



Protocol No.:	<h1 style="margin: 0;">Test protocol</h1>	 <small>CONSULTING ENTWICKLUNG TECHNOLOGIE</small>
Protocol of the <input type="checkbox"/> Initial <input type="checkbox"/> Periodic inspection		
Electrical installation:		Page 1 of 2
Building no./area:		
Circuit diagram / floor plan		
Mains _____ / _____ V	Electrical system <input checked="" type="checkbox"/> TN-C <input type="checkbox"/> TN-S <input type="checkbox"/> TN-C-S <input type="checkbox"/> TT <input type="checkbox"/> IT	
Basis for the inspection <div style="display: flex; justify-content: space-between; align-items: flex-start;"> <div style="width: 40%;"> Statutory basis <input type="checkbox"/> UVV BGV A3/GUV VA3 </div> <div style="width: 60%;"> <input type="checkbox"/> Ordinance on Industrial Safety and Health (BetrSichV) <input type="checkbox"/> German Workplace Ordinance (ArbStättV) </div> </div>		
Standards	Erection according to: <input type="checkbox"/> DIN VDE 0100	
Inspection according	<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <input type="checkbox"/> DIN VDE 0100-600 <input type="checkbox"/> _____ </div> <div style="width: 50%;"> <input type="checkbox"/> DIN VDE 0105-100 (Periodic inspection of installations) </div> </div>	
Reason for inspection	<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <input type="checkbox"/> New installation <input type="checkbox"/> Extension </div> <div style="width: 50%;"> <input type="checkbox"/> Extraordinary inspection <input type="checkbox"/> Alteration <input type="checkbox"/> Repairs </div> </div>	
<div style="border: 1px solid black; padding: 10px;"> <p>On the above</p> <div style="display: flex; justify-content: space-between;"> <div style="width: 30%;"> <input type="checkbox"/> Electrical installation <input type="checkbox"/> Electrical system the <input type="checkbox"/> Initial inspection <input type="checkbox"/> Periodic inspection </div> <div style="width: 65%;"> <input type="checkbox"/> We confirm that the installation and the permanently connected equipment / devices comply with the DIN VDE standards applicable to it. <input type="checkbox"/> In accordance with the above generally recognised good engineering practice, its safe use is guaranteed if the instructions are followed. </div> </div> <div style="display: flex; justify-content: space-between; margin-top: 10px;"> <div style="width: 30%;"> <input type="checkbox"/> was passed </div> <div style="width: 30%;"> <input type="checkbox"/> was not passed </div> <div style="width: 35%;"> <input type="checkbox"/> An inspection label was applied to the </div> </div> </div>		
Remarks:		
<div style="display: flex; justify-content: space-between;"> <div style="width: 60%;">Inspector</div> <div style="width: 35%; text-align: right;">Page 2 of 2</div> </div>		
<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> The installation was inspected under the responsibility of: Ms/Mr _____ with the collaboration of Ms/Mr _____ </div> <div style="width: 50%;"> Telephone _____ Telephone _____ </div> </div>		


Test devices			
1. Type / designation	Inv. no.	/ calibration date	
2. Type / designation	Inv. no.	/ calibration date	
3. Type / designation	Inv. no.		
4. Type / designation	Inv. no.		
Annex to inspection protocol			
1. Inspection inspection report	Pages		
2. Measurements inspection report	Pages		
3. Trial inspection report	Pages		
4. Fault report	Pages		
5. _____	Pages	_____	
Confirmation of inspection and handover / acceptance of the installation		Inspection protocol (with annexes) adhered to	
Inspection carried out professionally and in accordance with st		Installation / appliance functional	
from _____ to _____		accepted	
Responsible inspector (electrically skilled person)		Client	
Place / Date _____	Signature _____	Place / Date _____	Signature _____

Protocol No.:	Protocol No.:	 glass made of ideas	
Visual inspection report Annex 1 to inspection protocol			
Electrical installation:		Page 1 of 4	
Building no./area:			
Circuit diagram / floor			
Mains _____ / _____ V	Electrical system <input type="checkbox"/> TN-C <input type="checkbox"/> TN-S <input type="checkbox"/> TN-C-S <input type="checkbox"/> TT <input type="checkbox"/> IT		
Visual check			
Seq. No.	Examination	in order	Comments
General			
1	All required documents available (wiring diagrams, instructions for use and operating manual, functional description etc.)		
2	All markings present (equipment identification, circuits, clamp designations, supply line from..., designation of lines to distributors, etc.)		
3	Wiring and circuit diagrams correspond to the installation		
4	Circuit documentation available and provided		
5	Equipment assembly (equipment properly mounted and assembled)		
6	Equipment not damaged		
7	Correct selection of equipment (All equipment fulfils the safety requirements of the corresponding equipment standard, correctly selected and erected according to the place of use and the manufacturer's instructions, suitable for higher short-circuit current)		
8			
Confirmation of proper inspection			
Date _____	Inspector _____	Signature _____	
Seq. No.	Examination	in order	Comments
Yes No N/A			

General safety					
9	Installation has no external damage or defects				
10	Line connections (insulation, cubicle, clamp connections etc.)				
11	Line choice (line rating, cross-section, wire colours etc.)				
12	Line routing (cableway: Lines laid in the pipe or duct; horizontal and vertical assemble, etc. Line routing: bending radii maintained; lines properly fastened, no crossovers, etc. Line and cable feedthroughs , etc.)				
13	Protection by insulation (are all live parts fully insulated?)				
14	Protection by covering or enclosure (are all live parts protected by covering and/or enclosure?) (covering and enclosure securely fastened?)				
15	Protection by obstacles or distance				
16	IP protection ratings maintained				
Protection measures with protective conductors					
17	Are all protective conductors, earth conductors and potential conductors perfectly and reliably connected? (specification "Z"; secured against loosening)				
18	Was the minimum cross-section for protective conductors, earth conductors and equipotential bonding conductors maintained?				
19	Are all protective conductors and protective conductor connections correctly marked?				
20	Have any protective conductors accidentally been connected with live parts?				
21	Have any protective conductors and neutral conductors been inverted?				
22	Have all protective conductors and neutral conductors clearly been assigned to electric circuits?				
Confirmation of proper inspection					
Date _____		Inspector _____		Signature _____	
Seq. No.	Examination	in order			Comments
		Yes	No	N/A	
Protection measures with protective conductors					
23	Are all protective contacts of plug and socket devices in order and working? (<i>not bent; not dirty; not painted over</i>)				
24	Are there any switches or protection elements present in the line routing of the protective conductors and PFN conductors?				

Protection devices					
25	Overload protection device (selection, fitting, setting, function)				
26	RCD correctly selected (type AC / type A / type B consider selectivity and rated differential current)				
27	Surge protection devices correctly selected				
28	Are there any overload protection devices in the PEN conductor				
29	Are the PEN conductors alone not switchable?				
30	Protection in the IT system (are objects connected with a protective conductor individually, in groups or as a whole?)				
31	Protection in the TT system (do all simultaneously exposed objects or objects connected to a joint protection device have a shared earth electrode?)				
Protection measures without protective conductors					
Protection by protection class II equipment					
32	Are all insulation enclosures in perfect conditions?				
33	Is there any connection from the conductive parts of the equipment to the protective conductor?				
34	Have any conductive parts been routed through the insulation enclosure?				
Protection separation					
35	Are there any live parts of the circuit with protection separation connected with other circuits or with earth electrodes?				
36	Is there a secure electrical separation from other circuits?				
Confirmation of proper inspection					
Date		Inspector		Signature	
Seq. No.	Examination	in order			Comments
		Yes	No	N/A	
Protection separation					
37	If there are several consumable materials, are objects or protection contacts of plugs connected to each other by unearthed insulated equipotential bonding conductors?				
Protection by low-voltage					
38	Has the voltage range 50 V AC and 120 V DC been maintained?				
39	Has the current source been correctly selected?				

40	Plugs only fit in the corresponding ELV system				
41	Have live parts been securely separated from SELV and PELV circuits from FELV circuits and from circuits with higher voltages? (basic insulation for the highest voltage laid out?)				
SELV					
42	Are all plug connections without protection contacts				
43	Are there any live parts connected with earth electrodes or protective conductors of other circuits?				
PELV					
44	Have all simultaneously exposed objects and external conductive parts been connected to one and the same earthing system?				
Remarks:					
Confirmation of proper inspection					
Date _____		Inspector _____		Signature _____	

Protocol No.:		Protocol No.:		 MEBEDO <small>CONSULTING ENTWICKLUNG TECHNOLOGIE</small>			
Measurements inspection report Annex 2 to inspection protocol							
Electrical installation:					Page 1 of 8		
Building no./area:							
Circuit diagram / floor plan							
Mains _____ / _____ V		Electrical system <input type="checkbox"/> TN-C <input type="checkbox"/> TN-S <input type="checkbox"/> TN-C-S <input type="checkbox"/> TT <input type="checkbox"/> IT					
Measurement							
Low impedance connection of all protective conductors							
<p>There is no clear limit for the highest permissible protective conductor resistance specified according to DIN-VDE. It is advisable to follow the resistance coatings in the table (see next page). The limit must be determined according the conductor length, cross-section and material! A minimum measuring current of ≥200 mA must be used.</p>							
Seq. No.	Measuring point 1	Measuring point 2	Measurement value (in Ω)	Measurement value corresponds to			DIN-
				Yes	No		
Confirmation of proper inspection							
Date _____		Inspector _____		Signature _____			

**Tabelle : Leiterwiderstandsbeläge R' für Kupferleitungen bei 30° C
in Abhängigkeit vom Leiterquerschnitt S
zur überschlägigen Berechnung von Leiterwiderständen⁵⁾**

Leiterquerschnitt S mm ²	Leiterwiderstandsbeläge R' bei 30 °C mΩ/m
1,5	12,5755
2,5	7,5661
4	4,7392
6	3,1491
10	1,8811
16	1,1858
25	0,7525
35	0,5467
50	0,4043
70	0,2817
95	0,2047
120	0,1632
150	0,1341
185	0,1091

Die Leiterwiderstandsbeläge für $S = 1,5 \text{ mm}^2$ und $S = 2,5 \text{ mm}^2$ sind aus „Kabel und Leitungen für Starkstrom“ von Lothar Heinhold (Herausgeber und Verlag: Siemens AG Berlin und München) entnommen.
Die Leiterwiderstandsbeläge für Querschnitte $S \geq 4 \text{ mm}^2$ sind aus DIN VDE 0102 Teil 2/11.75, Tabelle 10, entnommen und auf 30 °C hochgerechnet worden.
Für andere Temperaturen θ_x lassen sich die Leiterwiderstände R_{θ_x} mit folgender Gleichung berechnen:

$$R_{\theta_x} = R_{30^\circ\text{C}} [1 + \alpha \cdot (\theta_x - 30^\circ\text{C})]$$

α = Temperaturkoeffizient
(bei Kupfer $\alpha = 0,00393 \text{ K}^{-1}$)

Insulation resistance

The insulation resistance must be measured between each live conductor and earth electrode.

Attention: For fire protection under VDE 0100-482 and in explosive areas, the insulation measurement must also be taken between live conductors

	Neuanlagen (DIN VDE 0100-482)	Wiederholungsprüfung (DIN VDE 0105-100)	
		ohne Verbraucher	mit Verbraucher

The insulation resistance of the SELV / PELV	0,5 MΩ	0,25 MΩ	3. In the event of obvious deviations from the expected values, further investigations must be conducted in order to find the reason for this.

Confirmation of proper inspection

Main circuit system voltage measurements

(C) S. Euler, M. Schäfer - MEBEDO GmbH Seite 3 von 14

Control circuit system voltage measurements

Seq. No.	Measuring point	Measuring point 2	Reference value	Measurement value (in V)	Measurement value corresponds to DIN-		
					Yes	No	

Remarks:

Confirmation of proper inspection

Date

Inspector

Signature

Measurement of fault loop impedance

The loop impedance is measured at the furthest point of the electrical circuit. The impedance of the protective conductor must be proven at all other points of the electrical circuit.

$$Z_s(m) \leq \frac{2}{3} \times \frac{U_0}{I_a}$$

measurement errors!

Electrical circuit no.	I _N (in A) and char. of fuse	Measurement value I _k (in A)	Measurement value Z _{Sch} (in Ω) L - PE	Measurement value I _k (in A)	Measurement value Z _I (in Ω)	To be checked? measurement errors!			
						Yes	No		

Remarks:

Confirmation of proper inspection

Date
Inspector
Signature

RCD inspection in a TN system with 1*I_{ΔN} and U₀ of 230 V and no agricultural area

Electrical circuit no.	Type and I _N (in A) of RCD	I _{ΔN} (in mA) of RCD	I _a (in mA) (≤ 50-100% I _{ΔN})	Trigger time of RCD (≤ 400 ms)	Contact voltage (≤ 50 V)	Turn-off condition fulfilled			
							Yes	No	


Turn-off times in TN system according to VDE 0100-410. Other turn-off times apply the TT and IT system!


Nennspannung U ₀ ¹⁾	Zulässige Abschaltzeit t _a			
	Endstromkreise ≤ 32 A ²⁾		Verteilungs- stromkreise ³⁾	
	AC	DC	AC	DC
50 V < U ₀ ≤ 120 V	≤ 0,8 s	Siehe Anmerkung	≤ 5,0 s	
120 V < U ₀ ≤ 230 V	≤ 0,4 s	≤ 5,0 s		
230 V < U ₀ ≤ 400 V	≤ 0,2 s	≤ 0,4 s		
> 400 V	≤ 0,1 s	≤ 0,1 s		



¹⁾ Nennwechselspannung (Effektivwert) oder Nenngleichspannung Außenleiter gegen Erde
²⁾ Für Endstromkreise mit einem Bemessungsstrom (Nennstrom) nicht größer als 32 A
³⁾ Für Verteilerstromkreise
 Anmerkung: Eine Abschaltung kann aus anderen Gründen als dem Schutz gegen elektrischen Schlag verlangt sein.

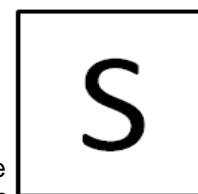
for a selective RCD

these RCDs have no time delay

Type AC  **wechselstromsensitiv**

Type A  **pulsstromsensitiv**

Type B   **allstromsensitiv**



The de
with a re

ms
I* I_{ΔN}

Confir


Date

Inspector

Signature

[illegible]

Type B

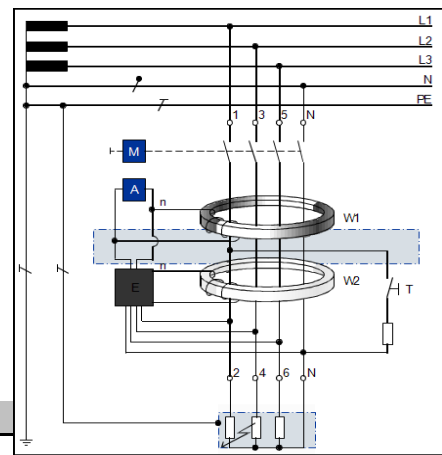


allstromsensitiv

Type B residual current protection devices must only be used where direct residual currents can be anticipated. The crane with frequency inverters is an example of this.

Attention with worksite power distributors, appropriate warning must be given!

Confirmation of proper inspection





Signature

[illegible]


Electrical circuit no.	Name	Clockwise rotating field			
			Yes	No	

I

Protocol No.:	Protocol No.:	 glass made of ideas			
Trial inspection report Annex 3 to inspection protocol					
Electrical installation:		Page 1 of 1			
Building no.:/area:					
Circuit diagram / floor plan					
Mains _____ / _____ V	Electrical system <input checked="" type="checkbox"/> TN-C <input type="checkbox"/> TN-S <input type="checkbox"/> TN-C-S <input type="checkbox"/> TT <input type="checkbox"/> IT				
<div style="background-color: #cccccc; padding: 2px;">Trial</div>					
Seq. No.	Examination	<div style="display: flex; justify-content: space-between;"> <div style="text-align: center;"> in order <table border="1" style="border-collapse: collapse;"> <tr> <td style="padding: 2px;">Yes</td> <td style="padding: 2px;">No</td> <td style="padding: 2px;">N/A</td> </tr> </table> </div> <div style="text-align: center;"> Comments </div> </div>	Yes	No	N/A
Yes	No	N/A			
General					
1	Installation function (function according to circuit diagram)				
2	RCDs function the test button (pressing)				
3	Test protection and safety devices by pressing (protection relays, emergency stop devices, locking mechanisms, end switches, etc.)				
4	Test effects of safety circuits (emergency lighting, ventilation systems, fire protection systems)				
5	Test signalling and display devices for functionality				
Remarks: 					
Confirmation of proper inspection					
_____ Date	_____ Inspector	_____ Signature			

Worksite:	Worksite power distributor inspection protocol	 glass made of ideas																																																																																																																																						
Measurement/inspection protocol <input type="checkbox"/> according to VDE 0100-600 <input type="checkbox"/> BGV A3 / BetrSichV <input type="checkbox"/> VDE 0105-100																																																																																																																																								
Network operator: _____ System voltage: 230 / 400 V Meter no.: _____																																																																																																																																								
Mains system: <input type="checkbox"/> TN <input type="checkbox"/> TT <input type="checkbox"/> IT Inventory no.: _____																																																																																																																																								
Visual check	<input type="checkbox"/> Earthing <input type="checkbox"/> Equipotential bonding <input type="checkbox"/> Label <input type="checkbox"/> No damage to equipment <input type="checkbox"/> Line routing <input type="checkbox"/> Line dim. <input type="checkbox"/> Protection against indirect contact <input type="checkbox"/> Protective conductor <input type="checkbox"/> Documentation																																																																																																																																							
Trial/measurement	<input type="checkbox"/> Signal/display device <input type="checkbox"/> Earthing _____ Ω <input type="checkbox"/> Exam. perm. voltage drop <input type="checkbox"/> Clockwise rotating field <input type="checkbox"/> RCD funct. <input type="checkbox"/> Protection/equipotential bonding																																																																																																																																							
Reason for inspection	<input type="checkbox"/> New installation <input type="checkbox"/> Repair <input type="checkbox"/> Modification/expansion <input type="checkbox"/> Per. inspection																																																																																																																																							
Description: Electrical circuit No.	RCD/ FI Char. Saf.	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="8">RCD / FI</th> <th rowspan="2">Protecti ve conduct or</th> <th colspan="3">Fuse: protection by switch off</th> </tr> <tr> <th></th> <th></th> <th>I_a [mA]</th> <th>t_a 1*I_N [ms]</th> <th>I_a [mA]</th> <th>t_a 1*I_N [ms]</th> <th></th> <th></th> <th></th> <th></th> </tr> </thead> <tbody> <tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> </tbody> </table>	RCD / FI								Protecti ve conduct or	Fuse: protection by switch off					I _a [mA]	t _a 1*I _N [ms]	I _a [mA]	t _a 1*I _N [ms]																																																																																																																				
RCD / FI								Protecti ve conduct or	Fuse: protection by switch off																																																																																																																															
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Introduction:		<p>The client was informed upon handover of the worksite power distributor that the test button on the integrated residual current protection devices (FI, RCD) must be pressed daily.</p> <p>The client was also informed that electrical equipment with frequency inverters may only be operated on the worksite power distributor plugs which are equipped with a residual current protection device (type B RCD) sensitive to universal current. These plugs must be clearly marked with the following sticker - Suitable for equipment with frequency inverters.</p>																																																																																																																																						
Comment:		<div style="display: flex; justify-content: space-between;"> <div> _____ _____ </div> <div> Next inspection date: _____ </div> </div>																																																																																																																																						
Place / Date	Signature of inspector	Signature of client	Meas. device used and type	Calibration date																																																																																																																																				

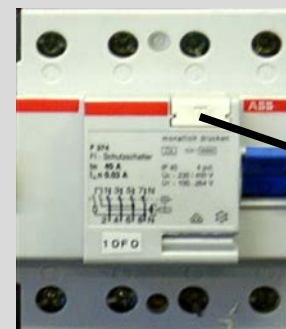
[illegible]

Protocol No.:	<h1>Protocol</h1> <h2>Pressing the RCD test button</h2>	
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Electrical installation: Inspection interval and type of inspection


Residual current, differential current and error voltage
circuit breaker for perfect function by
pressing the test device by the user!


- in stationary installations every 6 months



Test
button

Inspection date	Signature	Inspection date	Signature	Inspection date	Signature

Protocol No.:		<h1>Equip. exchange insp. protocol</h1>			 glass made of ideas	
Date	Protective conductor conductivity				Motor protection element setting OK	Name
	Bench mark	Reference number	Measurement value in Ohm			
				<input type="checkbox"/>		
				<input type="checkbox"/>		
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				<input type="checkbox"/>		

Protocol No.:	Protocol No.:	 glass made of ideas
Defect report Annex 4 to inspection protocol		
Electrical installation:		Page 1 of 2
Building no./area:		
Circuit diagram / floor plan		
Mains _____ / _____ V	Electrical system <input type="checkbox"/> TN-C <input type="checkbox"/> TN-S <input type="checkbox"/> TN-C-S <input type="checkbox"/> TT <input type="checkbox"/> IT	
<div style="background-color: #cccccc; display: inline-block; padding: 2px 5px;">Defect report</div>		
<div style="border: 1px solid black; padding: 5px;"> <div style="background-color: #cccccc; display: inline-block; padding: 2px 5px;">K</div> Code letter to name the defect and recommendations </div> <p>S Safety defects must be remedied prior to completion of inspection immediately (SS) or without delay (SU).</p> <p>M Safety or functional defects, which do not prevent the positive completion of the inspection, but which must be remedied soon.</p> <p>B Defects remedied during the inspection.</p> <p>E Recommendation for protection against electric shock, fire protection or for other protection measures</p> <p>V Options/recommendations to improve convenience. etc.</p> <p>P Information/data in addition to inspection/measurement report</p>		
<div style="background-color: #cccccc; display: inline-block; padding: 2px 5px;">Attention</div>		
<p>The installation operator is responsible for remedying the defects/irregularities found in the _____ initial/periodic inspection which are listed below.</p>		
<u>Remarks:</u>		

[illegible]

Remarks:

Signature

Signature