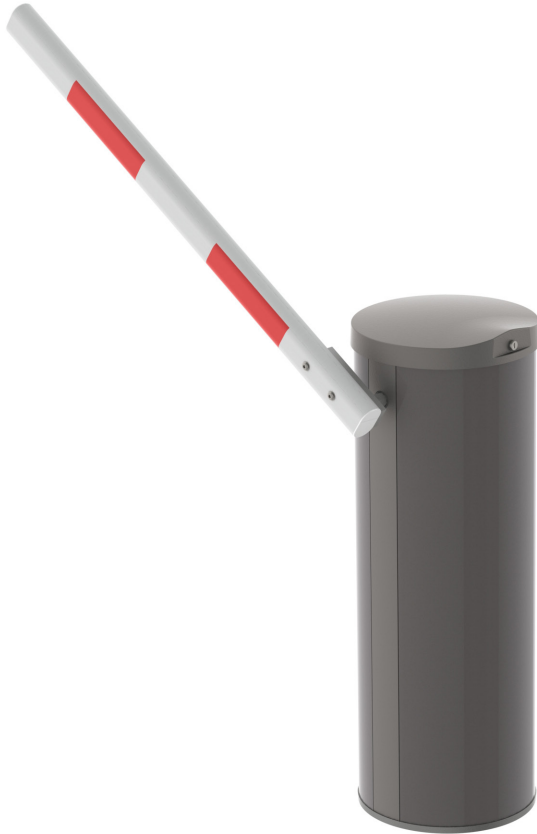
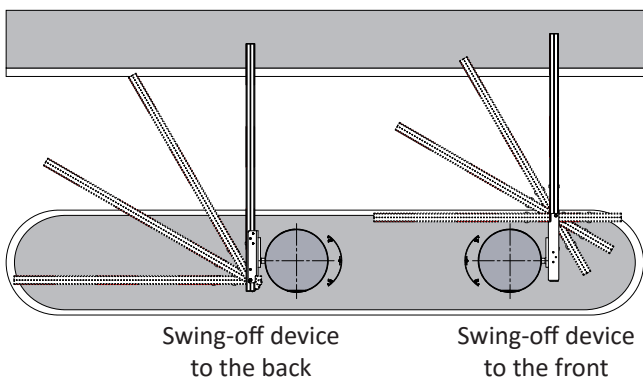
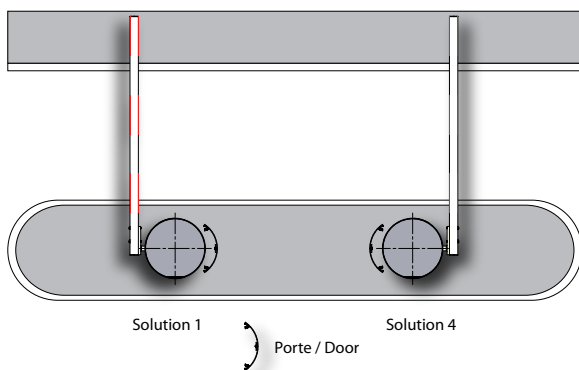


DESCRIPTION



The **TollPlus 160** barriers are rising barriers for toll applications, for manual toll collection (*MTC version*) with moderate traffic flow but also for the lane closing (*LC version*).

CONVENTIONS



1. **Aluminium cast sole plate.**
2. **Anodized aluminium frame.**
3. **Laquered aluminium housing panels** (*selection of 4 colors*). «Qualicoat» laquering providing an excellent protection against corrosion.
4. **Aluminium cast hood**, locked by key.
5. **Oval aluminium arm** of section 80 x 54 mm, **laquered white** (*RAL 9010*) **with red reflective strips**.
6. **Drive shaft**, diameter 30 mm, fitted on a geared motor and a lifetime lubricated bearing.
7. **Automatic opening in case of power failure** (AVR).
8. **Electromechanical assembly** including :
 - **Reversible three-phase asynchronous gear motor**, maintaining the arm in its 2 extreme positions (*open and closed*), is achieved by the frequency converter.
 - **Frequency converter** ensuring progressive accelerations and dampened decelerations, for movement without vibrations, reversal of direction without jolts (*reopening*) and increased protection of the mechanism.
 - **Electronic restriction of the electromechanical assembly torque** allowing immediate stopping of the boom during closing, if an obstacle is detected.
 - **Analog position sensor** indicating the high and low positions and allowing control of the gear motor.
 - **Balancing** of the arm by means of a **compensating spring**, according to the weight of the arm.
9. **Varnished electronic control board** offering inputs, outputs and relays adjustable:
 - Adjustable opening and closing speed.
 - Arm position status (open or closed)
 - Swing-off arm sensor.
 - Technical fault information report.
 - Human/Machine interface by dipperswitches, potentiometers, push button and leds.
 - HTML interface via Ethernet connector.
 - Socket for presence detector (2 loops).
 - MODBUS communication.

STANDARD TECHNICAL SPECIFICATIONS

Electrical power supply	Single-phase 230 VAC - 50/60 Hz + ground. <i>Note: not to be connected to an isolated ground network or a high impedance earthed industrial network</i>
Consumption	During motion: 150W max. At rest: 44W <i>(Depending of options)</i>
Motor	Three-phased 230V/90W
Free passage (L)	2 à 4m, increments of 0,5m
Opening time	Adjustable between 1,2 et 3s <i>(Allowing the passage of 1500 véhicules/h)</i>
Operating temperature	Between -20 and +60°C
Relative humidity	95% max, without condensation
MCBF	Mean cycles between failures - 5.000.000, when respecting recommended maintenance
Weight	50 kg (without arm) Arm: 1,6 to 3,2 kg max
IP	55
Conforms to European standards.	

STANDARD RAL COLORS

Note: These RAL references are available for free.



(*) Standard color.
All other colors must be specified when ordering.

WORKS TO BE PROVIDED BY THE CUSTOMER

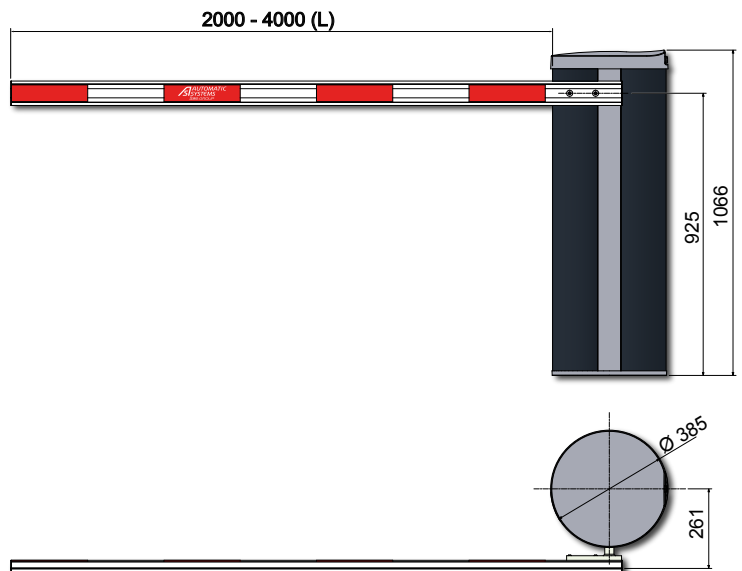
Note: Respect the installation drawing.

- Adapted ground fastening.
- Power supply.
- Wiring towards eventual external peripherals.

OPTIONAL

1. Back oval arm swing-off - Arm swing-off detection device included.
2. Front oval arm swing-off - Arm swing-off detection device included.
3. Carbon Protecta® arm.
4. Polystyrene protection for aluminum arm.
5. Electromechanical holding arm position in case of power failure (SR).
6. Hood & door intrusion information. *(dry contact)*.
7. Push button box - 2 buttons *(opening / closing)*.
8. Push button box - 2 push buttons + 1 switch *(3 positions)*.
9. 3 positions switch mounting inside the housing.
10. Key switch on housing - Automatic / locked open / locked closed.
11. Inductive loop for vehicles detection.
12. Presence detector for inductive loop.
13. Photo-electric cell for safety closing.
14. Cell support post for 1 cell.
15. Mounting of the cell on the barrier.
16. Ultrasonic detector under arm - Protective cover included.
17. Electronic board for input / output + DP connector.
18. Totaling counter *(without or with resetting)*.
19. Operation pictogram - inside the hood. *(red, green & orange)*
20. LEDs on arm.
21. LED traffic lights only - Red/green *(Ø100 or Ø200 mm)*.
22. Supporting post for traffic lights.
23. LED traffic lights (Ø 200) - Red/green + Acoustic and visual alarm - Fixed on barrier.
24. Aluminum composite traffic sign (Ø 300)
25. Non standard RAL color.
26. Customer LOGO.
27. Raised base.
28. Power supply 120V 50/60 Hz.
29. Thermostatic heating - Heating for operation until -45° C.

STANDARD DIMENSIONS (MM)



With a constant view of adopting the latest technological developments, Automatic Systems reserves the right to amend the information above, at any time.