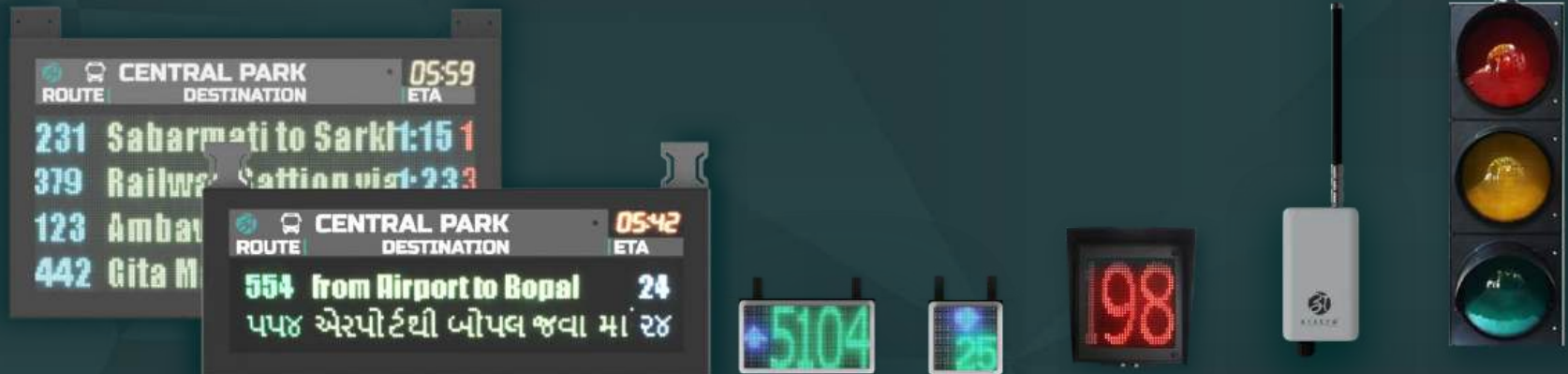




**A T R E Y O**®

SOLUTIONS THAT SIMPLIFY



# INFRASTRUCTURAL PRODUCTS



# Atreyo – Solutions That Simplify

## ABOUT ATREYO

Atreyo Research and Development LLP is a technology company that designs and manufactures electronic products and provides software solutions in the fields of industrial automation, remote monitoring and infrastructure projects. We have our research and development department, where team of well-skilled engineers design our products and software solutions.

## INDUSTRIAL PRODUCTS AND SOLUTIONS

We provide range of industrial computers, IoT gateways, interfaces and other industrial devices with software applications. At Atreyo, our industrial products are fortified with cutting-edge technology to withstand the most demanding environments. We prioritize durability by implementing optoisolation for serial interfaces and digital inputs in nearly all our products. Furthermore, our robust aluminum housings not only reinforce structural integrity but also facilitate effective cooling, ensuring superior performance and longevity.

## INFRASTRUCTURE PRODUCTS AND SOLUTIONS

Our commitment to betterment shines through in every aspect of what we do. Our innovative solutions and products benefit a wide range of areas, including roads, trains, energy networks, street lights, farms, parking spots, buses, and more. From optimizing transportation networks and ensuring efficient energy distribution to enhancing street lighting, our innovations permeate urban living. We're making everything run smoother and safer.

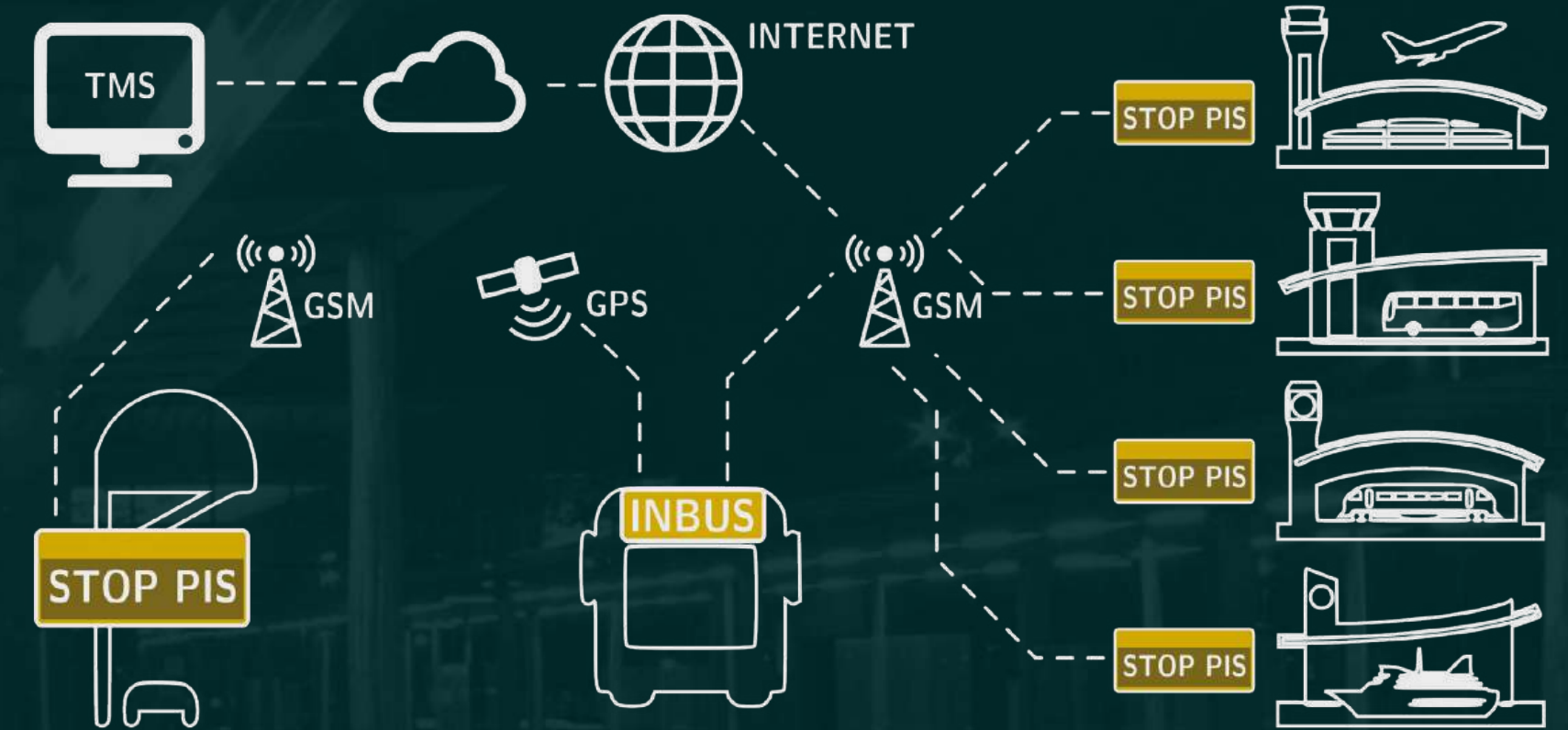
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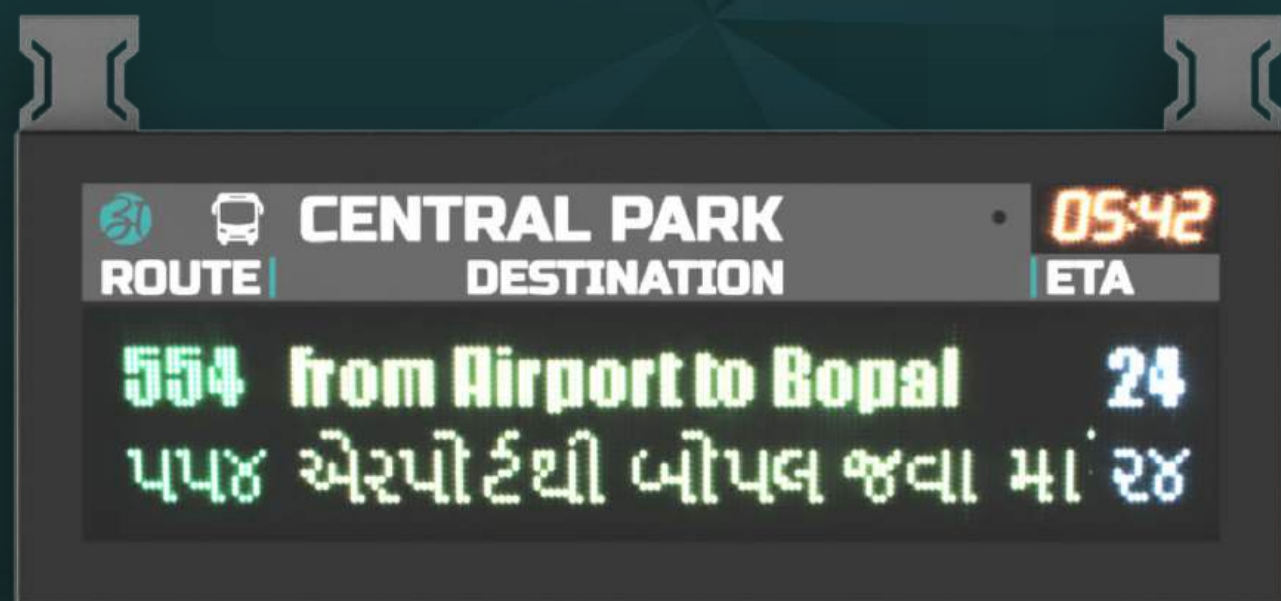
# Information Displays

Passenger information displays  
Public information displays



BUS STOP AND TERMINAL INFORMATION DISPLAYS

We offer a wide range of information display mostly to use as passenger information displays both for stops and stations as well as for use in/out side of vehicles. Our display supports all Indian alphabets and many others from around the world. We produce both multi-colour and single-colour displays. Our displays are adapted for long term use in real outdoor environmental conditions. We also offer customised displays according to customer specification.



# APIS-160-2M

LED display dedicated for use in public transport stations. Specifically designed for bus stops, tram stops, metro stations, and railway stations. It has unique facility of displaying seven colours and two line of clear visible text. It supports all Indian languages. The separate clock makes APIS-160-2M more passenger-friendly by displaying accurate time.

### CONNECTIVITY

LTE, GSM, Ethernet, real time data from server

### CONFIGURATION

Configuration by inbuilt www and SMS commands

### 2-3 LINES OF TEXT

Clear colours and antiglare front, 120° view angle

### SLIM DESIGN

Aluminium enclosure Only 50mm thickness

## HARDWARE

|                              |   |
|------------------------------|---|
| Size of displaying area      | 970 × 202mm (W × H)   |
| Size of body of display      | 1080 × 405 × 50mm (W × H × D)   |
| Pitch of pixels              | 6mm   |
| Display resolution           | 160 (H) × 32 (V)  |
| Displays colours             | RGB 7 colours, day light readable (optional amber)                        |
| LED type                     | SMD PLCC-2  |
| Angle of viewing             | 120°V, 120°H  |
| Intensity of light           | 6000 cdm or more  |
| Line of text                 | 2-3 lines of English/Hindi or any other Indian language                   |
| Line height                  | 16 pixels   |
| Graphics                     | Pictorial and single colour graphics support (any one from 7 colours)     |
| Communication to server      | GPRS or Ethernet (Ethernet limited functionality)                         |
| Controller and antenna       | Inbuilt in display  |
| Maintenance                  | Front maintenance   |
| Extra features               | Inbuilt separate clock  |
| Power supply                 | 90 to 240V AC (inbuilt supply), maximum 150W, average 50W                 |
| Screen protection            | Antiglare UV resistant sheet  |
| Body material                | Powder coated aluminium   |
| Environmental specifications | Operating temperature: -10 to +70°C, humidity: 5% to 95% RH, sealing IP65 |

## SOFTWARE AND FUNCTIONS

|                        |  |
|------------------------|--|
| Communication protocol | TCP/IP   |
| Communication interval | Real time (configurable interval from 1s to 256s)                                  |
| Configuration          | SMS or LAN (inbuilt web-server), 16x2 LCD for diagnosis                            |
| Brightness control     | Auto-brightness according ambient light or manual from server                      |
| Display region control | Multiple regions, multiple messages, refresh whole display, refers only one region |
| Language support       | All Indian languages, right to left languages, any European languages support      |
| Text effects           | Scrolling left, right, up, down; blinking, stable text                             |





# APIS-160-4M

LED display dedicated for use in public transport stations. Specifically designed for bus stops, tram stops, metro stations, and railway stations. It has unique facility of displaying seven colours and 4-6 line of clear visible text. It supports all Indian languages. The separate clock makes APIS-160-4M more passenger-friendly by displaying accurate time.

## CONNECTIVITY

LTE, GSM, Ethernet, real time data from server

## CONFIGURATION

Configuration by inbuilt www and SMS commands

## 4-6 LINES OF TEXT

Clear colours and antiglare front, 120° view angle

## SLIM DESIGN

Aluminium enclosure Only 60mm thickness

# HARDWARE

|                              |   |
|------------------------------|---|
| Size of displaying area      | 970 × 404mm (W × H)   |
| Size of body of display      | 1080 × 613 × 60mm (W × H × D)   |
| Pitch of pixels              | 6mm   |
| Display resolution           | 160 (H) × 64 (V)  |
| Displays colours             | RGB 7 colours, day light readable (optional amber)                        |
| LED type                     | SMD PLCC-2  |
| Angle of viewing             | 120°V, 120°H  |
| Intensity of light           | 6000 cdm or more  |
| Line of text                 | 4-6 lines of English/Hindi or any other Indian language                   |
| Line height                  | 16 pixels   |
| Graphics                     | Pictorial and single colour graphics support (any one from 7 colours)     |
| Communication to server      | GPRS or Ethernet (Ethernet limited functionality)                         |
| Controller and antenna       | Inbuilt in display  |
| Maintenance                  | Front maintenance   |
| Extra features               | Inbuilt separate clock  |
| Power                        | 90 to 240V AC (inbuilt supply), maximum 250W, average 70W                 |
| Screen protection            | Antiglare UV resistant sheet  |
| Body material                | Powder coated aluminium   |
| Environmental specifications | Operating temperature: -10 to +70°C, humidity: 5% to 95% RH, sealing IP65 |

# SOFTWARE AND FUNCTIONS

|                        |  |
|------------------------|--|
| Communication protocol | TCP/IP   |
| Communication interval | Real time (configurable interval from 1s to 256s)                                  |
| Configuration          | SMS or LAN (inbuilt web-server), 16x2 LCD for diagnosis                            |
| Brightness control     | Auto-brightness according ambient light or manual from server                      |
| Display region control | Multiple regions, multiple messages, refresh whole display, refers only one region |
| Language support       | All Indian languages, right to left languages, any European languages support      |
| Text effects           | Scrolling left, right, up, down; blinking, stable text                             |

## INFORMATION DISPLAYS



# APIS-160-6M

LED display dedicated for use in public transport stations. Specifically designed for bus stops, tram stops, metro stations, and railway stations. It has unique facility of displaying seven colours and 6-10 line of clear visible text. It supports all Indian languages. The separate clock makes APIS-160-6M more passenger-friendly by displaying accurate time.

### CONNECTIVITY

LTE, GSM, Ethernet, real time data from server

### CONFIGURATION

Configuration by inbuilt www and SMS commands

### 6-10 LINES OF TEXT

Clear colours and antiglare front, 120° view angle

### SLIM DESIGN

Aluminium enclosure Only 60mm thickness

## HARDWARE



|                              |   |
|------------------------------|---|
| Size of displaying area      | 970 × 585mm (W × H)   |
| Size of body of display      | 1080 × 785 × 60mm (W × H × D)   |
| Pitch of pixels              | 6mm   |
| Display resolution           | 160 (H) × 96 (V)  |
| Displays colours             | RGB 7 colours, day light readable (optional amber)                        |
| LED type                     | SMD PLCC-2  |
| Angle of viewing             | 120°V, 120°H  |
| Intensity of light           | 6000 cdm or more  |
| Line of text                 | 6-10 lines of English/Hindi or any other Indian language                  |
| Line height                  | 16 pixels   |
| Graphics                     | Pictorial and single colour graphics support (any one from 7 colours)     |
| Communication to server      | GPRS or Ethernet (Ethernet limited functionality)                         |
| Controller and antenna       | Inbuilt in display  |
| Maintenance                  | Front maintenance   |
| Extra features               | Inbuilt separate clock  |
| Power                        | 90 to 240V AC (inbuilt supply), maximum 300W, average 150W                |
| Screen protection            | Antiglare UV resistant sheet  |
| Body material                | Powder coated aluminium   |
| Environmental specifications | Operating temperature: -10 to +70°C, humidity: 5% to 95% RH, sealing IP65 |

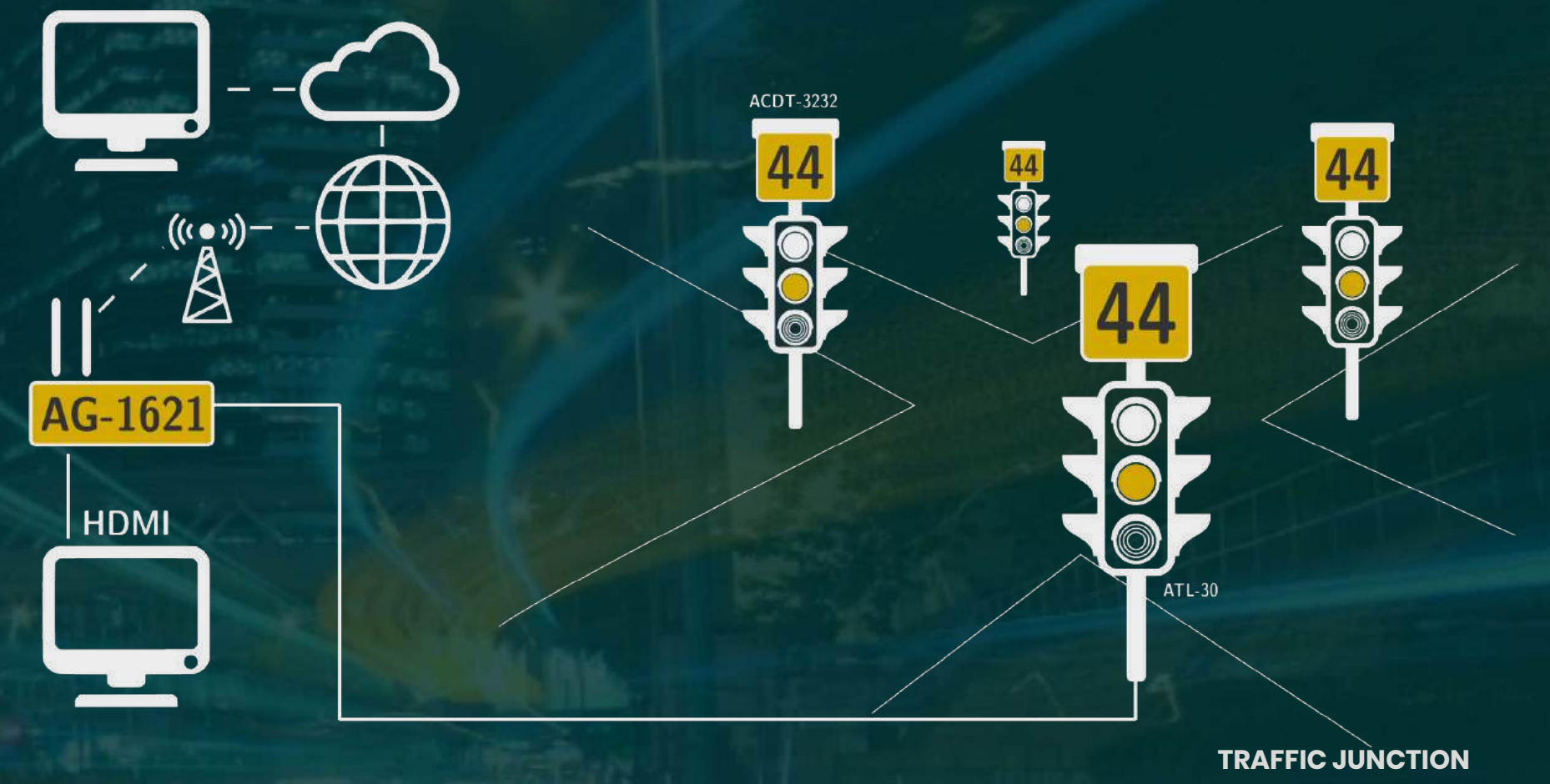
## SOFTWARE AND FUNCTIONS

|                        |  |
|------------------------|--|
| Communication protocol | TCP/IP   |
| Communication interval | Real time (configurable interval from 1s to 256s)                                  |
| Configuration          | SMS or LAN (inbuilt web-server), 16x2 LCD for diagnosis                            |
| Brightness control     | Auto-brightness according ambient light or manual from server                      |
| Display region control | Multiple regions, multiple messages, refresh whole display, refers only one region |
| Language support       | All Indian languages, right to left languages, any European languages support      |
| Text effects           | Scrolling left, right, up, down; blinking, stable text                             |

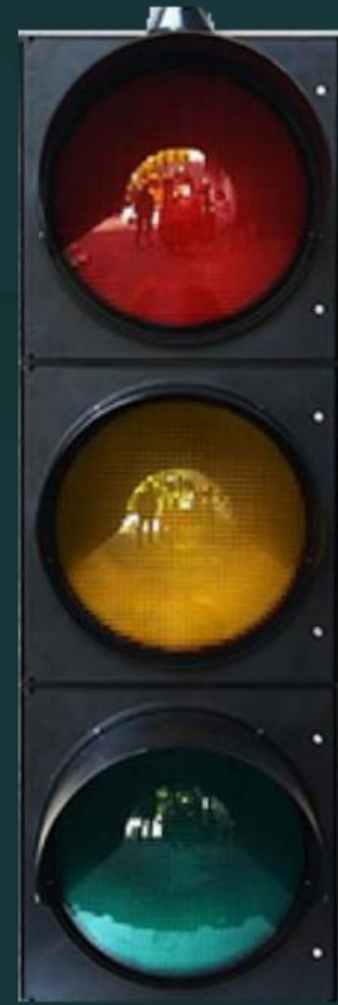


# Traffic Signaling

Traffic signals  
Count down timers



We offer components for traffic signaling systems. Our products are characterized by easy service, access to spare parts and high durability. We produce: traffic signals, Traffic Count-down timer and signaling control panels. We also provide accessories.



# ATL-30 SERIES

The ATL-30-xx is traffic signal light. There is high brightness with High Flux LED source, with 300mm diameter of Fresnel lens. We provide all variant of arrow signs and can also supply customised design. The lamps have a detection system if the light source is working properly.

## SINGLE SOURCE LED

High Flux long life LED with cooling plate

## CONTROL

Brightness control by RS485, PWM, ON-OFF PWM or RS485

## INTERFACES

RS485, PWM, ON-OFF

## FAILURE DETECTION

Feedback on the operation of the lamp

# HARDWARE



|                              |  |
|------------------------------|--|
| Light source                 | High Flux LED  |
| Colour acc. to (EN12368)     | Green – Wavelength 498-507 nm, red – wavelength 618-630 nm, Yellow – Wavelength 587-595 nm |
| Uniformity of Luminance      | Better than 1: 2.5   |
| Central light insensitivity  | > 400cd (EN12368)  |
| Brightness setting           | Deeming possible by PWM signal from ATCS, or RS485*  |
| Controller                   | Inbuilt  |
| Power                        | 12, 24 or 230V*  |
| Enclosure                    | UV-stabilized polycarbonate, ABS*  |
| Rated power                  | 6-10W*   |
| Environmental specifications | Operating temperature: -10 to +70°C, humidity: 5% to 95% RH, sealing IP65                  |

\* Depending on the model

# SOFTWARE AND FUNCTIONS

|                    |  |
|--------------------|--|
| Failure detection  | Feedback on the operation of the lamp by open collector out or RS485 |
| Brightness control | PWM or RS485 control system  |





# ACDT-3232

The ACDT-3232 is count down timer designed for traffic management system as indicator of time to change signal. ACDT-3232 is working on RGB LED technology with pixel panel organisation. By this it is possible to display not only digit but also STP and GO information.

**CLEAR FONTS**

Visible style fonts

**HIGH BRIGHTNESS**

Red, green and yellow

**EASY TO CONNECT API**

RS485 with simple protocol

**IP RATING BODY**

Metal coated enclosure

## HARDWARE



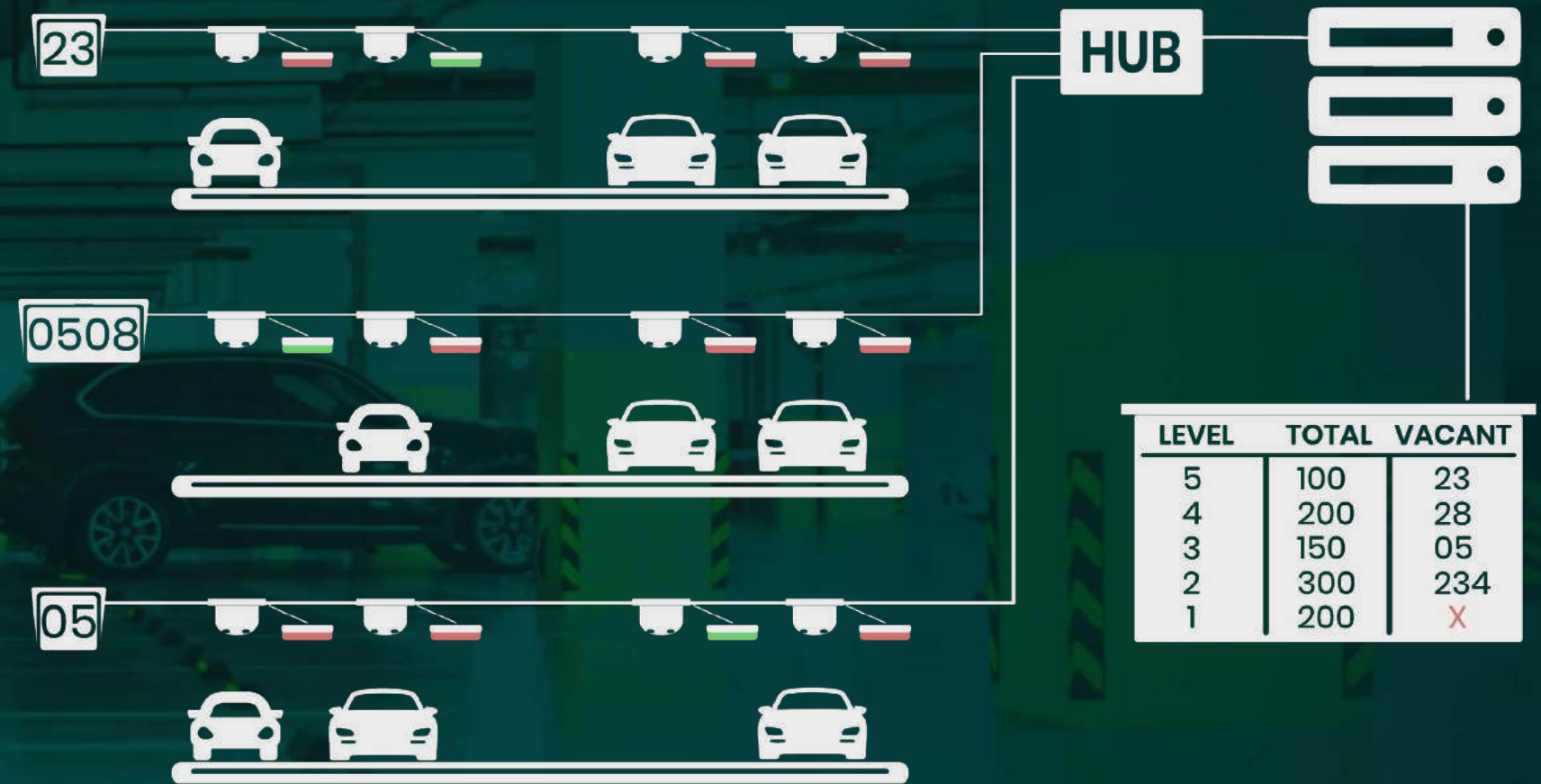
|                              |   |
|------------------------------|---|
| Size of displaying area      | 320 × 320mm (H × V)                                     |
| Brightness                   | > 5000mcd/m   |
| Communication                | Peer to peer custom string                              |
| Interface                    | RS485   |
| Maximum seconds              | 199 seconds (optional 999 seconds)                      |
| Digit colour                 | Red, green, yellow, white                               |
| Brightness setting           | By command. Store in non-volatile memory                |
| Power                        | 8-36V DC or 230V AC                                     |
| Power consumption            | 30 W max (maximum brightness)                           |
| Operating temperature        | 0 °C to 75 °C   |
| Housing                      | Powder coated MS/aluminium                              |
| Size of body of timer        | 440 × 400 × 230mm (H × W × T)                           |
| Weight                       | 8kg   |
| Environmental specifications | IP65  |
|                              | Operating temp.: -20 to +70°C<br>Humidity: 5% to 95% RH |

## SOFTWARE AND FUNCTIONS

|                       |   |
|-----------------------|---|
| Counter functions     | <ul style="list-style-type: none"> <li>• Count down start, count down stop</li> <li>• Blink last 5 seconds in same colour</li> <li>• Blink last 5 seconds in yellow colour</li> <li>• Display on last second red ,STP' or green ,GO'</li> <li>• Blink last 5 seconds in same colour and on last second red ,STP' or green ,GO'</li> </ul> |
| Extra display options | <ul style="list-style-type: none"> <li>• Display , - - ' sign in any colour</li> <li>• Display STP or GO in any time</li> </ul>   |

# Parking Management

Parking sensors  
Vacancy displays



PARKING MANAGEMENT

Nowadays, it is very important to park the car efficiently, quickly and not to waste time on it. We offer elements of parking management systems that ensure convenient and quick finding of a free parking space in a parking lot of a shopping center, cinema, railway station, airport or in a residential complex.





# APSENSE-110U

The APSENSE-110U is sensor for presence of car in the parking place of multi-user parking. Sensor is working as part of Parking Management System and it is sending data about car presence. It has capability to drive external indicator light to clearly indicate vacant place for car parking.

### LONG RANGE

Up to 4m detection capability

### REMOVABLE CAP

Easy installation by turn-lock type assembly

### EXTERNAL INDICATOR

External vacancy indicator with brightness control

### MULTIPLE OPTIONS

Local configuration and remote configuration

## HARDWARE



|                       |  |
|-----------------------|--|
| Sensor type           | Ultrasonic, 40kHz  |
| Sensing method        | Distance detection   |
| Sensing range         | 0.4m to 4m   |
| Interface             | RS485 - Modbus RTU   |
| Connector             | RJ45 common with power or pluggable screw connector*   |
| User interface        | 7 segment display, 3 keys  |
| Indicators            | 5mm LED, red, green, blue, magenta, yellow, white  |
| External lamp         | Support APL-10 model lamp with lamp brightness setting   |
| Power                 | 8-36V DC   |
| Power consumption     | <ul style="list-style-type: none"> <li>• Display on: 0.60W (50mA, 12 V) or (25mA, 24 V)</li> <li>• Display off: 0.18W (15mA, 12 V) or (7.5mA, 24 V)</li> </ul> |
| Installation          | Ceiling or overhead rail, by turn-lock assembly  |
| Operating temperature | -10 °C to 55 °C  |
| Housing               | ABS grey colour  |
| Dimensions            | 110 mm diameter  |
| Weight                | 140g   |

\* Depending on the model

## SOFTWARE AND FUNCTIONS

|                                       |   |
|---------------------------------------|---|
| Configuration locally                 | Modbus address, range of detection, time of reaction (delay)  |
| Configuration from system by commands | <ul style="list-style-type: none"> <li>• Range of detection</li> <li>• Time of reaction</li> <li>• LED colour for empty (in some application use blue for handicap people)</li> </ul>   |
| Other functions                       | <ul style="list-style-type: none"> <li>• Restarting devices over MODBUS</li> <li>• Displaying MODBUS address on all devices</li> <li>• Displaying detection range on all devices</li> <li>• Displaying time of reaction on all devices</li> </ul> |
| Special functions                     | Synchronized blinking yellow colour of all external indicator for emergency use   |



# APDIS-1S

The APDIS-1S is dedicated to multiuser parking for indicating number of free places to park car and direct towards them. APDIS-1S is the part of parking management system and can be controlled by central command computer through wired Ethernet/Modbus RTU data interface.

## CONNECTIVITY

RS485, Ethernet

## ANIMATED ARROWS

Left, right, up and down, various sizes

## MULTICOLOUR

Red, green, yellow and white colours

## 7 FONT SIZES

Up to 4 digits and various size of number styles

# HARDWARE



|                       |   |
|-----------------------|---|
| Display area          | 192 × 192mm (W × H)                                       |
| Resolution            | 32 × 32 (W × H)   |
| Colours               | 7 colours: cyan, blue, magenta, red, yellow, green, white |
| Brightness setting    | From central command system                               |
| Display content       | Numbers and predefined arrow and cross symbols            |
| Font types            | 7 types of font, 7 sizes of font                          |
| Communication         | Modbus RTU or Ethernet UDP/IP*                            |
| Configuration         | 3 push buttons on the back side of display                |
| Power                 | 12-36V DC   |
| Mounting system       | Clamp on the back of body                                 |
| Operating temperature | -0 °C to 55 °C  |
| Housing               | Powder coated aluminium and PVC                           |
| Dimensions            | 230mm x 230mm (W × H)                                     |

\* Depending on the model

# SOFTWARE AND FUNCTIONS

|                         |  |
|-------------------------|--|
| Real time communication | By modbus RTU or Ethernet  |
| Display effect          | Animated arrow 4 sizes, arrow colour selection, animation speed selection, animation direction selection |
| Easy config feature     | Config menu on display screen: IP address, mask, gateway, modbus address                                 |
| Firmware update         | Update firmware by USB pendrive  |





# APDIS-2S

The APDIS-2S is bigger in size than that of APDIS-1S display. It is dedicated to multiuser parking for indicating number of free places to park car and direct towards them. APDIS-2S is the part of parking management system and can be controlled by central command computer through wired Ethernet/Modbus RTU data interface.

### CONNECTIVITY

RS485, Ethernet

### ANIMATED ARROWS

Left, right, up and down, various sizes

### MULTICOLOUR

Red, green, yellow and white colours

### 7 FONT SIZES

Up to 4 digits and various size of number styles

# HARDWARE



|                       |   |
|-----------------------|---|
| Display area          | 384 × 192mm (W × H)                                       |
| Resolution            | 64 × 32 (W × H)   |
| Colours               | 7 colours: cyan, blue, magenta, red, yellow, green, white |
| Brightness setting    | From central command system                               |
| Display content       | Numbers and predefined arrow and cross symbols            |
| Font types            | 7 types/sizes of font                                     |
| Communication         | Modbus RTU or Ethernet UDP/IP*                            |
| Configuration         | 3 push buttons on the back side of display                |
| Power                 | 12-36V DC   |
| Mounting system       | Clamp on the back of body                                 |
| Operating temperature | -0 °C to 55 °C  |
| Housing               | Powder coated aluminium and PVC                           |
| Dimensions            | 420mm x 230mm (W × H)                                     |

\* Depending on the model

# SOFTWARE AND FUNCTIONS

|                         |  |
|-------------------------|--|
| Real time communication | By modbus RTU or Ethernet  |
| Display effect          | Animated arrow 4 sizes, arrow colour selection, animation speed selection, animation direction selection |
| Easy config feature     | Config menu on display screen: IP address, mask, gateway, modbus address                                 |
| Firmware update         | Update firmware by USB pendrive  |



# LoRaWAN® Gateways

LoRaWAN® gateways for industry and infrastructure



LORA GATEWAY WORKING EXAMPLE

LoRaWAN® is a long range, low power wireless communication system that can transmit small amount of data over long distances. These two features make it an attractive solution for use in the IoT and IIoT industries, smart lights, water management etc.

LoRaWAN® gateways are the bridge between the nodes and the network. They receive information from endpoints using a LoRa hub and then send the data to a web server over the internet or private network infrastructure.





# ALWG-1638

Multichannel LoRaWAN® gateway, powered by ARM Cortex-A7 processor with an IP67 enclosure to handle tough environments. Standout features includes an isolated power supply for protection and power backup. The gateway's dual SIMs ensures network connectivity redundancy. Moreover, its multiple VPN support adds an extra layer of security, serving to diverse communication needs.

## LORAWAN®

Multichannel LoRaWAN® class A/B/C

## CONNECTIVITY

4G LTE, GSM, WiFi, Ethernet, GNSS

## POWER BACKUP

SuperCAP backup for power failure message

## OUTDOOR DESIGN

Aluminium die casting IP67 enclosure

# HARDWARE



|                       |  |
|-----------------------|--|
| CPU                   | Quad core ARM Cortex-A7 processor  |
| Storage               | 8GB eMMC   |
| LoRaWAN®              | LoRaWAN® Class A/B/C, 8 x 8 channels LoRa packet detectors                         |
| LoRaWAN® RF           | TX power up to 27 dBm, RX sensitivity down to -139 dBm                             |
| Cellular              | 4G LTE, GSM (3G depends on product variant)  |
| SIM                   | 2 x nanoSIM  |
| Antenna connector     | 1 x N-type for LoRa  |
| Antenna               | High gain fiber antenna for LoRa<br>Cellular, GNSS, WiFi antennas within enclosure |
| Ethernet              | 1 x 10/100 Ethernet port   |
| GNSS                  | BeiDou, Galileo, GLONASS, GPS, QZSS  |
| WiFi                  | IEEE 802.11b/g/n   |
| Status indicators     | 1 x RGB LED for indicate all functions   |
| Other interfaces      | 1 x USB for debug (type-C)   |
| Power                 | 38-58V DC by isolated IEEE802.3af compliant PoE                                    |
| Power backup          | SuperCAP backup for last message and clean shutdown                                |
| Operating temperature | -25°C to 75°C  |
| Housing               | IP67 aluminium housing resistant to all weather conditions                         |
| Dimensions            | 220mm x 122mm x 70mm (without antenna and clamp)                                   |
| Weight                | 920g (without antenna and clamp)   |

# SOFTWARE AND FUNCTIONS

|                   |  |
|-------------------|--|
| Operating system  | OpenWRT Linux with LoRaWAN® gateway system |
| VPN and tunneling | OpenVPN and other VPN providers            |
| Cloud solution    | LoRaWAN® compatible servers                |

REV-0.2

WWW.ATREYO.IN



ONLINE CATALOG



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