Questionnaire for the Design of a Roof Mounted Pantograph

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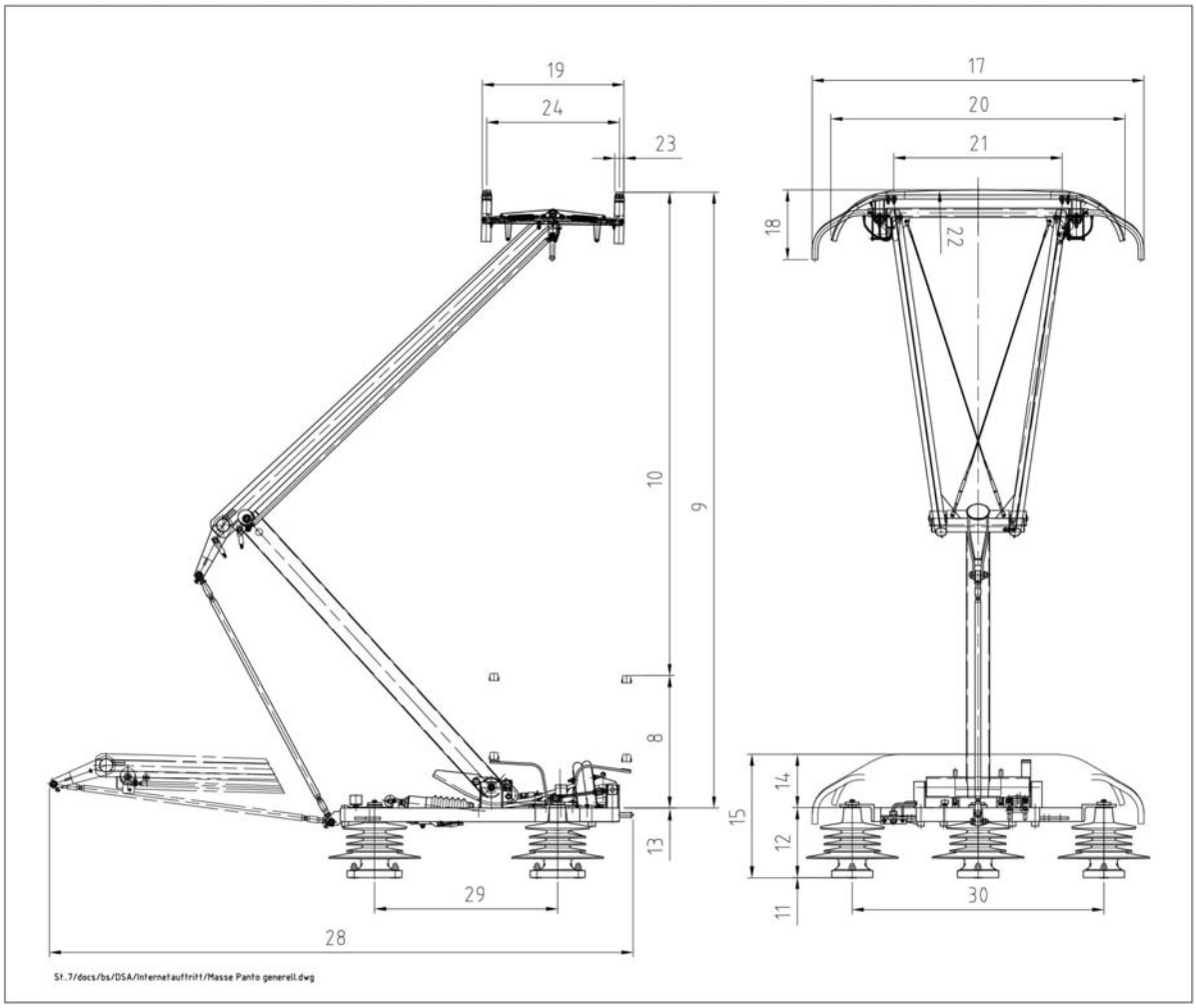
Details for heavy rail vehicles following EN50602-1 and for light rail vehicles (suburban trains and trams) following EN50206-2



Principle of the Pantograph Sketch

1 Rated voltage (EN50206-1 (-2), 3.3.1) = (3.3.1) _____ V
O AC
O DC

2 Rated current, vehicle in standstill (3.3.2) _____ A

3 Maximum current, vehicle in standstill (3.3.3) _____ A

4 Rated current, vehicle in operation (3.3.4) _____ A

5 Static contact force (3.3.5) _____ N

6 Average total contact pressure (EN50206-1, Item 3.3.7) _____ N

7 Total contact pressure (EN50206-1, Item 3.3.8) _____ N

8 Minimum operation height (3.3.11) _____ mm

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9 Maximum operation height (3.3.12) _____ mm

10 Working area (3.3.13) _____ mm

11 Height of the installation surface (from lower edge insulator) above track upper edge _____ mm

12 Height of insulator

Voltage in kV	Height in mm	O
0,75	60	O
1,5	80	O
3	125	O
15 / 25	306	O
Customer's provision of the insulators		O

13 Height of the installation surface (from upper edge insulator) above track upper edge _____ mm

14 Height in lowest position from upper edge of insulator (3.2.14) _____ mm

15 Height in lowest position from lower edge of insulator _____ mm

16 Collector head profile for heavy rail vehicles acc. to UIC608

Encl.	17 Collector head length(3.2.6)	18 Collector head height	
B:	1450 mm	300 mm	O
C:	1600 mm	300 mm	O
D.1:	1950 mm	368 mm (for the DB 340 mm)	O
D.2:	1950 mm	367 mm	O

19 Collector head width (3.2.7) _____ mm

Collector head-/contact strip profile for light rail vehicles acc. to DIN 43 267
DIN 43 267 1. Profile: straight carbon contact piece O
DIN 43 267 2. Profile: bent carbon contact piece O

20 Contact strip length with end horns _____ mm

21 Contact strip length (3.2.10) _____ mm

22 Contact strip radius _____ mm

23 Contact strip width _____ mm

24 Centre distance of the contact strips _____ mm

27 Number of the contact strips _____ pieces

28 Length of the pantograph in lowest position _____ mm

29 Attachment dimensions in longitudinal direction of vehicle _____ mm

30 Attachment dimension in transverse direction of vehicle _____ mm

31 Automatic Dropping Device (ADD) Yes O / No O

32 Design of the pantograph:
- Standard single arm pantograph O
- Special design diamond shaped pantograph in two arm version O
- Special design diamond shaped pantograph in four arm version O

33 Mode of actuation:
- Spring and electric (standard 24 V DC) O
- Spring / pneumatic up O
- Spring / pneumatic down O
- Pneumatic (direct air operated) O

34 Corrosion Protection
- Two-layer paint structure O
- Three-layer paint structure O
- Powder coating total layer thickness 80 µm O RAL 7012
- Powder coating total layer thickness 80 µm O RAL 9005

35 Maximum vehicle speed _____ km/h

36 Maintenance:

- Requirements to design life
  - Design life of pantograph _____ km or years
  - Design life of wear parts: _____ km or years

37 Details for LCC – Calculation if necessary: O

- Reliability (following the operation interference categories acc. to VDV164):
  - Failure rate per system: (category 1-4) _____ FPMK
- Maintenance measures
  - preventative maintenance
  Maintenance intervals: _____ km _____ km _____ km
  _____ km _____ km _____ km

38 Details for evaluation of the creeping and air gap distances acc. to EN 50124-1

- Operational environment acc. to EN 50124-1 enclosure E for external areas, vehicle roof is **PD4**
- Details regarding overvoltage categories for determination of the rated surge voltage acc. to EN50124-1

OV3	like OV4, but with less severe overvoltages and/or less requirements regarding the safety and reliability.	O
OV4	electric circuits which are not protected against internal and external overvoltage and which are endangered by lightning or switching overvoltage	O

39. Special Requirements: .....

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