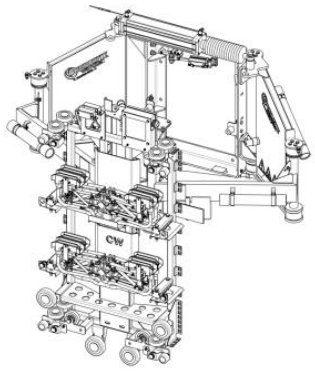
Commissioning Checklist

E-RTG™ / RTG electrification system

0851 Drive-In 2+2 with PLC „wire interface“



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 electrification systems and who are familiar with the regulations regarding work safety and prevention of accidents.

Read and follow all safety and warning instructions in the assembly instructions MAL0851-0001 to this product.

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:	

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No.	Description	Remarks	OK	Not OK
1	**General testing**			
1.1	No external damage to carriage, pantograph, vertical unit, control cabinet or pneumatic cabinet visible.			
1.2	Drive-In Unit (DIU) is installed on RTG at proper height as per “Layout Drive-In Unit” in customer-specific appendix.			
1.3	Control cabinet is mounted near to the Drive-In Unit. (not more than 5 meters away from the current collectors).			
1.4	Check all screws firmly to relays, overload barker, …..			
1.5	All wires properly connected (control cabinet, limit switch, …).			
1.6	Cable layout of current collectors in correct loops so that as the pantograph extends the cables have enough reserve length for free movement.			
1.7	Compressed air properly connected, pressure and flux adjusted.			
1.8	Manual control panel installed outside danger zone with view of Drive-In Unit.			
1.9	Interface signals between E-RTG PLC and Drive-In Unit (DIU) PLC tested.			
2	**Testing during extension of Drive-In Unit (DIU)**			
2.1	Outside the aisle: laser sensor gives no signal and the pantograph does not extend.			
2.2	After switchover to the manual control panel extension and retraction of the collector trolley are possible outside the aisle. Drive-In Unit operation through crane control is fully blocked.			
2.3	RTG in the correct position to the steel structure in the drive-in zone 1/9: Signal (indicator 1) to the operator.			
2.4	After actuation of button 1: Pneumatic interlock opens at correct time, signal (indicator 2) to the operator, "Pneumatic interlock open" and Drive-In Unit (DIU) extends slowly and smoothly.			
2.5	At least 3 rollers are in contact with guard			
2.6	At least 3 of 4 proximity switches 1-4 show contact with the steel structure: Signal (indicator 3) for the operator to continue Drive-in at a reduced speed in the direction of the center of the aisle.			
2.7	Rollers have enough free space against the pressure plates in the drive-in zone.			
2.8	Height of rollers has no offset from ramp.			
2.9	When moving in area of ramp, the current collectors move smoothly upwards according to the slope.			

No.	Description	Remarks	OK	Not OK
2.10	Current collector lines have enough clearance even when extended that they can compensate for movement of the pantograph arms.			
3	**Testing Drive-in of the unit into the steel structure/conductor rail**			
3.1	Safe and proper grounding of steel structure, DIU and RTG frame checked.			
3.2	Rollers have no gap from support surfaces and no projecting edges when entering the steel structure.			
3.3	Side roller guides have enough clearance in the steel structure.			
3.4	Current collectors move smoothly into the conductor rails.			
3.5	Transition from zone 2/8 to zone 3/7 and voltage applied to all phase brushes: signal (indicator 4) to switch to electric drive.			
3.6	After transition from zone 2/8 to zone 3/7 signal from magnetic switch M2 → main pneumatic cylinder on collector trolley disconnected from pressure.			
3.7	Signal output (indicator 5) after switching to electric drive - work possible at reduced speed.			
3.8	After transition from zone 4/6 to zone 5 signal from magnetic switch M2, "Maximum speed possible" to the E-RTG PLC.			
3.9	When zone 5 reached → signal from magnetic switch M2, max. speed possible.			
3.10	During process (along entire aisle) no arcs between current collectors and the conductor rail.			
3.11	The vertical unit has enough freedom for compensating movements during motion of RTG in the aisle.			
4	**Testing drive-out of the unit from the steel structure/conductor rail**			
4.1	When moving from zone 5 to zone 4 or 6 a signal from magnetic switch M2 switches to continued travel with reduced speed.			
4.2	When moving from zone 4/6 to zone 3/7 a signal from magnetic switch M1 shows to operator through indicator 4" Switch to Diesel drive".			
4.3	Continues from zone 3/7 to zone 2/8 leading to signal from magnetic switch M2 to crane control "Drive stopped with electric power". Indicator 4+5 go off and pressure is applied to the main pneumatic cylinder.			
4.4	After zone 2/8 is completely reached → signal from at least 3 initiators are present. Continues from zone 2/8 to zone 1/9 and positioning of laser distance sensor in front of reflection plate shows to driver through indicator 1 that Drive-in/ Drive-out zone is reached.			

No.	Description	Remarks	OK	Not OK
5	**Testing during retraction of the Drive-In Unit (DIU)**			
5.1	Pantograph must not be retracted when reflection plate is not in front of the laser sensor and indicator 1 not on.			
5.2	Drive-In Unit in zone 1/9 with reflection plate in front of the laser sensor and indicator 1 on. Collector trolley is retracted using button 2 so that signals from proximity switches 1 - 4 drop off and indicator 3 goes off.			
5.3	The collector trolley and pantograph are in the retracted end position and pneumatic interlock is closed.			
5.4	With collector trolley locked and signal by indicator 2 going out crane controller releases the Drive-out of the aisle.			
5.5	If collector trolley is not retracted and crane continues drive towards end of aisle the signal from the laser distance sensor drops off. If now proximity switches 5 or 6 fall off the Drive-In Unit PLC sends "Drive-In Unit fault". **NOTE: Any crane movement is blocked until the collector trolley is locked!**			
6	**Tests of Emergency Stop**			
6.1	Actuation of the “Emergency Stop” button on the RTG has the following effect on the Drive-In Unit: Compressed air supply for the system is disconnected immediately; no residual pressure may be left, all valves are disconnected from power.			
6.2	RTG moves at slow speed with extended collector trolley out of the steel structure leading to an Emergency Stop from crane controller. **NOTE: Any crane movement is blocked until the collector trolley is locked!**			
6.3	Personnel instructed in the operation of the system.			