

INFODEV
ELECTRONIC DESIGNERS
INTERNATIONAL



**AUTOMATIC PASSENGER
COUNTING (APC)**

FOR SUBWAYS, TRAINS, TRAMS AND TRAIN STATIONS

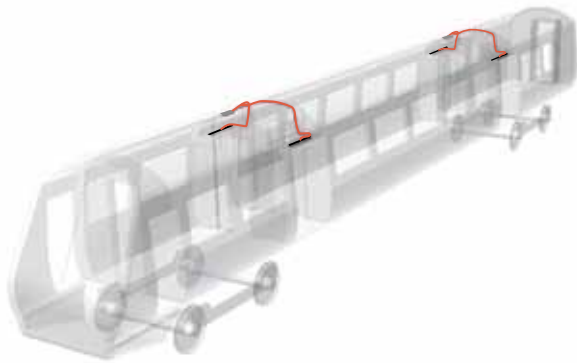


..... Detailed and accurate measurement of passenger traffic
..... Customized reports for profitable decisions



INFODEV offers complete Automatic Passenger Counting solutions for public transport companies, integrators, and rail vehicle builders.





INFODEV, THE LEADING PROVEN TECHNOLOGY

Infodev is one of the world's leaders in the industry of Automatic People and Passenger Counting systems and has been counting people automatically since 1993. Infodev is a turnkey supplier working with public transport companies, integrators, and rail vehicle builders. Our head office and production facility are located in Quebec City, Canada.

Infodev is renowned for its cutting-edge technology and dedicated team of professionals.

Infodev Automatic Passenger Counting systems have achieved many times a verified counting accuracy between 97.5% and 99.5% in trains without the application of any correction factors.

Infodev's sensors are integrated in an ultracompact, only 13-millimeter thick, aluminium bar. Infodev uses high-performance wireless technologies, such as long range wide spectrum RF and high-sensitivity GPS modules, keeping all antennas inside the vehicles and eliminating a significant amount of costly cabling in the vehicles. The end result is a high-accuracy, independent or fully integrated, lightweight, rapidly installed and easily maintained Automatic Passenger Counting system.

PLANNING OF YOUR FUTURE AUTOMATIC PASSENGER COUNTING (APC) SYSTEM

Infodev's professionals can help you design and develop your new project during the very first steps of the process. The acquisition, installation, and commissioning of a new Automatic Passenger Counting system requires effective preparation and supervision. Our dedicated and knowledgeable staff will gladly assist you with the design and implementation of your project and provide you with flawless results. In the early stage of a new project, they can help you to :

- survey and study the physical particularities of your vehicles and infrastructures;
- plan your IT systems, interfaces, and reports;
- develop budget and a schedule;
- review applicable standards.

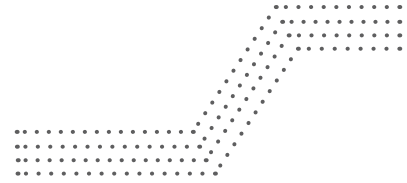
INFODEV developed a cutting-edge expertise in all these specialties:

PRODUCT DESIGN, DEVELOPMENT AND PRODUCTION

- Electronics
- Optics
- Mechanics
- Firmware
- Application software

SERVICES

- Project management
- Installation
- Technical support
- Training



OUR PASSENGER COUNTING SOLUTIONS

RELIABLE AND FLEXIBLE

- Specifically developed for public rail transport operators, in conformity with industry standards
- Autonomous or fully integrated, adaptable to client's specific needs
- Technology proven by numerous successful installations in trains, subways and buses

DESIGNED, DEVELOPED AND IMPLEMENTED BY EXPERTS

- Multidisciplinary team of dynamic and dedicated professionals
- Solid experience in the realisation of international projects in the public transport sector
- All-inclusive fixed price projects
- Project management based on close cooperation with client to ensure the respect of budgets and schedules
- Regional office in Europe

QUICK RETURN ON INVESTMENT

- Minimise installation time:
 - no cabling required between pairs of facing doors or between rail cars;
 - ultrathin sensors surface-mounted with only a few screws;
 - no interface required with door opening systems because of optical door detection;
 - no sensor adjustment/alignment required with our factory calibrated sensors.
- Vandalism-resistant, heavy duty design, with discreet and esthetic finish
- Almost no maintenance required
- Advantageous acquisition cost due to a simple architecture

ACCURATE AND RELIABLE

- Accuracy between 97.5% and 99.5% has been proven many times, provided by unique electro-optical technology that requires no correction factors (ex.: seasonal, per sensor, etc.).
- High-definition sensors that do not count small objects
- Counting data independent of passenger and luggage weight, for each station or stop and for any given period or specific time
- Simple and easy online access to application software, data, and customized counting reports
- Certification of counting accuracy using integrated video camera recording

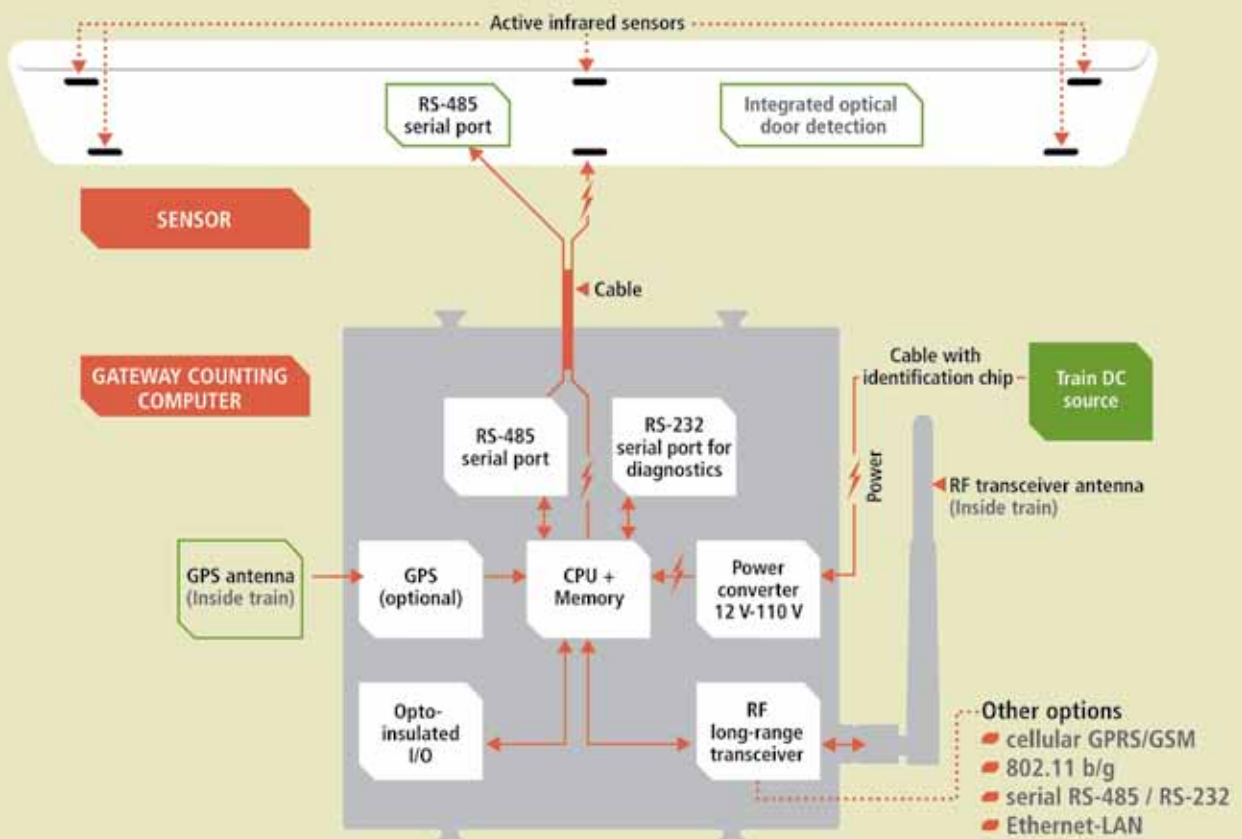
« Accuracy between 97.5% and 99.5% has been proven many times. »



INFODEV'S PASSENGER COUNTING SYSTEMS DESIGNED TO BENEFIT OUR CLIENTS IN EVERY WAY

1. **Simple, modular and flexible architecture:** for installation on any vehicle or door configuration while almost completely eliminating the need for additional cabling inside the vehicles
2. **No on-board central system required:** Infodev's equipment installed on each pair of facing doors can operate independently of other on-board equipment
3. **Ultracompact sensors:** only 13-mm thick
4. **Optical door detection:** no interface with door opening systems required
5. **Only one on-board interface required:** train's DC power connects to the DC/DC power converters integrated in the GW-400 onboard microcomputers
6. **Quick and easy installation:** ingenious "bolt-on design" allows for quick and easy surface mounting of our sensors and onboard computers
7. **Factory calibrated sensor assemblies:** no adjustment or alignment of multiple sensors required in the vehicles
8. **Miniature passenger counting computers:** easily surface-mounted inside the vehicle or hidden behind the vehicle's inside panels
9. **Antennas installed inside the vehicle:** high sensitivity GPS modules and high performance RF modems eliminate complications relating to outside antennas
10. **Multiple communication compatibilities:** long range RF 2.4 GHz spread spectrum, cellular GPRS/GSM, 802.11 b/g, serial RS-485 / RS-232, Ethernet-LAN, etc.
11. **Low maintenance:** quick and easy
12. **Discreet and esthetic:** customized finish that can be easily integrated with the vehicle's interior fittings

SCHEMATIC DIAGRAM

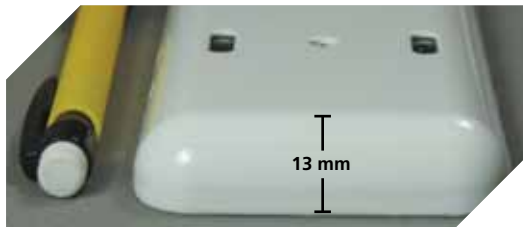




COUNTING SENSORS - DA-400 SERIES



These sensors are only 13-mm thick, which allows for easy surface mounting above doors, even under tight clearance restrictions. The DA-400 sensors are factory-calibrated and specially designed for a quick installation using only a few screws. This clever "bolt-on design" eliminates the complications and the costs associated with alterations to the vehicles and multiple sensor adjustments during installation and commissioning.

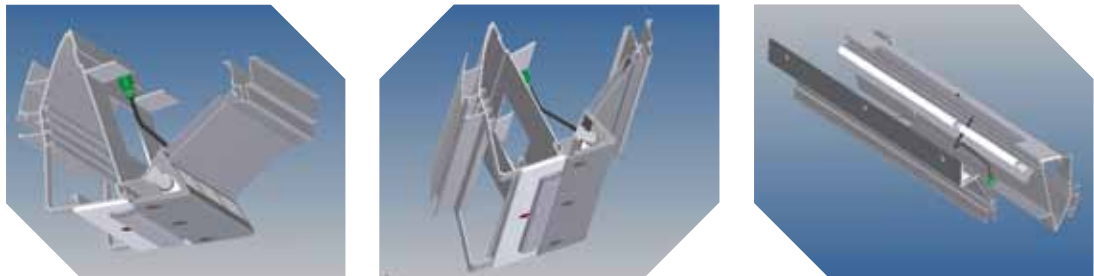


View of sensor thickness

The DA-400 sensors are highly accurate in detecting the passengers entering and exiting each door. The data produced is associated with specific doors, and the time and location of every stop or station. This detailed combined data makes it possible to generate customized and very specific reports that provide a strong base for profitable optimisation decisions.

- Length of the bar and number of integrated sensor elements: depending on door width
- Weight (example): 1.1 kg for a three-sensor element DA-400, 800-mm long
- Integrated optical door detection
- Diagnostic LEDs activated during local technical intervention
- Infrared communication port for local technical intervention

MECHANICAL INTEGRATION STUDY BY 3-D MODELING



TYPICAL INSTALLATION OVERVIEW

DA-400

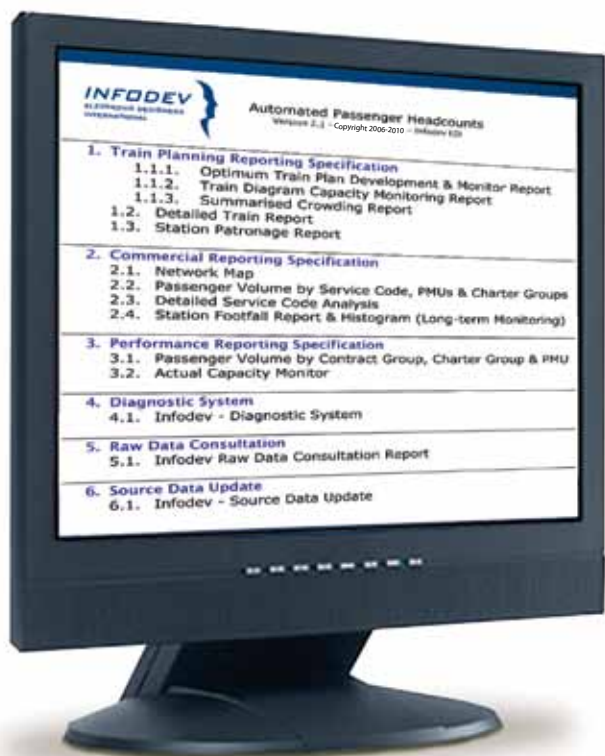


GATEWAY COUNTING COMPUTERS - GW-400 SERIES

These minicomputers are installed inside the vehicles, usually one per pair of facing doors. At each stop or station, they receive the signals from the DA-400s, transform them into counting data, which is then stored in the GW-400s' memory until they receive a download command. The data is usually transferred via a wireless module (or GSM, or LAN) directly to the ground data analysis server. The ultracompact GW-400s are easily and discreetly surface-mounted or hidden behind the vehicle's inside panels.

COMMUNICATION OPTIONS:

- long-range RF, 2.4 GHz spread spectrum;
- cellular GPRS/GSM;
- 802.11 b/g;
- serial RS-485 / RS-232;
- Ethernet-LAN;
- etc.



INFODEV'S APPLICATION SOFTWARE

Infodev has developed a complete suite of modular online applications for the operation and diagnostics of passenger counting systems and for the management and customisation of passenger counting reports. All you need is a server; no software installation is required at the workstations.

THE MAIN FUNCTIONS OF THE VARIOUS APPLICATION MODULES ARE:

- automatic correlation of counting data with planned routes and vehicle schedules;
- integration of counting data into client's database;
- data processing and analysis;
- production and storage of customized web reports;
- exportation of reports in Microsoft Excel and Adobe formats;
- automatic diagnostics of the system;
- maintenance and software updates;
- troubleshooting and technical interventions.



AUTOMATIC PASSENGER COUNTING (APC)

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Infodev has its head office in Quebec City, Canada, and a regional office in Europe.

FOR MORE INFORMATION
regarding our technology and our most recent achievements, please contact us.

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