Dispolok BR189 Electric Locomotive

Release Version 1.0

1 Background

1.1 Dispolok 189

The EuroSprinter family of electric locomotives, built by Siemens, is a modular concept of locomotives for the European market. The internal Siemens product name is ES 64, with ES for EuroSprinter and the number 64 indicating the 6,400 kW power at rail. Additional information is given in the name and denotes the usage. U for Universal, P as Prototype and F as Freight.

The ES 64 F4 is an electric freight locomotive with 6,400 kW (8,600 hp) power and a top speed of 140 km/h (87 mph), in Germany the reporting name is Class 189. It is also equipped for passenger service, but is rarely used in that role. ES 64 F4 is equipped for all four electric systems commonly used in Europe (15 and 25 kV AC, 1.5 and 3 kV DC). The braking system includes an electrical energy recovery system.
As well as being in service with Deutsche Bahn AG as Class 189, it is also utilized by the Dispolok locomotive pool and also by SBB as Class RE 474.

Builder	Siemens
Locomotive Weight	87 tonnes
Vehicle Length	19.58m
Vehicle Power	8,600hp (6,400kW)
Top Speed	87 MPH (140km/h)
Brake Types	Air and Electric
Tractive Effort	67,000 lb (300 kN)

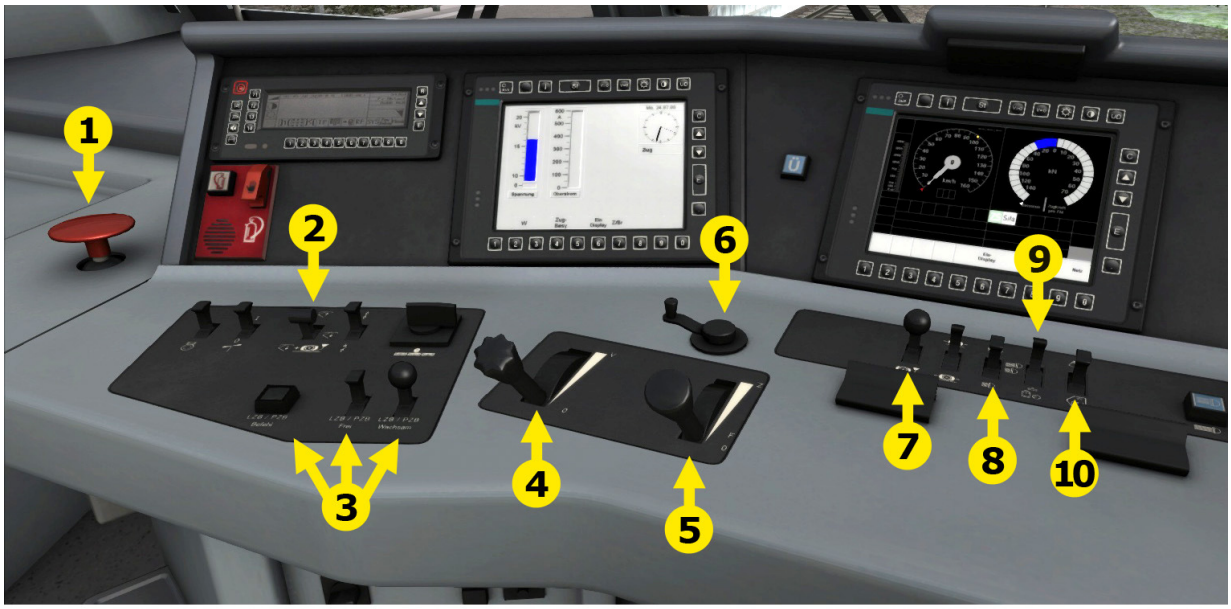
2 Rolling Stock

2.1 Dispolok ES64 F4

2.2 SGGRSS Wagon

3 Driving the Dispolok 189

3.1 Cab Controls



1	Emergency Brakes	9	Dial Lights (I)
2	Pantograph	10	Cab Light / Desk Light (L & Shift L)
3	PZB	11	Train Brake
4	AFB	12	Engine Brake
5	Power Lever	13	Direct Control Brake *
6	Reverser	14	Horn
7	Sander	15	Wipers
8	Head Lights		

* This is an advanced control and therefore not available on the HUD or Xbox controller.

4 AFB Train Power Control

AFB stands for Automatische Fahr- und Bremssteuerung – or loosely translated in to English it means "Automatic Driving and Braking Control"

AFB allows the driver of the locomotive to set the target speed and then the computer in the locomotive will apply the throttle to obtain that speed and then keep applying throttle or brake in order to maintain it. You can almost think of it as a kind of Cruise Control for trains.

To operate AFB, simply follow these steps:

1. Set the AFB control to the desired speed. Note on the speedometer a small red triangle "bug" will slide around to the configured speed.

2. Release the brakes.

3. Move the throttle control to the desired level of acceleration, at this point the train will begin moving and accelerate to the configured speed.

All speed changes should be managed with the AFB control, simply change the target speed as required and the AFB Computer will apply throttle and brakes appropriately.

If you wish to come out of AFB control and return to manual control, simply set the target speed to 0km/h and then the throttle and brake controllers will return to normal manual functionality.

4.1 Key Controls

Function	Keyboard
Increase	Y
Decrease	C

5 SIFA

SIFA is short for Sicherheitsfahrschaltung or "Safety Driving Switch".

The SIFA vigilance alerter is disabled at startup, but can be activated or deactivated by pressing 'Shift+Enter(Numpad)'. While activated the SIFA light on the cab dashboard is normally switched off. While the train is moving the driver is required to confirm an alarm every 30 seconds.

When the 30 second alarm is triggered the SIFA light on the cab dashboard will illuminate, after an additional 4 seconds an audible alert will sound. After a further 2.5 seconds the emergency brake will be applied. This can be avoided by acknowledging the alarm at any stage by pressing the 'Enter(Numpad)' key.

5.1 Key Controls

Function	Keyboard
Activate/Deactivate	Shift+Enter(Numpad)
Alarm Acknowledge	Enter(Numpad)

6 PZB Signalling System

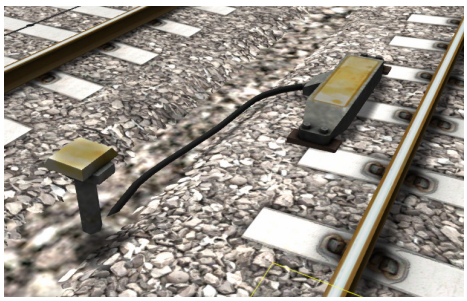
PZB stands for Punktförmige Zugbeeinflussung, loosely translated to English this means "Spotwise Train Control".

Safe distances between trains are managed conventionally through the use of block-based systems.
A given line is broken up in to a series of blocks, and trains are permitted (via green or yellow) signals to enter a block. While a train is present in a block the signal permitting entry is set to red, preventing any more trains to enter.

As railways have developed, more complex control systems and in-cab signalling have been implemented to improve the safety of the railways and to ensure that drivers are fully aware of what is happening around them by requiring them to react in certain ways according to what is happening.

PZB is a complex system and requires that you understand the varying speed limits and the requirement to respond promptly to the signalling system.

6.1 PZB Track Interface



The PZB system incorporates in-cab signalling, this is where the control desk has indicators, alarms and buttons that will react according to the signalling status on the railway. The mechanism by which this works is a series of "balise" magnets placed on the side of the track. An example of one of these magnets is shown in the image on the left.

6.2 Cab Controls

There are also three controls on the cab desk that you will need to use in order to interact with the PZB system.

These three controls, to the left of the control desk, item 2 in the cab control diagram above, are named as follows:

Override
Release
Acknowledge

6.3 Key Controls

Function	Keyboard
Activate/Deactivate	Ctrl+Enter(Numpad)
Acknowledge	Page Down
Release	End
Override	Del

7 Scenarios

7.1 Simple Controls Training: Dispolok BR189

Learn to drive the Dispolok BR189 using simple controls.

7.2 Expert Controls Training: Dispolok BR189

Learn to drive the Dispolok BR189 using expert controls.

7.3 [189] Night Line

Drive a Dispolok BR189 from Celle to Luneburg carrying some important freight.

- **Duration** **50 minutes**

7.4 [189] Maschen Mixup

Drive a BR189 from Maschen Yard down to Uelzen. A mixup and delay sees you playing catch up along the busy route to Hanover.

- **Duration** **50 minutes**

8 Acknowledgements

RailSimulator.com would like to thank the following people for their contribution to the development of the Dispolok BR 189.

Beta Testing Team