

# PRIMA H4

## Shunting Locomotives

The PRIMA H4 locomotive family, based on a four-axle design, allows high speed, best in class traction effort and optimized life cycle cost. The H4 locomotive is also designed to always keep an eye on the environment and is a green component of the PRIMA locomotive range.

### GENERAL DESCRIPTION

The PRIMA H4 family is based on a modular platform designed to provide operators the most suitable solutions for shunting services, track works and mini-mainline. The PRIMA H4 novelty lies in its specific Bo'Bo' configuration which copes with both low maintenance costs and high operational performances. Being the H4 locomotive part of the Alstom PRIMA range, it benefits from the large experience of Alstom in the locomotive segment. The wide rolling stock offer can be accompanied with the best Alstom expertise in Services in order to provide great availability at the most optimised operational cost.

### CUSTOMER BENEFITS

#### Environmentally friendly

The H4 is a green component of the PRIMA locomotive range. The generators that equip some PRIMA H4 versions, are one or two state-of-the-art energy efficient diesel engines and can be combined with an auto start-stop system or other options to reduce the diesel fuel up to 15% compared to a traditional shunting locomotive.

The PRIMA H4 also brings the advantage of noise reduction compared to diesel locomotives, still providing high power.

#### Enhanced flexibility and autonomy

The PRIMA H4 allows changing the driving mode from electrical to diesel which increases the operational flexibility. Numerous versions of this type of locomotive are available, they can be equipped with diesel engine, with overhead power supply or batteries: each operator will find a version of PRIMA H4 that perfectly answer to its needs.

The 3 400 litre tank volume of the PRIMA H4 (double engine version) equipped with diesel engine, provides large autonomy.

#### Higher speed and traction effort

The PRIMA H4 locomotive can operate safely at speeds up to 120 km/h whereas most shunter in this class are designed to run at 80 km/h maximum. It can easily be integrated into traffic flow for mainline services or when transiting between sites. In addition, its specific configuration makes possible to manage 80m curve radius. The high traction effort, up to 300 kN, brings better adhesion to start in curves or in hilly areas as well as the possibility to tow more wagons.

#### Driver comfort and safety

The driver's cab of the PRIMA H4 has been designed to respond to operational needs such as allowing good visibility, or providing sufficient space for the driver and up to three additional passengers. The driver's cab is accessible via front or back entries using gangways, the train can safely be crossed from one side of the track to another.

### DIFFERENT POWER SOURCES

The PRIMA H4 locomotive can be adapted to different customer needs, being configurable with several power sources:

- Hybrid
- Double Engine
- Bi-mode
- Bi-mode Battery



**TECHNICAL SPECIFICATION**

Length	18 750 mm
Width	2 950 mm
Mass	80t up to 90t
Gauge	1 435 mm (UIC standard)
Maximum axle load	20t up to 22,5t
Axle configuration	Bo'Bo'
Starting effort	300 kN
Curve radius	80 m
Vertical radius	250 m
Multiple unit operation	Up to 4
Operation temperatures	-25°C to +40°C
Power supply	Hybrid Version: diesel and NiCd battery Double Engine Version: diesel Bi-mode Version: diesel and catenary Bi-mode Battery Version: NiCd battery and catenary
Fuel tank capacity	Up to 3 400 l (versions equipped with two diesel engine)
Voltage	25kV, 15kV, 3kV, 1.5kV (versions equipped with catenary)
Nominal power	Hybrid Version: 600 kW battery / 895 kW diesel Double Engine Version: 2 x 895 kW diesel Bi-mode Version: 895 kW diesel / 2000 kW catenary Bi-mode Battery Version: 600 kW battery / 2000 kW catenary

**GREAT ADVANTAGES FOR EACH VERSION**

**PRIMA H4 Hybrid**

Equipped with one 895 kW generator and 600 kW batteries to perform shunting and light mainline services, PRIMA H4 Hybrid is the perfect solution for catenary less operation in emission free mode.

**PRIMA H4 Double Engine**

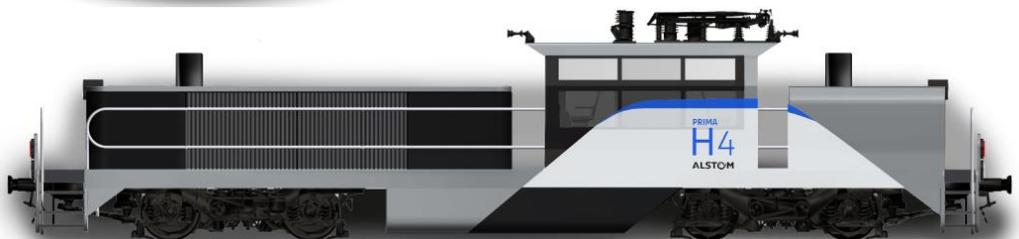
The two generators allow PRIMA H4 Double Engine to operate on long distance at heavy load and at the same time saving in fuel consumption compared to a single engine locomotive still keeping a great autonomy.

**PRIMA H4 Bi-mode**

Overall, the PRIMA H4 Bi-mode can provide a great power for heavy shunting and mainline services. The possibility to operate with or without catenary make this version of the PRIMA H4 the most versatile on the high power segment.

**PRIMA H4 Bi-mode Battery**

The H4 Bi-mode Battery operates in an emission-free mode, avoiding pollution in sensitive areas, in industrial plants or in tunnels but still delivering high power and autonomy.



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