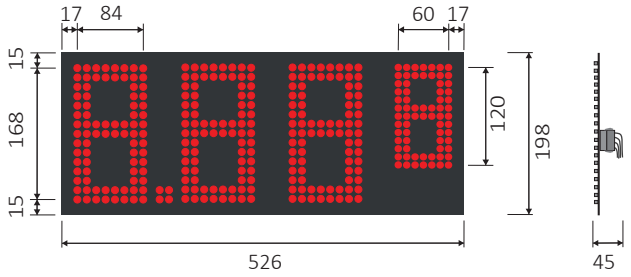
Petrol station LED display HDP168P

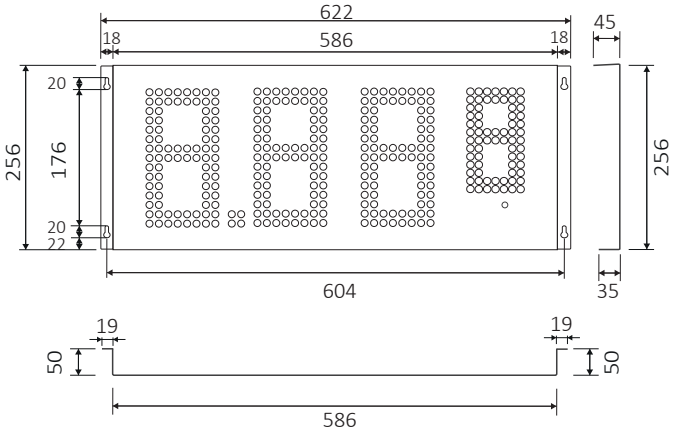
Data sheet

hitechled®
DIFFERENT LIGHTING

LED DISPLAY



ALUMINIUM FRONT PANEL



Model	Code	Description
HDP168P-B-WSMD-4	D 100 002604	LED Display, White LED
HDP168P-B-RSMD-4	D 100 002608	LED Display, Red LED
HDP168P-ALUM-FP	D 100 002635	Aluminium Front Panel

LED Display

LED display with 3 digits 168 mm high and the digit on the right 120 mm high. SMD LEDs suitable for continuous operation 24h/day and exposure to UV sunlight. Printed circuits coated with a special resin whose formula keeps it elastic over time, avoiding cracks and moisture infiltrations.

The display consists of 2 printed circuit boards connected to each other.

Technical features

Operating Voltage	DC 15 V
Max Power Comsumption	18 W
Moisture protection	By Protective Resin
Operating Temperature Range	40 C° ~ +70 C°
Storage Temperature Range	+5 C°~ +40 C°
Storage Enviroment Humidity	RH < 60%
Over-temperature protection	+75 C°
Viewing Angle	120°
No. LED	334
Lifetime typical - L70	100.000h
Warranty (See terms and contitions)	3 years
Download Attestation of Conformity	EMC Safety RoHs

Aluminium Front Panel

The front panel is made of laser-cut and numerically controlled shaped sheet aluminium, the oven painting uses a very resistant product to sunlight. Color: Black

Multi-Segment Digit 168 mm. (XS)

Multi-Segment Digit 120 mm. (XXS)

100.000 h

3 Year Warranty

RoHS CE

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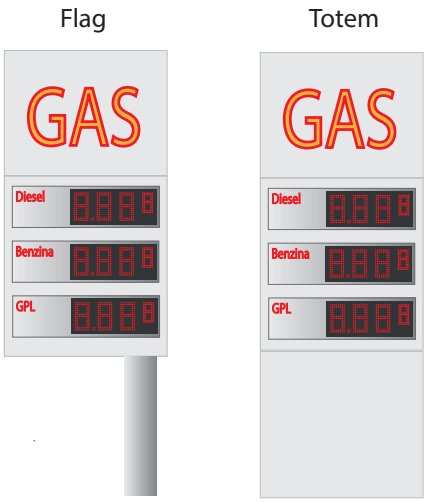
DEFINITION OF A LED DISPLAY SYSTEM



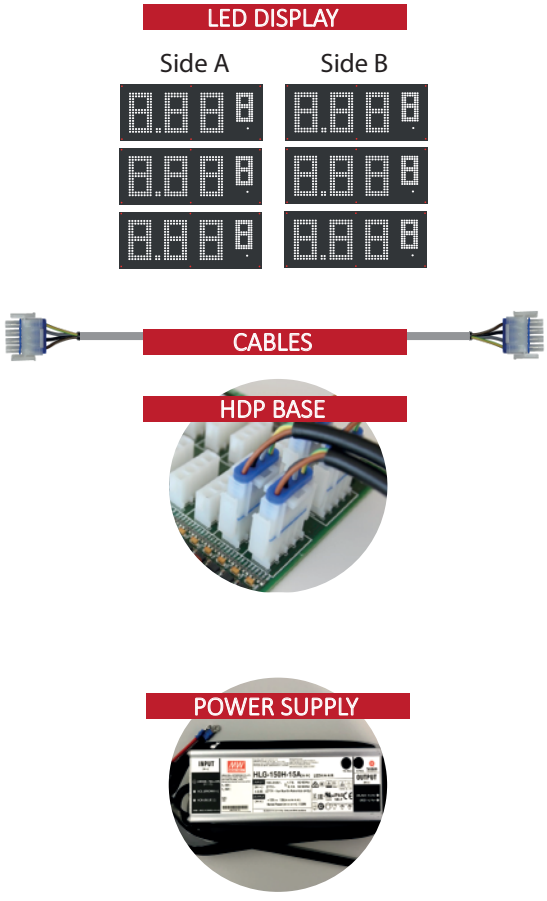
A Price System is a set of components that must be assembled and integrated into a Totem or flag, which in turn must be equipped with front windows in methacrylate or polycarbonate for the protection of the LEDs and components.

⚠ **WARNING !! Make sure to keep a gap of minimun 15 mm between the LED surface and the window glass when positioning the display.**

The display can be manually or automatically programmed.

The Price System can be assembled as a single-sided version or double-sided version.

How to compose a LED display system



LED DISPLAYS

Get the necessary quantity of LED displays to install on your structure.

CABLES

Select the quantity of cables required with sufficient length to connect the various LED displays to the HDP BASE controller, see on **“CABLES”** sheet.

HDP BASE

The standard HDP BASE controller can support up to 6 LED displays per side, for a total of 12 LED displays.

If more LED displays are needed (8 + 8 max.), It must be installed the model HDP BASE-8P, see on **"ACCESSORIES"** sheet.

POWER SUPPLY

Select the correct LED driver from the table, see on **“POWER SUPPLY”** sheet.

RDC

The 18-key remote control to program the LED displays and many other functions.

ACCESSORIES

A wide range of accessories are available and described on “ACCESSORIES” sheet.

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CABLES

Table of available cables to connect the various LED displays to the HDP BASE controller. The "Master display" is a display like the others, but it is considered as such because the HDP BASE controller is located behind it. All the LED displays are connected to HDP BASE, therefore the connection cable between the Master display and HDP BASE is shorter. The Master display should be installed in the lowest part of the totem.

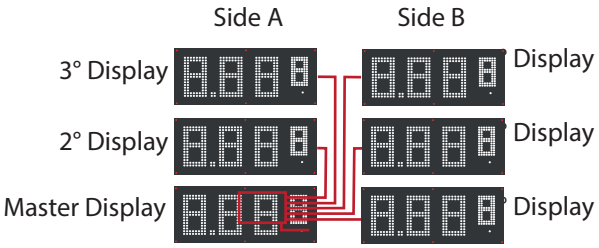
⚠ WARNING !!

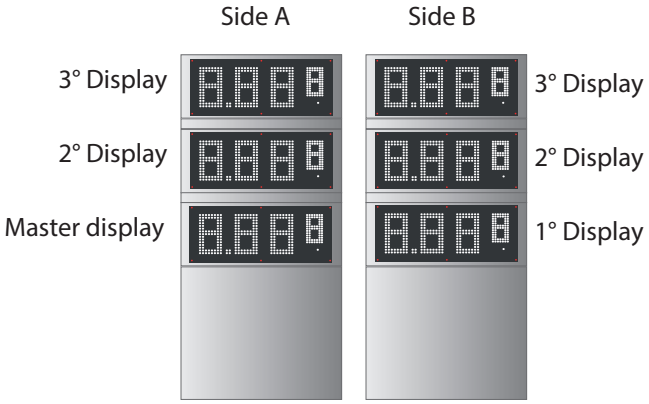
The cables must be the right length, do not let excess remain coiled up.

The cables must be fixed to structure by fastening strings, avoid leaving dangling cables because the weight would stress the connectors.

Cable lenght	Cable section	Code	Recommended
360 mm.	4 x 0,75mm	CAV 000254	Master display
1800 mm.	4 x 0,75mm	CAV 000255	1°,2°,3° Display
2600 mm.	4 x 0,75mm	CAV 000256	4°,5° Display
4600 mm.	4 x 0,75mm	CAV 000257	6°,7°,8° Display
5600 mm.	4 x 0,75mm	CAV 000258	For longer distance

All price displays are connected to the HDP BASE
which is located behind the Master display





POWER SUPPLY

The table indicates how many and which type of Power supply are required and to which terminal blocks of the HDP BASE they must be connected. For example, a 2+2 system , that is 2pcs HDP168P LED displays per side (double-sided), requires an HLG-150H-15 Power supply connected to the + V1-GND terminal blocks of the HDP BASE.

Code	Power supply models	Input Voltage	Output Voltage	Rated Power	Over Current Protection	Over Voltage Protection	Over Temp. Protection	Short Circuit Protection
D 100 001241	HLG-150H-15	230Vac 47 ~ 63Hz	15VDC	150W	YES	YES	YES	YES
D 100 001242	HLG-240-15	230Vac 47 ~ 63Hz	15VDC	240W	YES	YES	YES	YES
D 100 001243	HLG-320-15	230Vac 47 ~ 63Hz	15VDC	320W	YES	YES	YES	YES

Power supply wiring

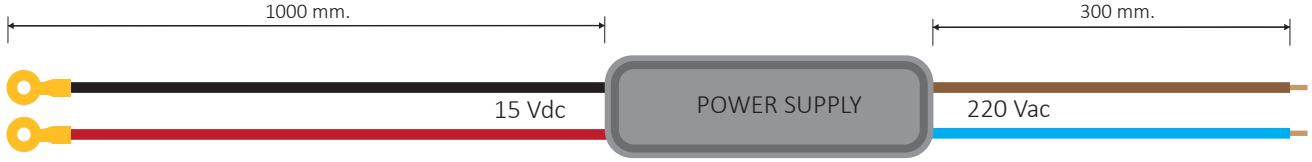
INPUT 220 Vac - The lenght of 220v input cable is 300 mm.

OUTPUT 15 Vdc - The lenght of red and black wires is 1000 mm. The wires have a ring termination and must be firmly connected to the appropriate terminal blocks on the HDP BASE.

LED displays	Power supply	Terminal blocks on HDP BASE
1+0	HLG-150H-15	+V1-GND
1+1	HLG-150H-15	+V1-GND
2+0	HLG-150H-15	+V1-GND
2+2	HLG-150H-15	+V1-GND
3+0	HLG-150H-15	+V1-GND; +V2-GND
3+3	HLG-240-15	+V1-GND; +V2-GND
4+0	HLG-150H-15	+V1-GND; +V2-GND
4+4	HLG-320-15	+V1-GND; +V2-GND
5+0	HLG-150H-15	+V1-GND; +V2-GND; +V3-GND
5+5	HLG-320-15	+V1-GND; +V2-GND; +V3-GND
6+0	HLG-240-15	+V1-GND; +V2-GND; +V3-GND
6+6	HLG-320-15	+V1-GND; +V2-GND
	HLG-150H-15	+V3-GND

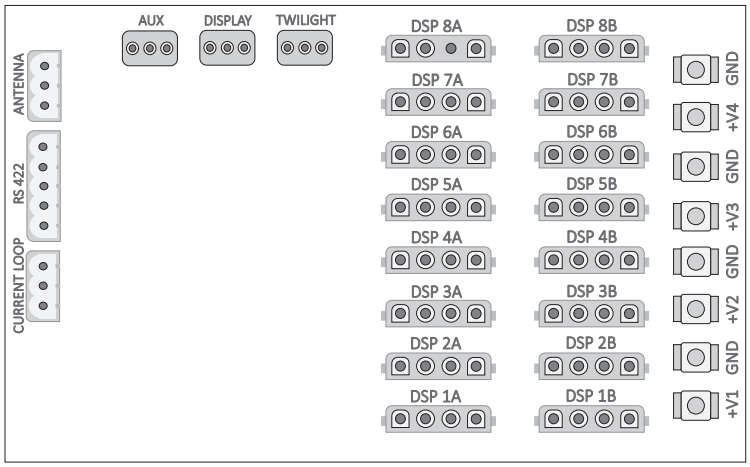
⚠ WARNING !!

- The two red and black output wires 15 Vdc (1000 mm.) must not be extended.
- Connection to the line 220 VAC must be carried out by qualified personnel and must be carried out in compliance with current regulations.



HDP BASE- CONNECTORS

The 15VDC INPUT terminal blocks named: + V1, V2, V3, V4 (positive pole) and GND (negative pole) to connect the LED drivers which are equipped with red positive and negative black wire and ring termination.
The 4-poles connectors for the LED displays are equipped with a special locking system, so you need to exert adequate pressure, making sure that it is locked correctly.
The connectors named: TWILIGHT, DISPLAY, AUX are also equipped with a special locking system as described above.
The connection to the screw terminal blocks named: ANTENNA, RS422, CURRENT LOOP must be carried out referring to the assembly instructions supplied with the product.



Connectors name	Function
DSP 1A.....DSP 8A	LED display connectors, only for a single side system.
DSP 1B.....DSP 8B	LED display connectors, only for the second side on a double sided system.
+V1-GND	15VDC LED driver input, to power the displays connected to DSP 1A, DSP 2A, DSP 1B, DSP 2B.
+V2-GND	15VDC LED driver input, to power the displays connected to DSP 3A, DSP 4A, DSP 3B, DSP 4B.
+V3-GND	15VDC LED driver input, to power the displays connected to DSP 5A, DSP 6A, DSP 5B, DSP 6B.
+V4-GND	15VDC LED driver input, to power the displays connected to DSP 7A, DSP 8A, DSP 7B, DSP 8B.
TWILIGHT	Optional twilight switch LS1 connection for lighting the logo, product indicators, contours, etc.
DISPLAY	Connection to graphic LED displays for synchronized operation with price LED display.
AUX	Future use.
ANTENNA	Antenna connection for optimizing the RDC remote control signal reception.
RS 422	RS422 serial port for LAN cable connection to PC or POS with all communication protocols are available.
CURRENT LOOP	CURRENT LOOP port for connection to the POS ,this function is available only in the HDP BASE-CL or HDP BASE-8P-CL

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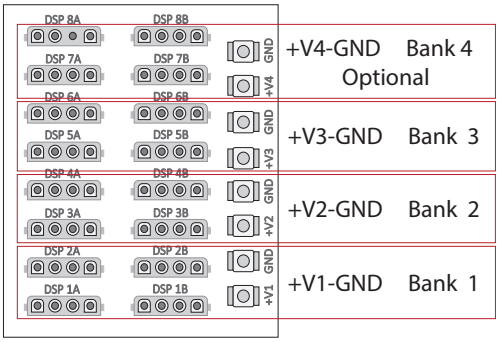
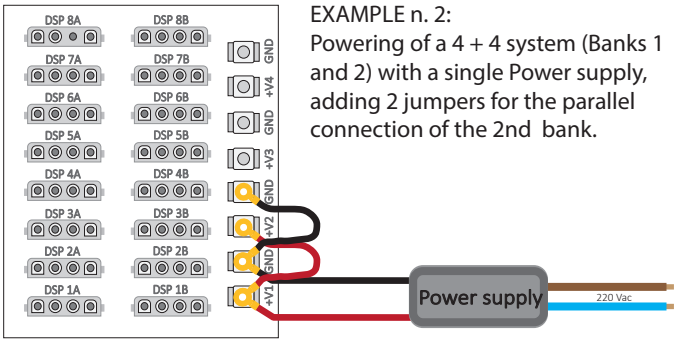
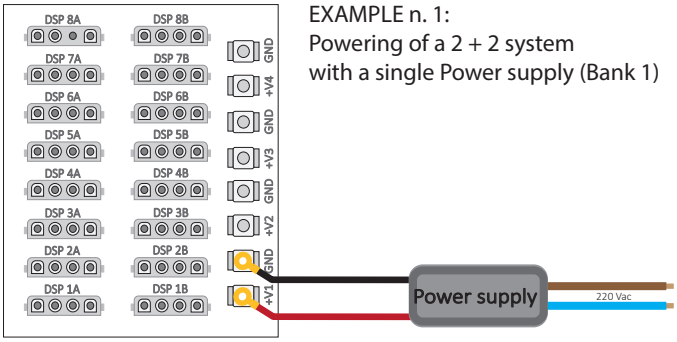
HDP BASE- POWERING

The HDP BASE includes 4 independent banks for the LED display power (3 standard banks and the 4th bank is an optional).
On each bank there are 2 terminal blocks, positive pole and negative pole 15 VDC input, to which the eyelet terminals of the Power supplies can be screwed as well as 4 connectors (A side and B side) to which the LED displays can be pluged.

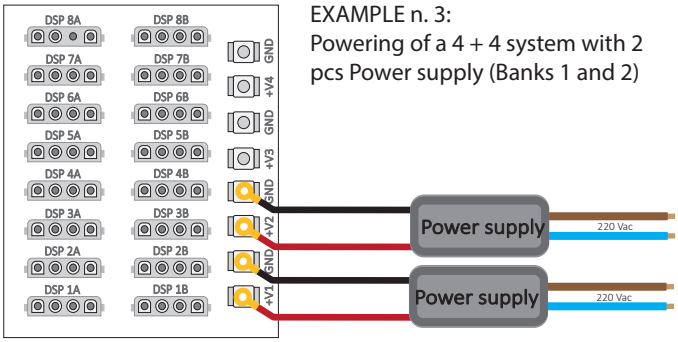




EXAMPLE n. 2:
Powering of a 4 + 4 system (Banks 1 and 2) with a single Power supply, adding 2 jumpers for the parallel connection of the 2nd bank.



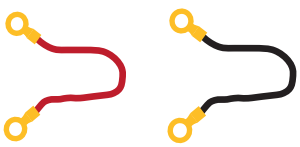
EXAMPLE n. 1:
Powering of a 2 + 2 system
with a single Power supply (Bank 1)



EXAMPLE n. 3:
Powering of a 4 + 4 system with 2 pcs Power supply (Banks 1 and 2)

The two jumpers: positive (red wire) and negative (black wire) are used to connect 2 banks in parallel to the same Power supply.

Code	Available jumpers
CAV 000681	Red wire jumper
CAV 000680	Black wire jumper



⚠ WARNING !!

- The terminal block screws must be tightly screwed to avoid overheating due to high current (A)

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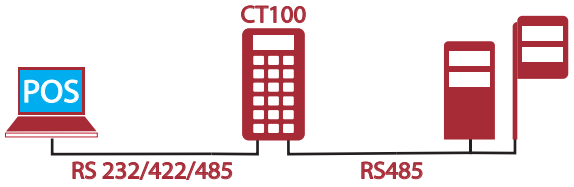
PROGRAMMING

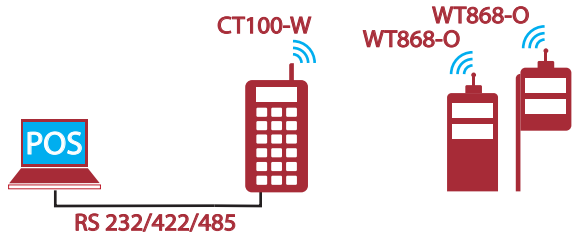
Remote RDC

Remote control for manual programming of LED displays, manage the messages from text or graphic panels (if present) and many other setting functions.



Keyboard CT100

The CT100 LCD keypad allows you to program LED displays and manage the messages from textual or graphic panels (if present), or it can become transparent allowing programming directly from POS via communication protocols, or both modes at the same time, use a category 5 LAN cable (length maximum cable length: 1000 m).



Keyboard CT100-W

The CT100-W LCD keypad allows you to program LED displays and manage messages from textual or graphic panels (if present), or it can become transparent allowing programming directly from POS via communication protocols, or both modes at the same time. use category 5 lan cable to connect CT100-W and POS, while between CT100-W and LED display the connection is wireless. The range is approximately 100 linear meters in open field (must be use a receiver WT 868-O for each display system).

Wired POS

Programmation of one or more LED display systems by POS through connection of category 5 LAN cable (max. cable lenght: 1000m). In case of POS all communication protocols listed on the next page are available, the remote control can be used at the same time. If necessary add a CONV-SU01 for RS422 serial (optional).

AVAILABLE COMMUNICATION PROTOCOLS

hitechled®	• PC LEDPRO • HITECH 1200Hz • OMV
TOKHEIM QUALITY	• TOKHEIM KA (KOPPENS AUTOMATIC) ver. 4.2 • TOKHEIM JUPITER ST 39
PROEDA DATENMANAGEMENT	• PROEDA V21-02-01/CK
GILBARCO VEEDER-ROOT	• LOGITRON GILBARCO 70RPLSUPSIT.E04 (PASSPORT EUROPE) • ENI • GILBARCO ESTESO
SCHEIDT&BACHMANN SB	• SCHEIDT & BACHMANN V11
SCHENK	• SCHENK 68000/68020 ver.2.02 2400 BAUD RATE • SCHENK 68000/68020 ver.2.02 4800 BAUD RATE
DRESSER Wayne	• WAYNE DRESSER SYSTEM MARKETER PIGNONE SM2000/3000 • WAYNE DRESSER NUCLEUS 8 (1200 BAUD RATE MONODIREZIONALE) • WAYNE DRESSER NUCLEUS 9 (9600 BAUD RATE BIDIREZIONALE) • HITECH_PIGNONE-TON1070S • ENI • WAYNE DRESSER ESTESO BIDIREZIONALE
TECHNICAL IFSF CORRESPONDENT	• IFSF LON WORK (It needs an additional interface)
MASER	• MASER AUTOMATION
LAFON EQUIPEMENTS PETROLIERS	• LAFON - MAGIC 2000
Fortech®	• FORTECH
Alvic	• ALVIC

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ACCESSORIES

RDC

CT100

CT100-W

WT868-O

CONV_SU01

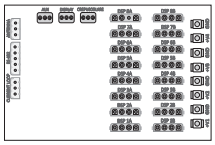
LS1

ANT433-4

YAGI868

SP HDP BASE

HDP BASE (-8P) (-CL) (-8P-CL)



ADDITIONAL DOT **

Code	Models	Description
D 100 001032	RDC	Remote control
D 100 002322	CT100	LCD keyboard
D 100 002582	CT100-W	LCD keyboard wireless sender
D 100 002583	WT868-O	Wireless receiver device
D 100 002200	CONV_SU01	USB - RS422 converter
O 091 000405	ANT433-4	Additional antenna for RDC

Code	Model	Description
D 100 002285	YAGI868	Yagi Antenna
D 100 002284	LS1	Twilight switch
D 100 002336	SP HDP BASE	Protective shield for HDP BASE
D 100 001255	HDP BASE-8P	8+8 LED display version
D 100 001257	HDP BASE-CL	Current loop version
D 100 001258	HDP BASE-8P-CL	8+8 and current loop version

** These options must be requested when ordering, cannot be added after sale.

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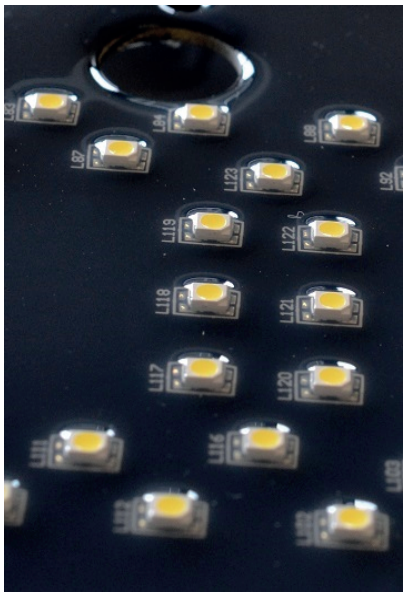
QUALITY



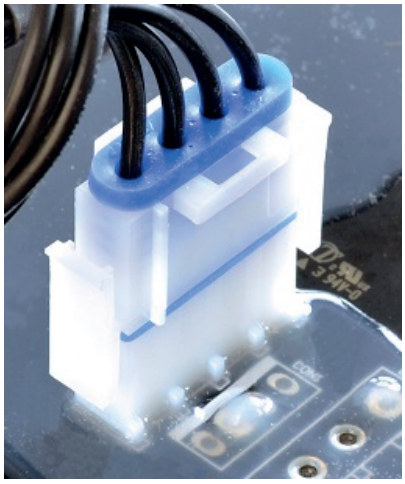
Protective coating

The considerable thermal excursion and the high moisture to which the LED displays are subjected, drived Hitechled design department to prefer a protection of the electronic boards made of pure silicone. This material, unlike common protective resins, has the advantage of always remaining elastic and unaltered over time, avoiding cracks and related moisture infiltrations.
The dosage of this precious material is performed by automatic machines, avoiding to deposit sediments on the surface of the LEDs.

Sealed connectors

The rugged connectors designed for the industrial sector are equipped with protective silicone seals into the gap between the male and female socket and in the collars around the wires. The safety lock ensures a stable connection, thus avoiding malfunctions due to hasty wiring. The contacts coated with anti-oxidation metal are suitable for use in humid environments and guarantee a considerable duration over time.

LEDs controlled by constant current drivers



LED displays are equipped with constant current drivers, furthermore the LEDs are divided into many branches and connected together in series of only 4 units, this serves to minimize the problem of illegibility in the event that a spoiled.
The brightness of the LEDs is automatically adjusted by the microprocessor integrated in each single digit with PWM (Pulse With Modulation) procedure.

Overheating protection for LEDs

An integrated temperature micro-sensor reduces the current in the LEDs in case of ambient overtemperature, then bringing it back to the normal level with the restoration of the temperature values below the limit, this automatic system serves to avoid premature aging of the LEDs , allowing them to age in accordance with the manufacturer's expected derating curve in the 100,000 hours of operating life of the LEDs.

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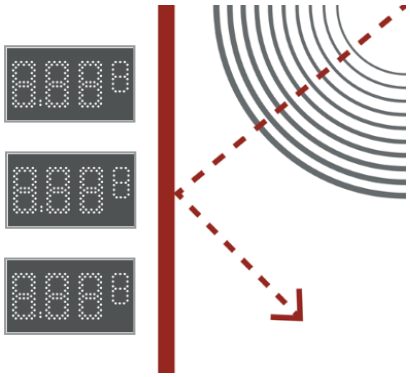
QUALITY



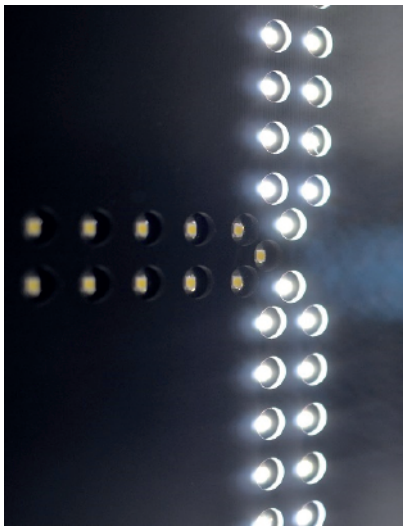
Sturdy wiring and high immunity to interference

The connection between the HDP BASE and the LED displays consists of a single cable with 4 wires (double insulation) and therefore mechanically robust, so the cables can be fixed to the structure by fastening strings.

The HDP BASE is equipped with 16 independent RS485 serial communication channels, one for each single LED display which are each equipped with a microprocessor that decrypts and correctly displays the prices arriving from the HDP BASE. The hardware thus designed in addition to the software filters of the main microprocessor makes communication extremely safe and immune to electromagnetic disturbances, avoiding to display of wrong or deformed characters.

Opto Isolated communication serial port

The optical device for the galvanic separation of the RS422 / 485 communication serial port included on the HDP BASE, establishes a very high level of immunity to electrical discharges induced in the cable towards the POS.



Resistance to solar radiation and temperature

All the LED displays are equipped with a sunshade front in non-deformable in fiber-glass which being a poor conductor of heat, plays a role of heat shield and protection from the effects of solar radiation as well as finishing the display.

Brightness sensor on each LED display

Each individual LED display is equipped with a brightness sensor, all the displays connected to the DSP 1A ... DSP 8A connectors measure continuously the level of ambient light and send this value to the HDP BASE board, consequently the brightness of the all LED display connected to HDP BASE (A side and B side) is automatically adjusted, optimizing consumption and making the reading of the displays more comfortable.

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