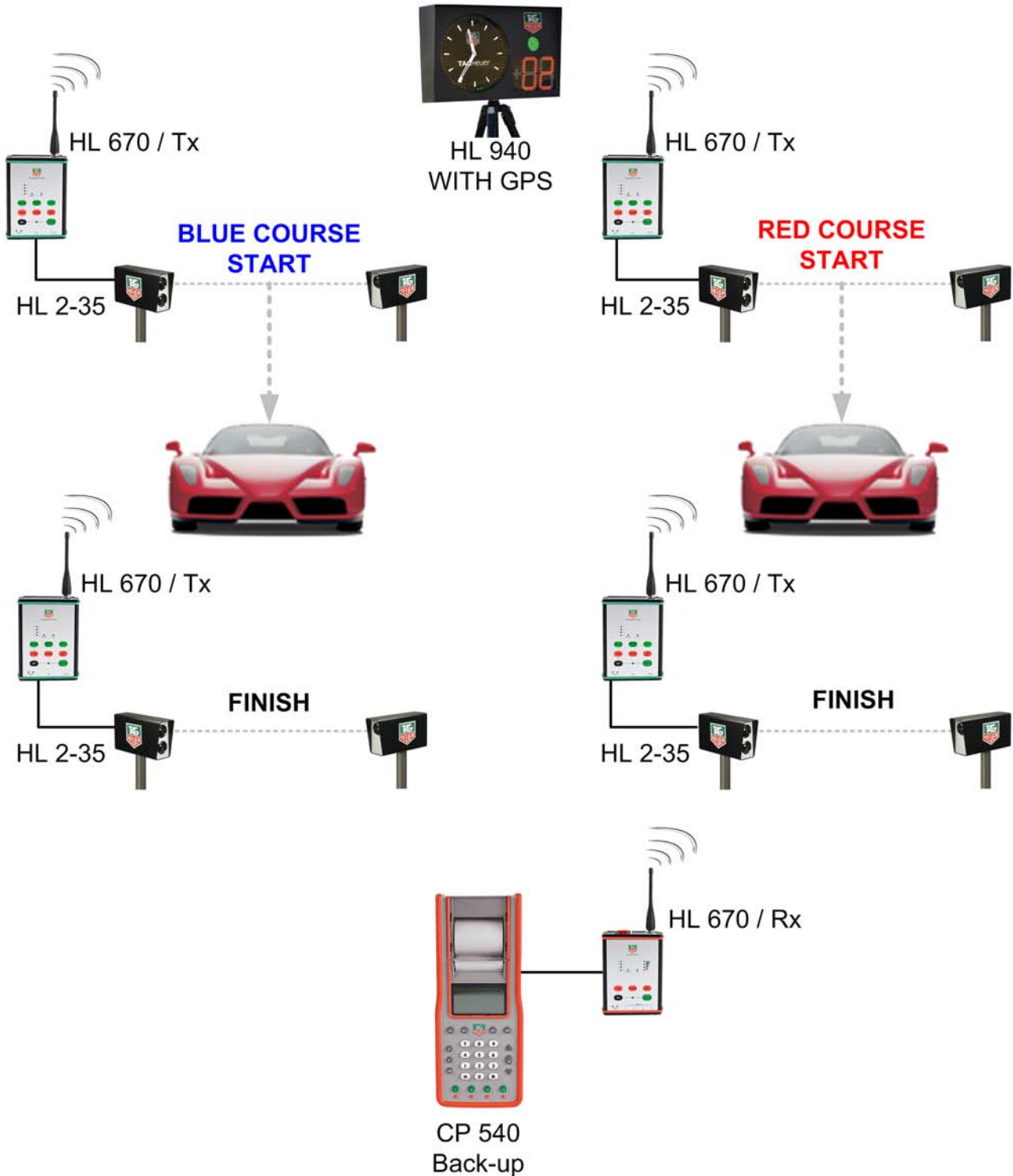


Transmission of the timing information and Bib No. Via Mobile phone, talky walky, voice communications, radio..ect. In this case, not supplied by TAG Heuer



Drag Racing & Autotest Solution

- Chronoprinter 540
- Photocells HL 2-35
- Radio Impulse/Data (500mW) HL 670
- Start Clock HL 940





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PROTIME ELITE DECODER



Protime Elite Decoder

- Color display
- GPS synchronization
- Resolution : 0.001 sec.
- SD Card removable memory
- Emergency power supply integrated
- Management of up to 32 loops

Description

The most accurate, flexible and reliable decoder in the world, the Protime Elite Decoder is suited to racing that requires the ultimate in precision (down to 1/1,000th of a second). The decoder stores all competitor's passings on an SD card, allowing easy restore in the case of unforeseen problems with computers or networks.

The Protime Elite Decoder incorporates an internal battery which allows continuous operation even during a power failure lasting up to two hours.

The graphic OLED displays provides real-time status information, allowing access at a glance to noise levels, loop detection level and last transponder crossing. It also includes the race time or time of day as supplied by either the inbuilt GPS or the connected computer.

The decoder has both an RS232 interface and a network connection for communication to the computer running the timekeeping software.

Connections

- 2 loops input (track loop and pitlane loop)
- 1 photocell input
- 1 manual input (to simulate a transponder passing)
- 1 audio output (beep for each transponder passing)
- 1 AUX output (intermediate loops)
- 1 RS232 output
- 1 Ethernet output (IP address)

Detection loop

- Maximum width of the track (passive loop) : 25 m (82 ft)
- Maximum width of the track (active loop) : 10 m (33 ft)
- Maximum length of the coaxial cable : 100 m (330 ft)

Compatible products

- Protime ELITE Pro, ELITE, LS, RK, RCS transponders
- Active and Passive loop
- Distant decoder

3 Year Warranty

Specifications

Clock stability

Oscillator TCXO 0.5 ppm

Power

12 VDC via adapter

Temperature range

-20 to 55 °C (-4 to 131 °F)

Dimensions

160 x 100 x 52 mm
6.3 x 3.9 x 2 in

Resolution

0.001 s

GPS Synchronization

SD Card (stores all passings time)

Intermediate loops (1 to 32)



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DISTANT DECODER



Distant Decoder

- Is driven by a Prottime Elite Decoder
- Internal memory to save passings
- Secure communications protocol with the controlling Prottime Elite Decoder
- Extremely high accuracy (down to 1/1000th of a second);

Description

The decoder provides intermediate times (“split times”) on a circuit. The Distant Decoder can be connected to the controlling Prottime Elite Decoder with either an RS485 network or a TAG Heuer radio network.

Once a passing is detected on the Distant Decoder it is securely reported to the main decoder. Up to 32 Distant Decoders can be used on your circuit.

By using two loops attached to a single Distant Decoder, you can measure an instantaneous passing speed. This configuration is extensively used to provide speed trap information by many organisations, including the test center of F1 BMW Miramas in France, Madras India, FFSA (French Federation of Auto Sport).

Connections

- 1 loop input (finish line)
- 1 photocell input
- 1 manual input (to simulate a transponder passing)
- 1 audio output (beep for each transponder passing)
- 1 AUX output (red lights, horn)
- 1 RS485 or RS232 output

Option

- 2 loops input (Speed Trap)
- 1 GPS synchronisation
- 1 SD Card reader

Detection loop

- Maximum width of the track (passive loop) : 25 m (82 ft)
- Maximum width of the track (active loop) : 10 m (33 ft)
- Maximum length of the coaxial cable : 100 m (330 ft)

Compatible products

- ELITE PRO and ELITE decoder

Specifications

Clock stability

Oscillator TCXO 0.5 ppm

Power

12 VDC via adapter

Temperature range

-20 to 55 °C (-4 to 131 °F)

Dimensions

160 x 100 x 52 mm
6.3 x 3.9 x 2 in

Resolution

0.001 s

3 Year Warranty



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PROTIME ELITE TRANSPONDER



Protime Elite Transponder

- Capable of running 5 days between charging
- 14-18 hours charging time on a battery with no “memory effect”
- Transponder automatically powers down while being charged
- Battery and direct power versions available
- 100% reliability at up to 360km/h

Description

The Protime Elite Transponder is recommended for vehicles that are likely to exceed 200km/h (125mph) at any of the timing loops and is capable of providing precise timing even with vehicle speeds exceeding 360km/h (225mph).

Two power options for the Protime Elite Transponder are available: memory-effect-free NiMH battery or direct wiring to the vehicle's battery.

The rechargeable version of the transponder automatically powers down when it is in the charger, allowing the transponder to be safely stored in its charger for days, week or even months at a time. Only one charge per year is necessary to keep the transponder in excellent condition. At every passing the current charge level of the transponder is reported to the timing software allowing proactive action to be taken in the event of a transponder with a low charge.

Features

NiMH battery

- Single Charges lasts for up to 5 days
- Complete recharge in 14 – 18 hours
- No “memory effect”

Specifications

- Emission : magnetic induction
- Maximum speed : 360 km/h (225 mph)
- Maximum height of detection : 2,80 m (9 ft)
- Temperature range : - 20 °C to + 70 °C (-4 to 158 °F)
- Dimensions (with NiMH battery) : 65 X 44 X 22 mm (2.6 x 1.7 x 0.9 in)
- Dimensions (with 12V Power) : 68 X 27 X 23 mm (2.7 x 1 x 0.9 in)
- Weight : 80 g (2.8 oz)

Related products (only for rechargeable transponder)

- Suitcase charger for 40 transponders and/or individual charger
- Holder and arise

3 Year Warranty



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CHRONOPRINTER CP 540



Chronoprinter CP 540

“Innovation and avant-garde give rise to excellence”

TAG Heuer has gathered all its timing know-how and professionalism to produce this new timing device, resolutely dedicated to the future, combining high technology and precision.

The CHRONOPRINTER CP 540 is the culmination of many unique design advantages, confirming TAG Heuer's extensive knowledge and experience in the field of highly precise time measurement for sport.

FLEXIBILITY

The numerous integrated timing modes such as NET TIME, PARALLEL SEQUENTIAL or PARALLEL, TRAINING, SPEED, LAP, SPLIT/LAP will satisfy the most demanding timekeeper. The CP 540 is able to accommodate the majority of sports disciplines operating as a stand-alone unit.

When connected to a PC running TAG Heuer's extensive range of race management software, it is also the ideal time base for all professional sports-timing.

PRECISION

The CP 540's precision time base and buffered inputs guarantee measurements accurate to 1/100,000 of a second.

SIMPLICITY

The hallmark of TAG Heuer timing philosophy. The operator has only a few essential keystrokes to master. Mistakes are kept to a minimum, and recovery from errors quick and painless.

COMFORT

The large graphic LCD display with backlighting affords very clear vision of the timing information in all situations. The ergonomic, intuitive, snap-action keyboard provides well-spaced and extremely precise keys. The timekeeper will easily navigate the keyboard, even with gloves on.

DESIGN

The originality of the design of the CP 540 is obvious. The choice of the materials with its robust ergonomics have been carefully studied and developed for durability in any environment.

EXPANDABILITY

The CP 540 can be programmed with future and even custom timing modes through its exclusive bi-directional connection with a PC.

DOCKING STATION

Three docking stations are available: « ACCU », « ACCU + GPS » and « ACCU + GPS + GSM »

CP 540 – TECHNICAL SPECIFICATIONS

General

- Stand-alone multi-sport timing system
- Timing calculation (Speed) to the 1/1'600'000 sec.
- Timing resolution (Printer – PC) from 1 sec. to 1/100'000 sec.
- Memory of 25'000 times and 99 timing sessions
- Sequential Nr / Competitors Nr from 1 to 9.999

Time base

- Thermo-compensated quartz 12.8 MHz
- Precision: +/- 0.5 ppm at 25° C
- Precision: +/- 1.5 ppm between -30°C and +65°C

Inputs / Outputs

- Four Inputs with banana jack for Timing impulses
- COMPUTER / Bidirectional RS232 or to drive external display
- ETHERNET
- Extension port for Docking

Power supply

- Internal: five alkaline 1.5V batteries (AA)
- External: 12 V DC by adaptor (HL540-1) or 12 V battery

Autonomy

- 6'000 printed times with one battery set

Dimensions / Weight

- 270 x 100 x 65 mm
- CP 540 without transport case: 860g. (with batteries and 1 paper roll)
- CP 540 with transport case and power supply : 1'800g.

Display

- Matrix LCD display with backlighting
- Eight information lines with 21 characters
- Adjustable contrast and brightness



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START CLOCK HL 940



Start Clock HL 940

Nothing less than the most high-performance start device ever conceived, the **new HL940 TAG Heuer Start Clock represents a breakthrough in the timing world**, combining an unique analogic dial and LED full colour display design to give unparalleled precision and practicality in the pure avant-garde tradition of TAG Heuer.

This new and unique architecture, inspired from the well-known TAG Heuer original start clock, the undisputed leading timing device in the rally car racing, introduces a **new generation of Start devices**, free of any constraint and displaying timing data and information in the most logical and elegantly way possible.

Its many innovative features include:

- GPS antenna integrated
- Outdoor LED 2 digit display for Count Down (120mm high)
- Outdoor LED in 3 colors for seconds display
- Outdoor LED in 3 colors (up to 64) for the Start Light
- Two reflective needles to show hours and minutes in classic analog fashion
- Internal high-volume horn
- Two timing modes available: Precision Time Base with sequential numbering, and Split mode with bib number.
- Up to 50 different programs for the start process
- Easily accessed side control panel
- Two input channels for external switching device (photocells, start gate or other normally-open devices)
- Three bidirectional RS232 / RS485 data ports (PC / AUX 1 / AUX 2) for PC, external printer (HL 200), Display etc.
- One Input for "Start / Stop / Restart" function
- One output "Top Minute," output impulse to synchronize with other timing devices
- One output "Top Synchro" output impulse at the precise time of start
- External plug for GPS
- External Jack plug for additional horn
- Three expansion slots for ethernet connection, GPRS, etc
- Standard communication protocol "THCOM-08"
- Compliant with all M-sports Timing Software

TECHNICAL SPECIFICATIONS

General

- An integrated GPS receiver ensures the exact synchronization to the official time-of-day at your location.
- In addition to the analogue movement, two seven-segment numeric indicators visually countdown the remaining seconds to each start interval.
- Further, another indicator comprised of a rotating red, green and yellow disk provides information on start validity.

Time Base

- 16 MHz Thermo compensated Quartz
- +/- 0,5 ppm at 68° F (20°C)
- +/- 2,5 ppm from -22° F (-30°C) to 167° F (75°C)

Temperature Range

- 77° F (-25° C) to + 167° F (75° C)

Power Supply

- Internal: 12V DC rechargeable battery
- External: 12-18V DC source

Autonomy

- 18 hours at 68° F (20° C)
- 8 hours at -90° F (-20° C)

Dimensions/Weight

- 6 kg alone (11,5 kg with transport case)
- 320 x 500 x 115 mm
- Clock face diameter: 270 mm
- Digits height: 110 mm



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PHOTOCELL RALLY

HL 2-33



Photocell Rally

HL 2-33

« For maximum reliability »

TAG Heuer's extensive experience in the development of infrared photocells has led to the production of highly reliable and precise instruments that are very stable in adverse conditions.

- This photocell system uses two physically separate but electronically synchronized photocell transmitters and two independent receivers that are placed on opposite sides of the timing line.
- If necessary, each pair (transmitter/receiver) can be used separately in different timing locations.
- Timing line width up to 40meters in "LOW" power position and up to 80meters in "HIGH" power position.
- The receivers feature the use of a special additional lens that helps in the precise alignment of the cells from the opposite side of the timing line.

Recommended use

- For all professional timing applications even with heavy dust
- If necessary, each pair (transmitter/receiver) can be used separately in different timing locations.

Technical specifications

General

- Infrared type photocell using a coded modulated frequency of 32.7 kHz. Triggering detection by frequency discrimination

Operating type and Distance limits

- Double Photocell, Transmitter / Receiver Type, up to 80 Meters

Output Trigger

- Infra-red photocell with internal or external power supply and 2 functions modes:
- IMPULSE mode with adjustment of duration of the output impulse (standard mode)
- DIRECT mode with timing impulse which correspond to the breaking of the Infra-Red beam. This mode makes possible the control of the good functioning and alignment of the photocells

Reaction Time

- Less than 0.5 ms

Precision

- +/- 0,02 ms for repetitive impulses

Autonomy at 20° C

- About 100 hours

Internal Power

- Three alkaline batteries type 1.5V (AA) for each (Tx / Rx)

Operating Temperature

- -20° C to + 70° C

Indicators

- LED diodes for batteries and alignment

Mounting

- Fitted for standard photographic ¼" tripod or TAG Heuer mounting brackets HL 4 / HL 4-3

Dimensions

- Hot-lacquered black aluminium case
160 x 160 x 40 mm

Weight

- 1'700 gr. complete set
All photocell sets are delivered in their own transport case



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**PHOTOCELL 80m
WITH TRANSMITTER & RECEIVER
HL 2-35**



Photocell 80m with transmitter and receiver HL 2-35

« For maximum reliability »

TAG Heuer's extensive experience in the development of infrared photocells has led to the production of highly reliable and precise instruments that are very stable in adverse conditions.

- Timing line width up to 40 meters in "LOW" power position and up to 80 meters in "HIGH" power position.
- An indicator lamp visible through a separate lens in the receiver element allows one person to easily adjust the alignment from the opposite side of the timing line.

Recommended use

- For professional timekeeping applications where timing line width exceeds 20meters.

Technical specifications

General

- Infrared type photocell using a coded modulated frequency of 32.7 kHz. Triggering detection by frequency discrimination

Operating type and Distance limits

- Transmitter / Receiver Type, up to 80 Meters

Output Trigger

- Infra-red photocell with internal or external power supply and 2 functions modes:
- IMPULSE mode with adjustment of duration of the output impulse (standard mode).
- DIRECT mode with timing impulse which correspond to the breaking of the Infra-Red beam. This mode makes possible the control of the good functioning and alignment of the photocells.

Reaction Time

- Less than 0.5 ms

Precision

- +/- 0,02 ms for repetitive impulses

Internal Power

- Three alkaline batteries type 1.5V (AA) for each (Tx / Rx)

External Power

- 6-12 VDC via 4-pole bayonet type jack.

Autonomy at 20° C

- About 100 hours

Operating Temperature

- -20° C to + 70° C

Indicators

- LED diodes for batteries and alignment.

Mounting

- Fitted for standard photographic 1/4" tripod or TAG Heuer mounting brackets HL 4 / HL 4-3

Dimensions

- Hot-lacquered black aluminium case
150 x 80 x 40 mm

Weight

- 800 gr. complete set
- All photocell sets are delivered in their own transport case



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500mW IMPULSES / DATA TRANSMISSION SYSTEM HL 670



500mW Impulses and data Transmission System HL 670

Supreme, Powerful and User Friendly wireless data and impulse transmission.

With unparalleled performance in the world of wireless data and impulse transmission the HL 670 surpasses the highest requirements for reliability and precision.

For training or competition, a powerful and simple to use device, it is the wireless timing solution that has been long awaited.

The HL 670 is ideal for transferring timing data and Impulses from photocells, start gates and other devices. With 500mW of emitting power and frequency range (869 MHz) ensures the HL 670 is licence free throughout Europe (ISM Band 869 MHz – REC 70-03)

Each Receiver can receive impulses (individually or simultaneously) from 4 transmitters, each identified by the function "CHANNEL" (1 to 4).

Up to 4 Teams can work (train) in the same area without disturbing each other thanks to the function "TEAM" which offers the ability to code each system (A, B, C, D). It is also possible to use up to 16 transmitters with 4 receivers.

Specifications:

- Frequency : 869 MHz – REC 70-03
- Power 500 mW
- Precision impulse : +/- 1/10'000 sec.
- Transmitting delay : 200ms
- Communication data : RS 232 / RS 485
- Autonomy : > 24 Hrs at + 20°C
- Number of channels : 4
- Antenna Impedance : λ 2,5 dBi / 50 Ohms
- Temperature Range : -25°C to +50°C
- Power supply : 12 V DC / 800 mA min
- Dimensions (without antenna) : 152 x 108 x 34 mm
- Weight : 470g / radio

Accu-pack Lithium-Polymer

- Type : 12V Li-Pol 2100mAh
- Charging Temperature : 0° to +40°C
- Charging Current : 800mA mini (~ 4 hours)

Charger HL540-10

- Input : 110-230V / 50-60Hz - 125mA
- Output : 12V – 1250 mA

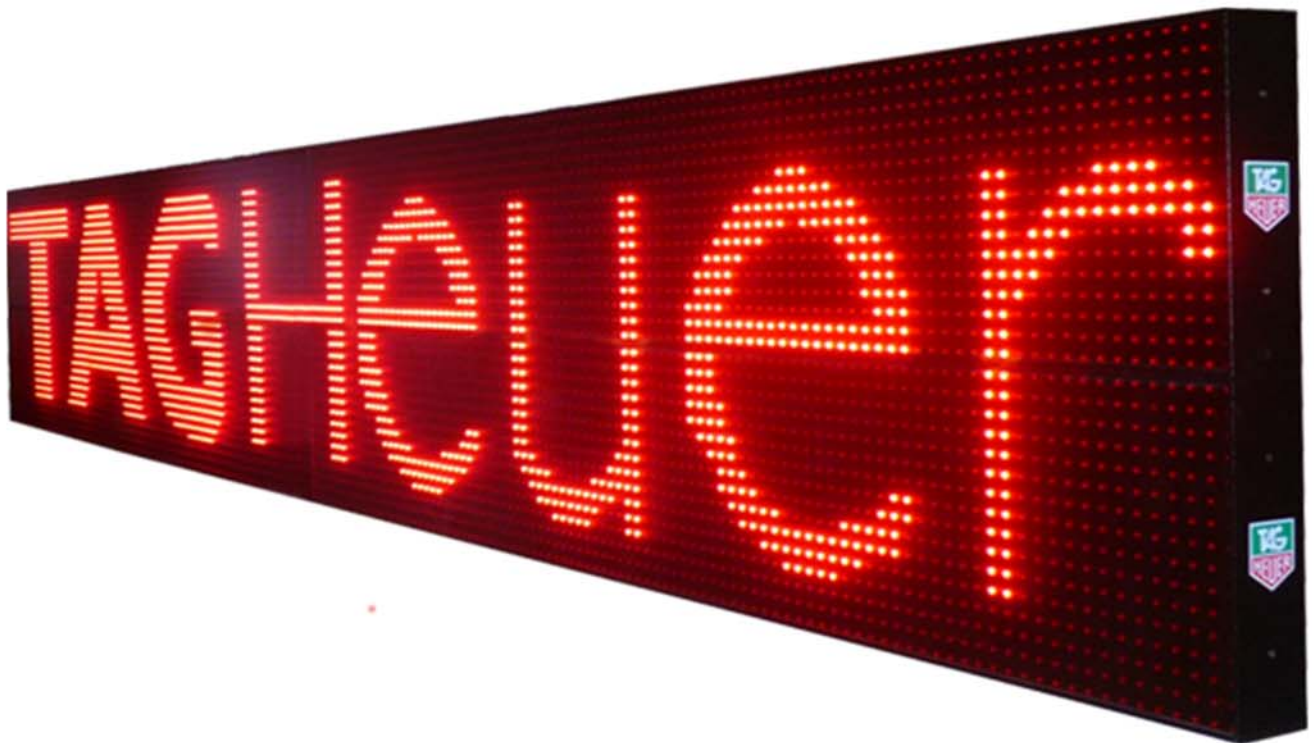


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FULL MATRIX DISPLAY HL 970



Full Matrix Display HL 970

The new TAG Heuer matrix LED display HL 970 will convince anyone considering multi-purpose uses with multiple parameter settings.

The concept proposed by TAG Heuer enables the visual representation of timing information or alternatively advertising and information messages (logo & text).

The unique structural concept and modularity offers the potential to create a large structure scoreboard.

The almost seamless design of each display allows displaying many types of logo without distortion.

The ideal dimensions and weight ensure simple transportation and set up.

A small external unit integrates the main electronics and power supply convertor.

The matrix LED display together with the purpose designed and unique Software « Easy Display » provides a large user definable and flexible array of displays complimented by the ability for advertising – messages (logo & text).

Technical Specifications

Dimension :	1580 x 290 x 80 mm (matrix 96 x 16 pixels) 5.18" x 0.95" x 0.26"
Weight :	11kg
Control Box :	250 x 200 x 100 mm (0.82x0.65x0.32")
Communication :	RS232 – RS485
Integrated power supply :	110 – 220 VAC / 12 VDC
Power consumption max :	50W
Visibility :	50 m – 164" (with characters 110mm high) 80 m – 262" (with characters 220mm high)

Example: 4x HL 970

Dimension: 318 x 53 cm



Timing Configuration

- 1 Line with 16 characters, high 22 cm (8,66")
- 2 lines with 32 characters, high 11 cm (4.33")



Timing Configuration

- 4 lines with 32 characters, high 11 cm (4.33")



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Serial Printer HL 200

High resolution printing, high speed, for HL 440 Minitimer or Start Clock HL 930



- Quiet, non-impact system
- Maintenance-free
- Compact and light-weight
- High Reliability
- Versatile for use with text or graphics
- 12, 16, 24, 32 or 48 characters per line
- Barcode capability
- Auto wake-up facility
- Supports labels and dual play paper

Specification

- Printing System Thermal line head system
- Max characters per line 48
- Character matrix 24x16, 24x12 or 24x8
- Character size 3mm x 2mm, 3mm x 1.5mm or 3mm x 1mm (Approx. 13, 17 or 25cpi)
- Horizontal dot pitch 0.125mm (Approx. 200dpi)
- Vertical dot pitch 0.125mm
- Text line composition 24x384 dots
- Printing width 48mm
- Average printing speed 10 lines per second
- Dimensions 135mm x 130mm x 64mm
- Weight Approx. 425 grammes
- Internal power supply 4.8V (600mAH, NiMH battery pack)
- Paper width 58mm
- Character set UK/United States (437)
- Country codes USA, France, Germany, UK, Denmark I/II, Sweden, Italy, Spain & Japan



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Microsplit MS 200

The TAG Heuer Microsplit is the ideal professional stopwatch for sports and the industry. Its multiple functions, its design and its ergonomics will convince you.



The Microsplit allows for the measurement and memorization of times at the time-of-day. This unique function makes it essential for the manual timing required in most sports.

Main functions:

- START / STOP / RESTART / RESET
- SPLIT (intermediate times)
- LAP (lap times and number of laps)
- SHORT LAP (scrolling of the memory and best lap)
- COUNT-DOWN (with acoustic beeps for the last 5 seconds)
- PACER (acoustic cadence from 1 to 300 beeps per minute)
- MEMORY (recall of times)

Technical specifications:

- Operating temperature from 5°F (-15°C) to 131°F (55°C)
- Autonomy of the battery about 5 years
- Battery state indicator
- 15 characters display (LCD) of 0.28 Inch (7 mm)
- Metallic gray and water-resistant ABS case
- Weight 85 g
- Dimensions 3.54 x 2.36 x 0.75 Inch (90 x 60 x 19 mm)
- Time definition 1/100th of second
- 65 memorized times
- Delivered with protection bag and user manual
- 3 year warranty



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Official agent stamp

