



Fact Sheet XXL

FIA Formula E

2018/2019

This is Formula E

All facts and figures +++ The Audi e-tron FE05 +++ The team
+++ The drivers +++ The partners +++ All races +++
Mobility for tomorrow +++ The history +++ Contact details +++

SCHAEFFLER

Pioneer of Formula E

Ever since Formula E was formed in 2014, Schaeffler has been one of the most notable and successful players in this racing series.

New technology – from the total vehicle to the powertrain and through to a radically modified battery system – plus new teams, drivers and locations now mark the beginning of the second era of Formula E in which Schaeffler wants to continue its success story. 13 races on five continents are on the calendar in season five.

For Schaeffler, Formula E has been and will continue to be an ideal stage for presenting our expertise in the field of forward-thinking technologies and ideas for sustainable mobility,” says Prof. Peter Gutzmer who as Chief Technology Officer and Deputy CEO initiated the Formula E project five years ago. “Since then, the series has evolved into the trendiest hotspot in the motorsport world, thrilling fans and media alike around the globe and with numerous

manufacturers and companies offering a competitive environment of the highest international caliber.”

In season four of the all-electric racing series, the Audi e-tron FE04 was very often the most efficient car. The successor for 2018/2019 is the evolution of this success model. This is particularly true for the centerpiece of the Audi e-tron FE05: the powertrain. The motor-generator unit named Audi Schaeffler MGU03 was developed jointly by Audi and its technology partner Schaeffler. The main focus of the engineers was on making the package even more efficient than before and to further increase its energy efficiency. The successful outcome of the project: 95 percent of all the powertrain components are new, plus the engineers managed to reduce weight by ten percent.

Daniel Abt and Lucas di Grassi are racing in Formula E with the newly developed Audi e-tron FE05



EDITORIAL

Two title wins, 35 podiums in 45 races and 94 percent of all possible race laps completed: Audi, ABT and Schaeffler – this has been one of the most successful partnerships in the first four years of Formula E, but not a reason for us to rest on our laurels: With new manufacturers and an even more efficient vehicle generation than the one before it the competition will

be fiercer than ever. As pioneers in electric mobility we from Schaeffler are on board again.



Daniel Pokorny
Head of Corporate
Communications Future Trends

Evolution of Formula E

2014/2015

In season one all teams compete with specification cars. The history of Formula E begins sensationally: Lucas di Grassi wins the inaugural race in Beijing. Following five more podiums, he finishes third overall and Daniel Abt eleventh overall.



2015/2016



The series slackens the technical regulations in terms of development. From then on, Schaeffler contributes the know-how for the powertrain of the new race car. Thanks to three victories in the 2015/2016 season Lucas di Grassi, with a deficit of just two points, finishes overall runner-up. Daniel Abt as the runner-up in Berlin clinches his best result to date.

2016/2017

At the top of the standings, a duel ensues between title defender Sébastien Buemi and Lucas di Grassi. At the season's midpoint, Buemi looks like the sure champion. Then di Grassi launches a fightback and crowns it with the title win at the finale.



2017/2018



Following a bumpy start of the season, Audi Sport ABT Schaeffler rises to top form: In eight consecutive races, at least one driver of the team mounts the podium. In the end, the team scores the teams' championship win, Lucas di Grassi finishes overall runner-up and Daniel Abt fifth overall.

Teamwork

Daniel Abt and Lucas di Grassi are the only driver pairing in the field to have contested all Formula E races in history side by side.



#11

Lucas di Grassi

Date of birth
August 11, 1984

Place of birth
São Paulo (BR)

Residence
Monaco (MC)

Height
1.80 m

Weight
75 kg

Facebook
lucasdigrassi

Twitter
@LucasdiGrassi

Web
lucasdigrassi.com.br

YouTube
LucasDiGrassi

Instagram
lucasdigrassi

- | | |
|--|------------------------------|
| 2007
2nd GP2 Series, Formula 1 test driver | 2016
2nd Formula E |
| 2014
2nd 24 Hours of Le Mans, 4th WEC | 2017
1st Formula E |
| 2015
3rd Formula E | 2018
2nd Formula E |



#66

Daniel Abt

Date of birth
December 3, 1992

Place of birth
Kempten (D)

Residence
Kempten/Munich (D)

Height
1.79 m

Weight
72 kg

Facebook
abtdaniel

Twitter
@Daniel_Abt

Web
danielabt.de

YouTube
AbtDaniel

Instagram
daniel_abt

Audi e-tron FE05

Length
5,200 mm

Width
1,800 mm

Height
1,250 mm

Wheelbase
3,100 mm

Minimum weight
900 kg (incl. driver)

Powertrain
Rear-wheel drive, motor-generator unit Audi Schaeffler MGU03, 1-speed transmission

Bodywork
Specification Spark carbon body with specification aerodynamics, FIA crash and safety standard

Battery
Lithium-ion battery from McLaren Applied Technologies, usable capacity 52 kWh, charging time approx. 45 minutes, weight approx. 385 kilograms (wet)

Brakes
Hydraulic dual-circuit braking system, electronically controlled brake force distribution, carbon fiber brake discs, "brake by wire" on rear axle

0-100 km/h
approx. 2.8 s

Top speed
240 km/h

Output in qualifying
250 kW

Output in the race
200 kW

The success story

In 2014, when nobody is ready yet to really believe in Formula E, ABT and Schaeffler, two pioneers in electric mobility, team up to dare this adventure. What follows is a motorsport success story performed in four acts.



The adventure begins
In Formula E's inaugural season, Schaeffler and ABT with Lucas di Grassi and Daniel Abt form the only German team.



Schaeffler inside
Schaeffler together with ABT develops the powertrain of the new ABT Schaeffler FE01 race car.



Champion!
In the ABT Schaeffler FE02 that has been further developed in all areas, Lucas di Grassi becomes champion.



The best team
Audi enters the series with a factory-backed commitment, Schaeffler remains exclusive technology partner. Audi Sport ABT Schaeffler becomes champion.

Partners

Audi

Active in motorsport with factory-backed commitments since the 1980s +++ Successes in rally, sports car and touring car racing +++ Initially gives its name to the team in Formula E +++ In 2016/2017, partnership with Schaeffler and ABT intensified +++ Since 2017/2018 season, active as manufacturer and entrant

Formula E

1 x teams' champion

WEC

2 x drivers' world champion
2 x manufacturers' world champion
13 x winner Le Mans 24H

DTM/Super Touring Cars

10 x drivers' champion (DTM)
4 x manufacturers' champion (DTM)
12 x drivers' champion (STW)
8 x manufacturers' champion (STW)

Rally

2 x drivers' world champion
2 x manufacturers' world champion

ABT

Founded in 1896 as a smithy +++ Bavarian family-owned business +++ Leading tuner for automobiles from the Volkswagen Group +++ Firmly established in motorsport since the 1990s +++ Formula E race team since season one +++ Daniel Abt is the son of CEO Hans-Jürgen Abt

Formula E

1 x drivers' champion
1 x teams' champion

DTM

5 x drivers' champion
4 x teams' champion

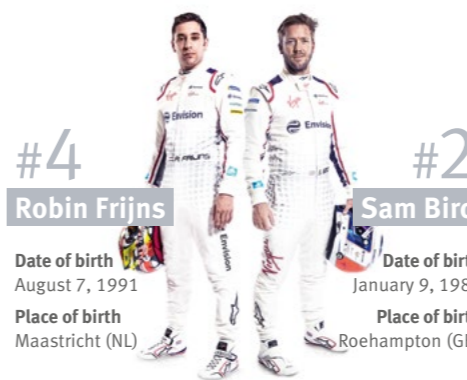
ADAC GT Masters

1 x drivers' champion
1 x teams' champion



Envision Virgin Racing

Since season two Schaeffler, initially together with ABT and subsequently with Audi, has been responsible for the development of the powertrain. Now, four drivers are racing with technology from Herzogenaurach: In addition to its own factory team, Audi Sport is equipping Envision Virgin Racing with the Audi e-tron FE05 including the powertrain. The British race team with Sam Bird and Robin Frijns is one of the series' founding members and protagonists.



#4
Robin Frijns

Date of birth
August 7, 1991

Place of birth
Maastricht (NL)

#2
Sam Bird

Date of birth
January 9, 1987

Place of birth
Roehampton (GB)

E-Mobility as an innovation driver

Schaeffler is actively involved in shaping the rapid developments for "Mobility for tomorrow." Quality, technology and – sometimes spectacular – innovations are keys to success.

Alongside the digital transformation and Industry 4.0 (aka IIoT and smart factories) Schaeffler views electric mobility as one of the key innovation drivers going forward and has consolidated all of its activities in this sector in a new "E-Mobility" business unit. By 2020, Schaeffler will have invested more than 500 million euros in research, development and production of electric drive units. Schaeffler has long begun to

manufacture components and system solutions such as e-axes and hybrid modules in high-volume production.

For Schaeffler, Formula E is an ideal test laboratory for the development of electric mobility technologies and an ideal fit for "Mobility for tomorrow," the strategy pursued by the globally operating technology group in helping to shape mobility.

In the form of the Schaeffler 4ePerformance concept vehicle, the group has put a particularly fascinating e-mobility ambassador on wheels. The prototype provides a good example of the technology transfer from racing into a production-based powertrain concept.

Schaeffler facts

- > 92,000 employees worldwide
- 14 bn euro sales in 2017
- 2,400 patents filed in 2017
- 26,000 active patents and patents filed
- 170 locations in more than 50 countries
- 75 plants worldwide
- 60 Schaeffler components in automobiles worldwide (average)
- 18 research and development centers worldwide



Schaeffler 4ePerformance: the fully electric vehicle uses four Formula E motors with a total output of 880 kW (1,200 hp)

All races

- R1**  **December 15, 2018**
Ad Diriyah, KSA
- R2**  **January 12, 2019**
Marrakesh, MA
- R3**  **January 26, 2019**
Santiago de Chile, RCH
- R4**  **February 16, 2019**
Mexico City, MEX
- R5**  **March 10, 2019**
Hong Kong, HK
- R6**  **March 23, 2019**
Sanya, CN
- R7**  **April 13, 2019**
Rome, I
- R8**  **April 27, 2019**
Paris, F
- R9**  **May 11, 2019**
Monaco, MC
- R10**  **May 25, 2019**
Berlin, D
- R11**  **June 22, 2019**
Bern, CH
- R12/13**  **July 13 & 14, 2019**
New York City, USA

ABB FORMULA-E

 **FORMULA-E CHAMPIONSHIP**

Drivers & teams

No.	Driver	Team
11	Lucas di Grassi (BR)	Audi Sport ABT Schaeffler
66	Daniel Abt (D)	Audi Sport ABT Schaeffler
25	Jean-Eric Vergne (F)	DS TECHEETAH
36	André Lotterer (D)	DS TECHEETAH
2	Sam Bird (GB)	Envision Virgin Racing
4	Robin Frijns (NL)	Envision Virgin Racing
64	Jérôme d'Ambrosio (B)	MAHINDRA RACING
94	Pascal Wehrlein (D)	MAHINDRA RACING
22	Oliver Rowland (GB)	Nissan e.dams
23	Sébastien Buemi (CH)	Nissan e.dams
3	Nelson Piquet jr. (BR)	Panasonic Jaguar Racing
20	Mitch Evans (NZ)	Panasonic Jaguar Racing
19	Felipe Massa (BR)	Venturi Formula E Team
48	Edoardo Mortara (CH)	Venturi Formula E Team
8	Tom Dillmann (F)	NIO Formula E Team
16	Oliver Turvey (GB)	NIO Formula E Team
6	Maximilian Günther (D)	GEOX DRAGON
7	José María López (RA)	GEOX DRAGON
27	Alexander Sims (GB)	BMW ANDRETTI
28	António Félix da Costa (P)	BMW ANDRETTI
5	Stoffel Vandoorne (B)	HWA RACELAB
17	Gary Paffett (GB)	HWA RACELAB

On television

All TV schedules at www.fiaformulae.com

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