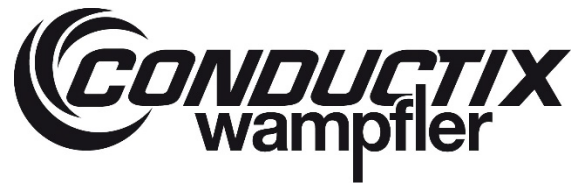
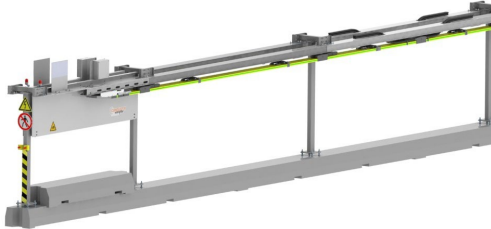


# Commissioning Checklist



## E-RTG / RTG electrification system

0852 Drive-in-L steel structure – conductor rail – data transfer



**This checklist should be used as a guideline to ensure the safe operation of the electrification system!**

The checklist is addressed to qualified specialists who install and commission energy transmission systems and who are familiar with the regulations regarding work safety and prevention of accidents.

Read and follow all safety, warning instructions and details of the installation in the assembly instructions MAL0852-0005 (for applications without data transmission) or MAL0852-0008 (for applications with data transmission) and when using code tape MV0852-0009.

**During initial commissioning the acceptance report has to be completed!**

|                |  |
|----------------|--|
| Project:       |  |
| Customer:      |  |
| CXW-Order-No.: |  |

|               |  |
|---------------|--|
| End Customer: |  |
| Address:      |  |
| Country:      |  |

|                                |  |
|--------------------------------|--|
| Facility/Building/Block/Aisle: |  |
| Serial Number (if applicable): |  |
| Period of commissioning:       |  |
| Additional Remarks:            |  |

|  |  |
|--|--|
|  |  |
|  |  |
|  |  |

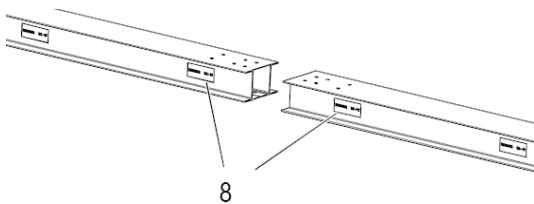
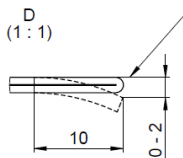
|            |                                 |
|------------|---------------------------------|
|            | Commissioner/Service Technician |
| Name:      |                                 |
| Date:      |                                 |
| Signature: |                                 |

# Commissioning Checklist

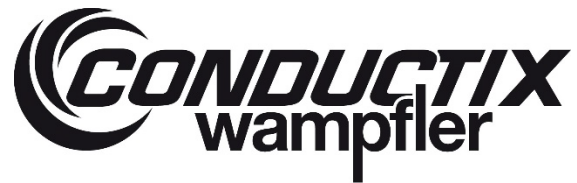


## E-RTG / RTG electrification system

0852 Drive-in-L steel structure – conductor rail – data transfer

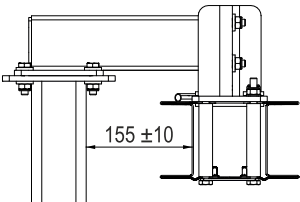
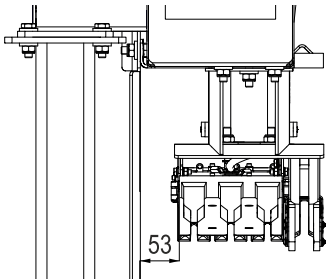
| No.      | Description                                                                                                                                                                                                                                 | Target Value                                                    | Remarks                                                                  | OK | Not OK |
|----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------|--------------------------------------------------------------------------|----|--------|
| <b>1</b> | <b>Steel Construction</b>                                                                                                                                                                                                                   |                                                                 |                                                                          |    |        |
| 1.1      | Position of the steel posts according to port layout and checked by the port operator respectively by a surveyor.                                                                                                                           | Spec. port layout                                               |                                                                          |    |        |
| 1.2      | Grounding of the steel posts implemented:<br>- Grounding of the track beams executed.<br>- Grounding of the PE-conductor rail executed.                                                                                                     | MAL0852-0005 or MAL0852-0008 and according to local regulations |                                                                          |    |        |
| 1.3      | The steel posts perpendicular aligned.                                                                                                                                                                                                      |                                                                 | Visual inspection                                                        |    |        |
| 1.4      | The pressure plate of Drive in Zone perpendicular aligned.                                                                                                                                                                                  |                                                                 |                                                                          |    |        |
| 1.5      | Bushings used on elongated holes on track beam holders.                                                                                                                                                                                     |                                                                 |                                                                          |    |        |
| 1.6      | Track beam running parallel to RTG track.                                                                                                                                                                                                   |                                                                 | Visual inspection                                                        |    |        |
| 1.7      | The marking (8) of the track beam must always be on the same side.<br>                                                                                   |                                                                 | Visual inspection                                                        |    |        |
| 1.8      | Expansion gap between track beams is in accordance with the table in the general arrangement drawing.                                                                                                                                       | General arrangement drawing                                     | Temperature during installation: _____ °C<br>see table template in annex |    |        |
| 1.9      | Track beam edges (roller running surface) not upwards bend.<br><br>On both ends: corners have to be aligned or point away from the center of the profile | Tolerance:<br>0 - 2 mm                                          |                                                                          |    |        |
| 1.10     | Reflector plate at Drive in Zone is not dirty and not defect.                                                                                                                                                                               |                                                                 | Clean and intact                                                         |    |        |
| 1.11     | Check distance between track beam and post.                                                                                                                                                                                                 | Tolerance:<br>±10 mm                                            |                                                                          |    |        |

# Commissioning Checklist



## E-RTG / RTG electrification system

0852 Drive-in-L steel structure – conductor rail – data transfer

| No.      | Description                                                                                                                                                                                                                                               | Target Value                           | Remarks                                                               | OK | Not OK |
|----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|-----------------------------------------------------------------------|----|--------|
|          |                                                                                                                                                                          |                                        |                                                                       |    |        |
| 1.12     | Emergency stop cables are routed to the emergency stop switch from below.                                                                                                                                                                                 |                                        |                                                                       |    |        |
|          |                                                                                                                                                                                                                                                           |                                        |                                                                       |    |        |
| <b>2</b> | <b>Conductor Rail</b>                                                                                                                                                                                                                                     |                                        |                                                                       |    |        |
| 2.1      | Conductor rails are correctly installed into the hanger clamps.                                                                                                                                                                                           |                                        |                                                                       |    |        |
| 2.2      | Distance of hanger clamps are correct.                                                                                                                                                                                                                    | According to spec. layout plan         |                                                                       |    |        |
| 2.3      | The PE-conductor rail (green stripe) is on the correct position.                                                                                                                                                                                          | Green stripe shows direction RTG track | Visual inspection                                                     |    |        |
| 2.4      | Position of expansion joints and fixed points correct.                                                                                                                                                                                                    | According to spec. layout plan         |                                                                       |    |        |
| 2.5      | Check distance between pickup guide and pressure plate.<br>                                                                                                            |                                        |                                                                       |    |        |
| 2.6      | Long side of expansion joint facing towards power feed.                                                                                                                                                                                                   |                                        |                                                                       |    |        |
| 2.7      | Hanger clamp installed between the expansion unit.                                                                                                                                                                                                        |                                        |                                                                       |    |        |
| 2.8      | The expansion gaps $x_1$ and $x_2$ are open and adjusted in accordance with the table in the project-specific layout plan. Every expansion unit must be checked. Important: the sum of $x_1$ and $x_2$ must be in accordance with the value in the table. | Project-specific layout plan           | Temperature during check: _____ °C<br><br>see table template in annex |    |        |

# Commissioning Checklist



## E-RTG / RTG electrification system

0852 Drive-in-L steel structure – conductor rail – data transfer

| No.  | Description                                                                                                                                                                                                            | Target Value                   | Remarks                                                                                                                                                                               | OK | Not OK |
|------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|--------|
| 2.9  | <p>The value of the air gap at the pickup guide is in accordance with the value in the table on the project-specific layout plan.</p> <p><b>NOTE:</b> If there are two drive-in zones, both sides must be checked.</p> | Project-specific layout plan   | <p>Temperature during the check: _____ °C</p> <p>Expansion gap L1: _____ mm</p> <p>Expansion gap L2: _____ mm</p> <p>Expansion gap L3: _____ mm</p> <p>Expansion gap PE: _____ mm</p> |    |        |
| 2.10 | The power feed is installed in such a way that no collision with the rail holders occurs in the event of thermal shifting.                                                                                             |                                |                                                                                                                                                                                       |    |        |
| 2.11 | The connecting cables of the power feed can compensate for thermal shifting.                                                                                                                                           |                                |                                                                                                                                                                                       |    |        |
| 2.12 | The edge protector on the openings of the track beam for the cable entry is mounted.                                                                                                                                   |                                |                                                                                                                                                                                       |    |        |
| 2.13 | End caps present, correctly installed and fixed.                                                                                                                                                                       |                                |                                                                                                                                                                                       |    |        |
| 2.14 | No wire in the driveway of the RTG electrification unit.                                                                                                                                                               |                                |                                                                                                                                                                                       |    |        |
| 2.15 | Earthing wire between track beam and conductor rail installed with expansion loop.                                                                                                                                     |                                |                                                                                                                                                                                       |    |        |
| 2.16 | Whole conductor rail installation checked with test trolley.                                                                                                                                                           |                                |                                                                                                                                                                                       |    |        |
| 2.17 | Sharp edges in are of wires with edge protection mounted.                                                                                                                                                              |                                |                                                                                                                                                                                       |    |        |
| 2.18 | Magnets mounted at correct position according to layout plan of the electrification system.                                                                                                                            | According to spec. layout plan |                                                                                                                                                                                       |    |        |
| 2.19 | Magnets mounted correctly oriented (red - green) according to flowchart.                                                                                                                                               |                                |                                                                                                                                                                                       |    |        |
| 2.20 | Emergency stop switch at Drive-In Zone is mounted and connected.                                                                                                                                                       |                                |                                                                                                                                                                                       |    |        |
| 2.21 | Warning light at Drive-In Zone is mounted.                                                                                                                                                                             |                                |                                                                                                                                                                                       |    |        |
| 2.22 | Warning signs and information panels at Drive-In Zone are mounted.                                                                                                                                                     |                                |                                                                                                                                                                                       |    |        |

# Commissioning Checklist



## E-RTG / RTG electrification system

0852 Drive-in-L steel structure – conductor rail – data transfer

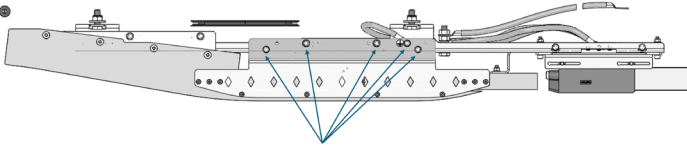
| No.  | Description                                                                                                                                            | Target Value                    | Remarks                                                           | OK | Not OK |
|------|--------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------|-------------------------------------------------------------------|----|--------|
| 2.23 | All bolts and nuts tightened according to prescribed tightening torque.                                                                                |                                 |                                                                   |    |        |
| 2.24 | Power supply cable in the pillar box properly is installed by the operator and equipped with cable relief.                                             | According to spec. circuit plan | Visual inspection                                                 |    |        |
| 2.25 | Connection cable for the conductor rail is properly installed in the pillar box.                                                                       | According to spec. circuit plan | Visual inspection                                                 |    |        |
|      |                                                                                                                                                        |                                 |                                                                   |    |        |
| 3    | <b>Code tape</b> (if code tape is part of the application)                                                                                             |                                 |                                                                   |    |        |
| 3.1  | Code tape flush cut at expansion gap of track beams.                                                                                                   | MV0852-0009                     |                                                                   |    |        |
| 3.2  | Event marker is correctly installed.                                                                                                                   | MV0852-0009                     |                                                                   |    |        |
| 3.3  | Code tape and event marker are in the correct position, correctly attached and do not protrude from the track beams.                                   |                                 |                                                                   |    |        |
|      |                                                                                                                                                        |                                 |                                                                   |    |        |
| 4    | <b>ProfiDAT</b> (if ProfiDAT is part of the application)                                                                                               |                                 |                                                                   |    |        |
| 4.1  | Number of profile hanger clamps is correct.                                                                                                            | max. spacing<br>3000 mm         |                                                                   |    |        |
| 4.2  | ProfiDAT rails are correctly inserted into hanger clamps.                                                                                              |                                 |                                                                   |    |        |
| 4.3  | The anchor points of the ProfiDAT rail are mounted in accordance with the project specific layout plan.                                                |                                 |                                                                   |    |        |
| 4.4  | Expansion gap in the expansion unit on the route is adjusted in accordance with the value in the table on the project-specific layout plan.            | Project-specific layout plan    | Temperature during the check: _____ °C<br>Expansion gap: _____ mm |    |        |
| 4.5  | The expansion gap on the expansion unit of the pickup guide is adjusted in accordance with the value in the table on the project-specific layout plan. | Project-specific layout plan    | Temperature during the check: _____ °C<br>Expansion gap: _____ mm |    |        |

# Commissioning Checklist



## E-RTG / RTG electrification system

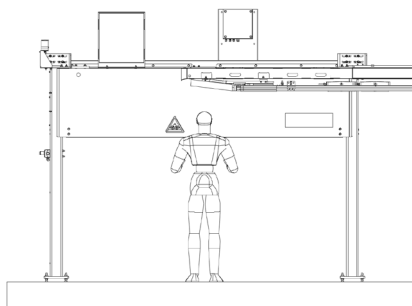
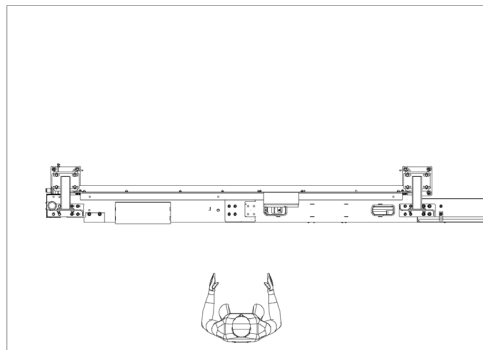
### 0852 Drive-in-L steel structure – conductor rail – data transfer

| No.  | Description                                                                                                                                                                                                                                 | Target Value                                             | Remarks | OK | Not OK |
|------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------|---------|----|--------|
| 4.6  | ProfiDAT rails are correctly installed and the gap between the rails are closed (best is zero gap). The marking point at the connector is centered between both rails.                                                                      | No vertical or horizontal offset, max. gap $\leq 0.5$ mm |         |    |        |
| 4.7  | Clearance at the ProfiDAT rail connectors are verified with a feeler gauge of 0.6 mm, which does not fit into the gap.                                                                                                                      | 0.6 mm                                                   |         |    |        |
| 4.8  | ProfiDAT feed-in assemblies are correctly installed, including HF cables and connectors.                                                                                                                                                    |                                                          |         |    |        |
| 4.9  | <p>Screws are mount into correct direction at funnel, screw thread inwards direction and earthing wire installed inside.</p>  <p>Screws to be checked</p> | Screw thread inwards directed                            |         |    |        |
| 4.10 | Scotch 23 adhesive tape applied on plugs and sockets.                                                                                                                                                                                       |                                                          |         |    |        |
| 4.11 | Protective earth connection to steel structure in accordance with the project specific layout.                                                                                                                                              |                                                          |         |    |        |
| 4.12 | ProfiDAT stationary feed-in fits correctly in or on the insulating foil (between Feed-in unit and ProfiDAT rail).                                                                                                                           |                                                          |         |    |        |
| 4.13 | All bolts have been tightened with correct torque according to specification and marked with stripe.                                                                                                                                        |                                                          |         |    |        |
| 4.14 | Cables are not kinked.                                                                                                                                                                                                                      |                                                          |         |    |        |
| 4.15 | Sharp edges over which cables are routed are fitted with edge protection.                                                                                                                                                                   |                                                          |         |    |        |
| 4.16 | Any HF cable overlengths are laid in in form of an eight (not a roll).                                                                                                                                                                      |                                                          |         |    |        |

Annex to 1.8

Note the direction from which the system is viewed:

### 0852 Drive-in-L steel structure – conductor rail – data transfer

[illegible][illegible]

# Commissioning Checklist

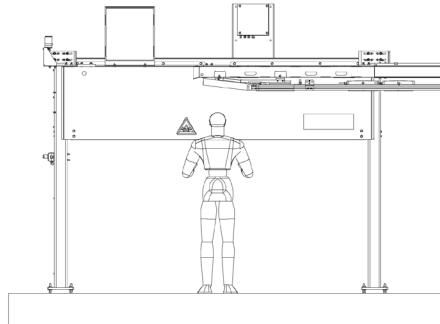
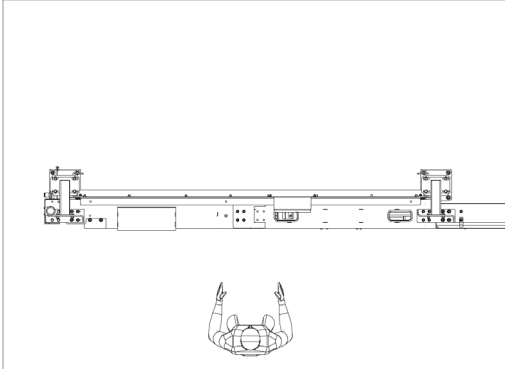


## E-RTG / RTG electrification system

0852 Drive-in-L steel structure – conductor rail – data transfer

Annex to 2.8

Note the direction from which the system is viewed:



Block no.:

|                        | X1 | X2 | Air gap per expansion unit x1 + x2 | Ambient temperature [°C] |
|------------------------|----|----|------------------------------------|--------------------------|
| Expansion unit 1 on L1 |    |    |                                    |                          |
| Expansion unit 1 on L2 |    |    |                                    |                          |
| Expansion unit 1 on L3 |    |    |                                    |                          |
|                        |    |    |                                    |                          |
| Expansion unit 2 on L1 |    |    |                                    |                          |
| Expansion unit 2 on L2 |    |    |                                    |                          |
| Expansion unit 2 on L3 |    |    |                                    |                          |
|                        |    |    |                                    |                          |
| Expansion unit 3 on L1 |    |    |                                    |                          |
| Expansion unit 3 on L2 |    |    |                                    |                          |
| Expansion unit 3 on L3 |    |    |                                    |                          |
|                        |    |    |                                    |                          |
| Expansion unit 4 on L1 |    |    |                                    |                          |
| Expansion unit 4 on L2 |    |    |                                    |                          |
| Expansion unit 4 on L3 |    |    |                                    |                          |
|                        |    |    |                                    |                          |