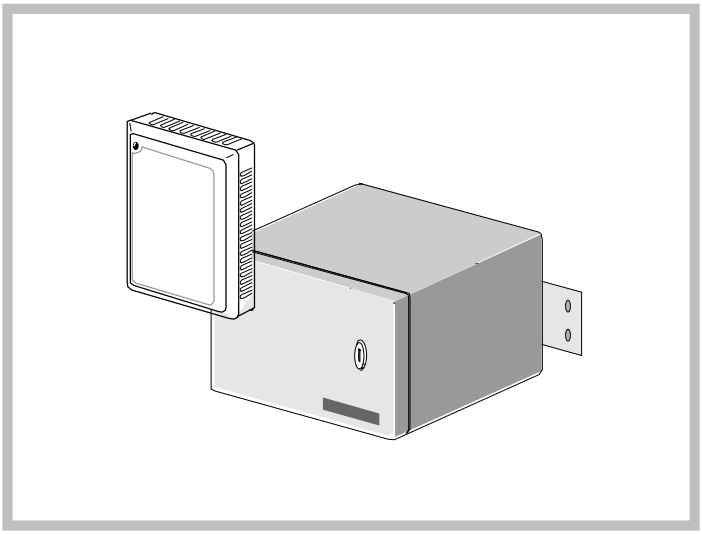
# Modular READER
# 3 meters (10feet) range

LML_4013

## The tag holders are identified with a total freedom of movement



- **Unconstrained Hands Free Identification,**
- **Ease of use : 3 meters range**
- **Multitag identification,**
- **Tag identification behind the windshield**
- **Identification checking by protocol**
- **Parallel installation of several readers**
- **Robust, Weatherproof**
- **Small Antenna,**



### I - PRESENTATION

The antenna shown above is the visible element of this reader. It is small and can be installed against a metallic wall, inside or outside of a building.The purpose of this element is to read the tags which enter the reading area.

During identification, a two-colour LED situated on the antenna front panel informs the cardholder of his access rights.
This antenna is connected to a chassis by means of coaxial cables (supplied). The chassis houses the different electronic modules which perform the signal processing and transmit the codes to the user interface.

The chassis comes in several models : short closed box - 42E(/C), large closed box - 84E(/D). The 84E version chassis can operate with the SHF& LAM modules for using a second antenna.

The modular frame of the chassis coming with standard dimension Europe boards offers advantages for maintenance and product evolution.

### II - OPERATING PRINCIPLE

The electromagnetic radiation characteristics in the 2,45 GHz frequency band allow high data transmission rates and directional antenna beams. Tag detection is thus very quick and relatively insensitive to environmental interference.

Outside of the reader's range, the tag is electromagnetically inactive. It's unique feature (registered patent) is its capacity to reflect incident microwaves - a tag receiving a 2,45 GHz carrier will echo this signal, modulated by its individual identification code, back to the reader. The reader receives and processes this signal, sending the data to a host system via a standardized serial interface.

### III - COMMUNICATION

These products can take the place of most of the usual card-contact readers. One only has to connect them to the host system via the available standard data links. Two standard data link types come with these readers :

- TTL links (Open Collector) : ISO2, Wiegand (26 bits)
- Computer Serial Links : RS232, RS422, RS485

In the latter case, a complete dialogue can be implemented with the help of the JBUS™ /MODBUS™ protocols (by interruption from readers, or by polling from the system).

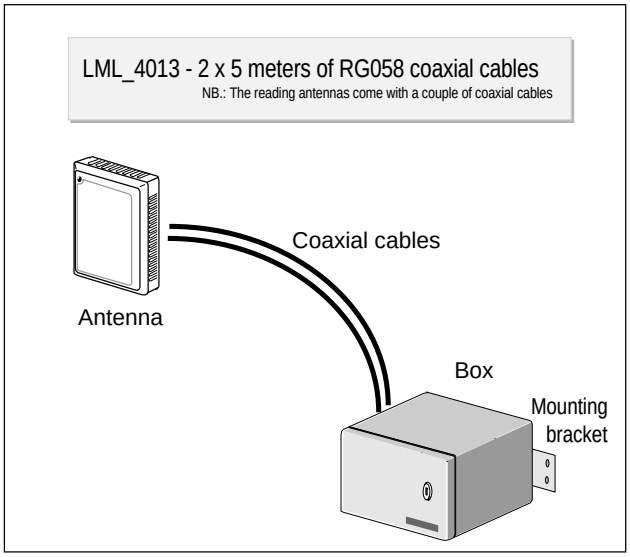
Moreover, the readers come with a relay which are operated either by the host system via JBUS™ link and protocol or automatically after each tag identification.

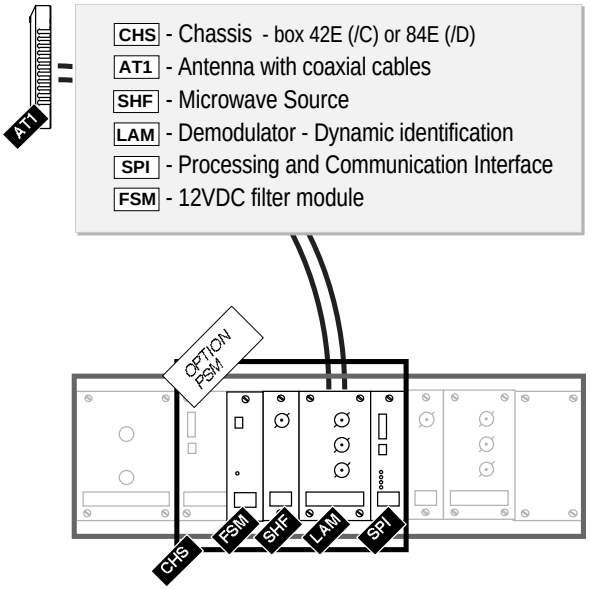
### IV - POWER SUPPLY MODULES

The readers come with a 12VDC filter module.

However, this module can be changed by an optional power supply one which must be connected to the 230 VAC mains :

## ARCHITECTURES




## CHARACTERISTICS

- **Hands Free Reader with a range over 3 meters;**
  - Reading distance suitable for pedestrians,
- **Reading distance adjustment using a potentiometer;**
- **Special features of Microwaves :**
  - Identification relatively insensitive to environment,
  - Orientable reading area toward the crossing line,
  - Tag identification behind a vehicle windshield ,
  - Installation of reading antenna against metal walls without range reduction,
- **Simultaneous multitag identification 5 tags in one second**

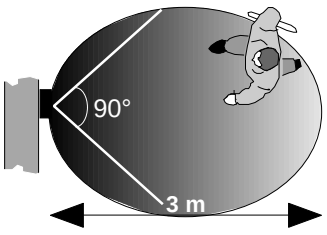
  **NB.: Tags in Normal Mode**
  - Traffic statistics
  - Obstacle-free access control
  - Multi-tags applications - e.g.: Driver and vehicle to manage a fleet
- **Coexistence of 31 readers in same zone**
  - Series of gates, access control side to side

**CAUTION**

- Metallic surfaces or persons coming between tags and the reading antennas create shadow zones in the identification area.
- The proximity of a tag and a metallic surface or a person (<5 mm) reduces the reading distance.

**READER ANTENNA BEAM**

**NB.:** Identification without positionning constraint
- Back / Front,
- Horizontal / Vertical




## SPECIFICATION

| | |
|---|---|
| **Chassis dim. - 42E closed box** | : 240 x 170 x 270 mm |
| **Chassis dim. - 84E closed box** | : 460 x 170 x 270 mm |
| **AT1 Antenna dim. ……** | : 108 x 174 x 29 mm |
| **Weight of 42E closed box (/C) …** | : 4 Kg |
| **Weight of 84E closed box (/D) …** | : 6 Kg |
| **Weight of FSM module ……** | : 0,2 Kg |
| **Weight of PSM module ……** | : 1,5 Kg |
| **Weight of AT1 Antenna ……** | : 0,8 kg |
| **Operating temperature range …** | : - 20°C à +70° C |
| **Storage temperature range ……** | : - 25°C à + 80°C |
| **Relative humidity ……** | : 90% without condensation |
| **Protection level - 42E&84Ebox** | : IP 55 |
| **Protection level - AT1 Antenna** | : IP 55 |
| **Consumption** | |
| o with PSM_2540 (230±10VAC) …… | : 55 mA |
| o with FSM_2550 (12VDC 0/+3VDC) …… | : 900 mA |
| **Frequency band ……** | : 2,45 GHz |
| **Number of reading channels …** | : 31 |
| **Data Rate** (between Tag&Reader) … | : 30000 bauds |
| **Error detection ……** | : HDLC |
| **Fault reading rate ……** | : 1E-7 |
| **Dectected reading rate ……** | : 1E-4 |
| *In the normal conditions of use | |
| **RF power emission ……..** | : <100mW E.I.R.P.. * |
| **Suitable range up to ……** | : 3 meters (10 feet) |
| **Relay - Maximum power ……** | : 24VDC & 1A |
| **Reference for the certification …** | : LML_3002 |

(*) EIRP: Equivalent Isotropic Radiated Power



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**Reference :** DOC_2091 **- Version** 2.0.
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