

3 Details of the device under test and the testing procedure

Record/procedure No:			
Form of testing:	Partial testing	Equipment	<input type="checkbox"/>
		Control	<input type="checkbox"/>
		electrical	<input type="checkbox"/>
Applicant:			
Manufacturer:			
Device under test: Type: Year of manufacture: Serial No/product No:			
Testing performed on (date): At (company):			
Testing performed by: Also present:			

Testing performed against: IEC 60204-1 2016 (Sub-)clause:	Electrical equipment of machines	N/A	YES	NO		DEFICIT
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4 Physical ambient and operating conditions						
4.1 Electromagnetic compatibility (EMC)						
4.4.2 Refer also to IEC 61000-6-1 IEC 61000-6-2 IEC 61000-6-3 IEC 61000-6-4	1. The incorporated electrical devices and components are suitable for EMC environments		O	O		<input type="checkbox"/>
4.4.2	2. The electrical installation and wiring are consistent with the instructions provided by the manufacturer of the equipment		O	O		<input type="checkbox"/>
4.2 Ambient air temperature						
4.4.3	Ambient air temperature at least +5°C to +40°C or as specified by the manufacturer		O	O		<input type="checkbox"/>
4.3 Humidity						
4.4.4	The electrical equipment operates correctly at a relative humidity of 50% and a temperature of +40 °C		O	O		<input type="checkbox"/>
4.4.4	Occasional condensation has no harmful effect		O	O		<input type="checkbox"/>
4.4 Altitude						
4.4.5	Clearance in air and creepage distances designed for use at altitudes of up to 1 000 m		O	O		<input type="checkbox"/>
4.5 Contaminants						
4.4.6	Degree of protection against contact adequate for the ambient conditions		O	O		<input type="checkbox"/>
4.6 Ionizing and non-ionizing radiation						
4.4.7	Additional measures against radiation if necessary	O	O	O		<input type="checkbox"/>
4.7 Vibration, shock and bump						
4.4.8	Additional measures against undesirable effects if necessary	O	O	O		<input type="checkbox"/>
4.8 Transportation and storage						
4.5	Storage temperature -25 °C to +55 °C (+70 °C for short periods)		O	O		<input type="checkbox"/>

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5 Result of testing – testing checklists


5.1 Marking of the control equipment

Markings


16.4	3. Present On the machine rating plate On/in the compartment		<input type="radio"/>	<input type="radio"/>		<input type="checkbox"/>
16.4	4. Marking legible and permanent, with the following information:	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>		<input type="checkbox"/>
16.4	5. Manufacturer/supplier					
16.4	6. Type designation or model					<input type="checkbox"/>
16.4	7. Production No/Serial No.					<input type="checkbox"/>
16.4	8. Rated voltage, number of line conductors, frequency					<input type="checkbox"/>
16.4	9. Full-load current for each incoming supply					<input type="checkbox"/>
16.4 Refer also to IEC 62023	10. Number of the main documentation					<input type="checkbox"/>
16.4	11. Certification mark or other required marking					<input type="checkbox"/>




5.2 Incoming supplies/terminals for the incoming supply

5.1	1. Only one incoming supply for the machine (R) (exceptions are possible)		<input type="radio"/>	<input type="radio"/>		<input type="checkbox"/>
5.1	2. Incoming supply conductor connected directly to the supply disconnecting device (R)	<input type="radio"/>	<input type="radio"/>			
5.1	3. Supply conductor connected to separate supply terminals	<input type="radio"/>	<input type="radio"/>			
5.1	4. Insulated neutral terminal/connecting point, if neutral conductor present	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		<input type="checkbox"/>
5.1	5. Requirements of EN 60364-1 for multiple supplies observed	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		

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5.1 Refer also to IEC 60445	6. Terminals for the incoming supply connection clearly identified (L1, L2, L3, N, PE in accordance with IEC 60445)		O	O		<input type="checkbox"/>
5.2	7. Terminal for the external protective conductor in the same terminal compartment as the associated terminals of each line conductor		O	O		<input type="checkbox"/>
5.2 Refer also to IEC 60445	8. Terminal for the external protective conductor marked "PE"		O	O		<input type="checkbox"/>
5.2 Table1	9. Terminal for PE adequately dimensioned		O	O		<input type="checkbox"/>
6.2.2b	10. Incoming supply conductor terminals and neutral terminal (on the line side of the supply disconnecting device) protected against contact (IP2X)		O	O		<input type="checkbox"/>
6.2.2b	11. Warning sign on terminals 		O	O		<input type="checkbox"/>
5.3 Supply disconnecting device						
5.3.1 5.3.2	1. Supply disconnecting device for each incoming supply, in the form of:		O	O		<input type="checkbox"/>
	- Switch-disconnector (e.g. cam-operated switch) to IEC 60947-3		O			
	- Circuit-breaker to IEC 60947-2		O			
	- Control and protective switching devices suitable for isolation to IEC 60947-6-2		O			
	- Any other switching device compliant with the IEC/EN product standard which meets the requirements for disconnecting devices and possesses a utilization category and/or meets the endurance requirements specified in the standard		O			
	- Plug/socket or appliance coupler for a movable machine	O	O			
5.3.1	2. Disconnection (isolation) of the entire electrical equipment	O	O	O		<input type="checkbox"/>
5.3.3	3. Disconnection of all live (non-earthed) conductors	O	O	O		<input type="checkbox"/>
5.3.3	4. Neutral is also disconnected when the disconnecting device consists of a plug/socket combination	O	O O	O		<input type="checkbox"/>
5.3.1 Circuits not switched off (excepted circuits)						
5.3.5	1. Lighting (for repair and maintenance purposes only)	O	O	O		<input type="checkbox"/>
5.3.5	2. Socket outlets (for repair and maintenance purposes only)	O	O	O		<input type="checkbox"/>
5.3.5	3. Undervoltage protection circuits	O	O	O		<input type="checkbox"/>
5.3.5	4. Circuits required for maintenance of correct operation (measuring devices, program storage devices)	O	O	O		<input type="checkbox"/>

(R) = Recommendation

Testing performed against: IEC 60204-1 2016 (Sub-)clause:	Electrical equipment of machines	N/A	YES	NO		DEFICIT
5.3.5	5. Control circuits for interlocks	O	O	O		<input type="checkbox"/>
6.2.2b	6. Protection against accidental contact (shrouding): ≥ IP2X or IPXXB and warning sign  for excepted circuits	O	O O	O		<input type="checkbox"/>
5.3.5	7. Circuits with their own disconnecting device (R)	O	O	O		<input type="checkbox"/>
5.3.5 (13.2.4)	8. Warning label(s) Separation from other circuits Identification by colour (recommended: orange) in the case of interlock circuits supplied separately	O	O O O	O O		<input type="checkbox"/>
5.3.5	9. Statement in the maintenance manual drawing attention to circuits that are not switched off	O	O	O		<input type="checkbox"/>
5.3.5 16.2.1	10. Warning label on supply disconnecting device	O	O	O		<input type="checkbox"/>
7.2.8	11. Overcurrent protection provided for circuits that are not switched off (excepted circuits)	O	O	O		<input type="checkbox"/>
7.2.8	12. No special overcurrent protective device for the supply conductors Conditional upon: - Current-carrying capacity sufficient for the load, and - Supply conductor not longer than 3 m, and - Conductors protected against external influences by enclosure, or - Conductors protected against external influences by ducts	O	O O O O	O		<input type="checkbox"/>
5.3.2 Supply disconnecting device/switching capacity						
	1. - Manufacturer: - Type: - Rated voltage: V - Rated current: A - Switching capacity (AC 23B): kW (380/400V) - Rating of the largest 3-phase motor: kW - Full-load current of all loads: A - Rating/current of the other loads: kW/A		} See rating plate of the control equipment			
5.3.3	2. Breaking capacity sufficient for the largest motor when stalled (AC 23, IEC 60947-3) and the sum of all currents of the other loads		O	O		<input type="checkbox"/>
5.3.3	The supply disconnecting device is:					
5.3.3	3. Manually operable	O	O	O		<input type="checkbox"/>
5.3.4	- Operating means: red (only with EMERGENCY SWITCHING OFF function)		O			
10.2	- Operating means: black		O			
	- Operating means: grey		O			

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5.3.3	4. Means to permit locking in the OFF position	0	0	0		<input type="checkbox"/>
5.3.3	5. Marked I (On)	0	0	0		<input type="checkbox"/>
5.3.3	6. Marked O (Off)	0	0	0		<input type="checkbox"/>
5.3.3	7. Only for two switch positions (On/Off)	0	0	0		<input type="checkbox"/>
5.3.4	8. Operating means external to the enclosure	0	0	0		<input type="checkbox"/>
5.3.4	9. Operating means easily accessible at a height of between 0.6 m and 1.7 m (max. 1.9 m)		0	0		<input type="checkbox"/>
5.3.4	10. When the external operating means is not intended for emergency operations: <ul style="list-style-type: none"> • Colouring grey or black • Door that can be readily opened and is marked appropriately: <div style="text-align: center;">  <p>Switch-disconnector</p> </div> <p style="text-align: center;">or</p> <div style="text-align: center;">  <p>Circuit-breaker with disconnector properties</p> </div>	0	0	0		<input type="checkbox"/>
	Supply terminals of main switch:	0				
6.2.2b	11. Protected against contact (IP2X or IPXXB)		0	0		<input type="checkbox"/>
6.2.2b	12. Warning sign on terminals 		0	0		<input type="checkbox"/>
5.3.1	13. Where two main switches are present, protective interlocks are present (where the situation is hazardous)	0	0	0		<input type="checkbox"/>

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5.3.3 Supply disconnecting device in the form of an appliance coupler						
5.3.3 13.4.5	Appliance coupler with adequate breaking capacity or additional switching device with adequate breaking capacity	O	O	O		<input type="checkbox"/>
13.4.5	First make/last break earthing contact	O	O	O		
13.4.5	At rated currents of > 16 A or where a hazardous situation is possible: Interlocking device present to prevent unintended or accidental disconnection	O	O	O		
	Adequate breaking capacity; where the rated current is ≥ 30 A, interlocked with an additional switching device such that connection or disconnection is possible only with the switching device in the OFF position	O	O	O		
13.4.5a)	Degree of protection at least IP2X or IPXXB	O	O	O		<input type="checkbox"/>
13.4.5b)	Metallic housings connected to the protective bonding circuit	O	O	O		<input type="checkbox"/>
13.4.5c)	Where disconnection under load is not permitted, an additional switching device is used together with a means to prevent unintended or accidental disconnection	O	O	O		<input type="checkbox"/>
13.4.5d)	Clear identification of the appliance coupler, where appropriate with mechanical coding		O	O		<input type="checkbox"/>
			O	O		
13.4.5e)	Appliance couplers used in control circuits satisfy the requirements of IEC 61984	O	O	O		<input type="checkbox"/>
5.4 Protection against electric shock						
5.4.1 Basic protection						
6.2.2	1. Enclosures Compartment 1 Compartment 2 Compartment 3 Refer to the questions in Section 5.5, "Compartments"		O			
6.2.3	2. The insulation of live parts cannot be removed without being destroyed Affected parts of the installation:	O	O	O		<input type="checkbox"/>
6.2.4	3. Discharge of residual voltages, see Section 5.8, "Further requirements for electrical equipment in the compartment"	O	O	O		<input type="checkbox"/>
6.2.5 6.2.6 Refer also to IEC 60364-4-41	4. Protection by barriers, placing out of reach or obstacles on affected parts of systems:		O			

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5.4.2 Fault protection						
6.3.2.2	1. Protection by the use of class II equipment (with protective insulation) or equivalent insulation - Complete machine - Components/parts of the system:	O	O O O	O		<input type="checkbox"/>
6.3.2.3 Refer also to IEC 60364-4-41	2. Electrical separation of an individual circuit only Affected part of the machine:	O	O	O		<input type="checkbox"/>
6.3.3	3. Automatic disconnection of the supply in the event of an insulation fault - All exposed conductive parts connected to the protective bonding circuit (protective potential equalization of the exposed conductive parts) - Protective equipment for automatic disconnection Fuses Residual current protective devices Relevant requirements of IEC 60364-4-41 for IT systems		O	O		<input type="checkbox"/>
			O	O		
			O	O		
			O			
		O	O			
6.3.3	4. Protective device appropriate for the system type; requirements met	O	O	O		<input type="checkbox"/>
6.3.3	5. Fault protection for the circuits (power drive systems)					

5.4.3 Protection by PELV against direct and indirect contact						
6.4	1. Affected parts of the installation (circuits).....					
	The following requirements of the clause are met	O	O	O		<input type="checkbox"/>
6.4.1.a)	2. Max. rated voltage 25 V AC/60 V DC in dry rooms without large-area contact of live parts with the human body	O	O	O		<input type="checkbox"/>
6.4.1.a)	3. Max. rated voltage 6 V AC/15 V DC in all other cases	O	O	O		<input type="checkbox"/>
6.4.1.b)	4. One side of the circuit is connected to the protective bonding circuit		O	O		<input type="checkbox"/>
6.4.1.c) Refer also to IEC 61558-1 IEC 61558-2-6	5. Electrical separation satisfies that required between the primary and secondary windings of a safety isolating transformer		O	O		<input type="checkbox"/>

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6.4.2	Supply for PELV by:		O	O		<input type="checkbox"/>
	6. Safety isolating transformer in accordance with IEC 61558-1 and IEC 61558-2-6 Marked:  for fail-safe safety isolating transformer Marked:  for non-short-circuit-proof safety isolating transformer Marked:  for short-circuit-proof safety isolating transformer	O	O	O		<input type="checkbox"/>
			O			
			O			
			O			
6.4.2	7. Switch mode power supply with safety transformers to IEC 61558-2-17 marked in the same way as 6	O	O	O		<input type="checkbox"/>
6.4.2	8. Power supply with the same level of safety as a safety isolating transformer (e.g. motor generator with separate windings providing equivalent isolation)	O	O	O		<input type="checkbox"/>
6.4.2	9. Electrochemical source of power (e.g. battery) or other source of power (e.g. diesel-driven generator)	O	O	O		<input type="checkbox"/>
IEC 61558-1; Clause 8	10. Markings on the source of power:		O	O		<input type="checkbox"/>
	11. Labelling on the circuit diagram:		O	O		<input type="checkbox"/>
6.4.1 d)	12. Live parts are reliably separated from the other circuits (e.g. by partitions, insulation for max. voltage, see IEC 60204-1, Sub-clauses 6.3.2.3 and 13.1.3)		O	O		<input type="checkbox"/>
	Where appliance couplers are provided:	O	O	O		<input type="checkbox"/>
6.4.1.e)	13. Plug and socket are compatible only with appliance couplers for PELV circuits		O	O		<input type="checkbox"/>
	14. Where PELV is used for a control circuit: The requirements for control circuits are also met (see 5.9)	O	O	O		<input type="checkbox"/>
			O	O		<input type="checkbox"/>

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		Compartment 1:				Compartment 2:				Compartment 3:			
(Sub-) clause	Requirement			

5.5 Compartments (protection by enclosure)

16.2.1	1. Compartment - Clearly recognizable - Not clearly recognizable Warning sign present Terminals with warning sign  (black on yellow triangle)	0	0	0	<input type="checkbox"/>	0	0	0	<input type="checkbox"/>	0	0	0	<input type="checkbox"/>
11.2.2	2. Compartment contains no equipment (including solenoid valves) other than electrical equipment	0	0	0	<input type="checkbox"/>	0	0	0	<input type="checkbox"/>	0	0	0	<input type="checkbox"/>

5.5.1 Doors/lids

6.2.2a	1. With locking closure		0				0				0		
6.2.2a	2. With screw closure		0				0				0		
6.2.2a	3. Can be opened only by means of a key or tool	0	0	0	<input type="checkbox"/>	0	0	0	<input type="checkbox"/>	0	0	0	<input type="checkbox"/>
6.2.2b	4. Where opening is possible without a key or tool, only following disconnection of the live parts from the system (e.g. supply disconnecting device)	0	0	0	<input type="checkbox"/>	0	0	0	<input type="checkbox"/>	0	0	0	<input type="checkbox"/>
6.2.2c Refer also to IEC 60529	5. Can be opened without a key or tool only when all live parts are reliably shrouded (test finger IP 2X or IP XXB)	0	0	0	<input type="checkbox"/>	0	0	0	<input type="checkbox"/>	0	0	0	<input type="checkbox"/>
11.4	6. Captive fasteners/screws	0	0	0	<input type="checkbox"/>	0	0	0	<input type="checkbox"/>	0	0	0	<input type="checkbox"/>
11.4	7. Width of door/lid < 0.9 m; opening angle at least 95° (R)	0	0	0	<input type="checkbox"/>	0	0	0	<input type="checkbox"/>	0	0	0	<input type="checkbox"/>
11.4	8. Vertical hinges on doors, preferably removable (R)	0	0	0	<input type="checkbox"/>	0	0	0	<input type="checkbox"/>	0	0	0	<input type="checkbox"/>
11.2.1	9. No devices on doors/lids other than devices for operating, indicating, measuring and cooling (fans)	0	0	0	<input type="checkbox"/>	0	0	0	<input type="checkbox"/>	0	0	0	<input type="checkbox"/>

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(Sub-) clause	Requirement	Compartment 1:				Compartment 2:				Compartment 3:							
	
8.2.3	10. On doors and lids on which electrical equipment is mounted: moving protective conductor connections of adequate cross-sectional area, or construction elements with low electrical resistance	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>
11.4	11. Joints and gaskets fitted permanently and securely	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>
5.5.2 Degrees of protection																	
6.2.1 Refer also to IEC 60529	1. Minimum degree of protection IP2X (12 mm); for upper, readily accessible lids IP4X (1 mm) or IPXXD	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>
11.3	2. Ventilated enclosures (e.g. containing only motor starter resistors): Minimum degree of protection IP10	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>
11.3	3. Ventilated enclosures (other equipment) Minimum degree of protection IP32	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>
11.3	4. Enclosures for general use exhibit an appropriate degree of protection (IP32, IP43, IP54)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>
11.3	5. Enclosures cleaned by low-pressure water jets: IP55	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>
11.3	6. Enclosures providing protection against fine dust: IP65	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>
11.4	7. Enclosures containing slip-ring assemblies: IP2X	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>
11.4	8. Penetration of openings by water, dust, oil is prevented, e.g. on - Cable access - Fixing holes - Base apertures (foundation) - Other parts of the machine	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>
4.4.6 4.4.7	9. Suitability where exposed to acids, corrosive gases, salt, radiation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>

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		Compartment 1:				Compartment 2:				Compartment 3:			
(Sub-) clause	Requirement			

5.5.3 Accessibility													
11.2.1	1. Correct mounting height and location of the terminals and device connections (> 0.2 m above servicing level) (R)	O	O	O	<input type="checkbox"/>	O	O	O	<input type="checkbox"/>	O	O	O	<input type="checkbox"/>
11.2.1	2. Correct mounting height for devices requiring maintenance or adjustment (0.4 m–2 m)	O	O	O	<input type="checkbox"/>	O	O	O	<input type="checkbox"/>	O	O	O	<input type="checkbox"/>
11.2.1	3. Ease of access to the switchgear for operation and maintenance from the front	O	O	O	<input type="checkbox"/>	O	O	O	<input type="checkbox"/>	O	O	O	<input type="checkbox"/>
11.2.1	4. Ease of identification of the devices (without moving the wiring) and facility of removal	O	O	O	<input type="checkbox"/>	O	O	O	<input type="checkbox"/>	O	O	O	<input type="checkbox"/>
11.2.1	5. Plug-in devices	O	O	O	<input type="checkbox"/>	O	O	O	<input type="checkbox"/>	O	O	O	<input type="checkbox"/>
11.2.1	6. Plug/socket combinations permit unobstructed access	O	O	O	<input type="checkbox"/>	O	O	O	<input type="checkbox"/>	O	O	O	<input type="checkbox"/>
11.2.1	7. Testing point present	O	O	O	<input type="checkbox"/>	O	O	O	<input type="checkbox"/>	O	O	O	<input type="checkbox"/>
5.5.4 Electric shock protection													
6.2.2	1. Where located in the vicinity of live parts, control elements for adjusting/resetting desired functions satisfy IP2X or IPXXB	O	O	O	<input type="checkbox"/>	O	O	O	<input type="checkbox"/>	O	O	O	<input type="checkbox"/>
6.2.2	- On screw-in fuse links	O	O	O	<input type="checkbox"/>	O	O	O	<input type="checkbox"/>	O	O	O	<input type="checkbox"/>
6.2.2	- On timer elements	O	O	O	<input type="checkbox"/>	O	O	O	<input type="checkbox"/>	O	O	O	<input type="checkbox"/>
6.2.2	- On overcurrent releases	O	O	O	<input type="checkbox"/>	O	O	O	<input type="checkbox"/>	O	O	O	<input type="checkbox"/>
6.2.2	2. Live components on the inside of doors satisfy IP1X or IPXXA (50 mm sphere)	O	O	O	<input type="checkbox"/>	O	O	O	<input type="checkbox"/>	O	O	O	<input type="checkbox"/>

Testing performed against: IEC 60204-1 2016	Electrical equipment of machines	N/A	YES	NO	DEFICIT	N/A	YES	NO	DEFICIT	N/A	YES	NO	DEFICIT
		Compartment 1:				Compartment 2:				Compartment 3:			
(Sub-) clause	Requirement			

5.5.5 Identification

16.5, 16.2.2 Refer also to ISO 13732-1	Electrical equipment and hot surfaces are marked permanently and clearly according to the technical documentation; affected equipment/hot surfaces for which this is not the case:	O	O	O	<input type="checkbox"/>	O	O	O	<input type="checkbox"/>	O	O	O	<input type="checkbox"/>
---	---	---	---	---	--------------------------	---	---	---	--------------------------	---	---	---	--------------------------

5.6 Wiring within the compartments

13.1.1	1. Means of connection present for all conductors	O	O	O	<input type="checkbox"/>	O	O	O	<input type="checkbox"/>	O	O	O	<input type="checkbox"/>
13.1.1	2. Terminals suitable for the type and cross-sectional area of the conductors	O	O	O	<input type="checkbox"/>	O	O	O	<input type="checkbox"/>	O	O	O	<input type="checkbox"/>
13.5.1	3. Conductors laid in suitable ducts	O	O	O	<input type="checkbox"/>	O	O	O	<input type="checkbox"/>	O	O	O	<input type="checkbox"/>
13.5.1	4. Ducts not over-occupied	O	O	O	<input type="checkbox"/>	O	O	O	<input type="checkbox"/>	O	O	O	<input type="checkbox"/>
13.3	5. Conductors not running in ducts are adequately supported	O	O	O	<input type="checkbox"/>	O	O	O	<input type="checkbox"/>	O	O	O	<input type="checkbox"/>
13.3	6. Modification of the wiring possible from the front, or from the rear by access doors or swingout panels (R)	O	O	O	<input type="checkbox"/>	O	O	O	<input type="checkbox"/>	O	O	O	<input type="checkbox"/>
13.3	7. Terminal blocks or plug/socket combinations provided for control wiring extending beyond the enclosure; (cables of power and measuring circuits may be connected directly)	O	O	O	<input type="checkbox"/>	O	O	O	<input type="checkbox"/>	O	O	O	<input type="checkbox"/>
13.1.1 Refers also to IEC 61666	8. Terminals marked clearly according to the plans	O	O	O	<input type="checkbox"/>	O	O	O	<input type="checkbox"/>	O	O	O	<input type="checkbox"/>
13.1.2	9. Cables and conductors of sufficient length for connection and disconnection (applies in particular to protective conductors)	O	O	O	<input type="checkbox"/>	O	O	O	<input type="checkbox"/>	O	O	O	<input type="checkbox"/>

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Testing performed against: IEC 60204-1 2016		Electrical equipment of machines				N/A	YES	NO	DEFICIT	N/A	YES	NO	DEFICIT	N/A	YES	NO	DEFICIT
(Sub-) clause	Requirement	Compartment 1:				Compartment 2:				Compartment 3:							
	
13.1.2	10. Protective conductors placed close to the associated line conductors (R)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>
12.2	11. Minimum cross-sectional areas for wiring within enclosures:	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>
	- Power circuits, connections that are not moved: 0.75 mm ²	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>
	- Control circuits: 0.2 mm ²	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>
13.1.3	- Data communication systems: 0.08 mm ²	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>
	12. Control circuit conductors operating at different voltages laid together (e.g. in a cable duct):	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>
	- All insulated for the highest voltage to which any of the conductors can be subjected, or	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>
	- Separated by suitable barriers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>
13.1.1	13. Soldered connections only on terminals suitable for soldering	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>
Table D.4 Refer also to IEC 60228	14. Solid (single-strand) conductors only for fixed, vibration-free installation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>
13.1.2	15. Cables and conductors adequately supported (no mechanical stresses at the terminations)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>
13.1.2	16. All conductors run from terminal to terminal (without splices or joints)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>
13.1.1	17. Connector sleeves on terminations of stranded conductors	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>
13.1.1	18. Terminals not obscured by wiring	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>
13.4.7	19. Spare conductors connected to spare terminals or isolated	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>

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Testing performed against: IEC 60204-1 2016	Electrical equipment of machines	N/A	YES	NO	DEFICIT	N/A	YES	NO	DEFICIT	N/A	YES	NO	DEFICIT
		Compartment 1:				Compartment 2:				Compartment 3:			
(Sub-) clause	Requirement			

5.3.5 (13.2.4)	20. Circuits that are not disconnected by the supply disconnecting device:	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>
	- Warning label present or		<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>		<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>		<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>
	- Conductors laid separately, or		<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>		<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>		<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>
	- Conductors identified by colour		<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>		<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>		<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>
5.3.5	21. Reference in the maintenance manual to circuits that are not disconnected	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>
13.1.1	22. Fraying of strands prevented on shielded conductors	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>
13.1.5	23. Conductors between pick-up and pick-up converter of an inductive power supply system:	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>
	- As short as possible		<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>		<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>		<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>
	- Adequately protected against mechanical damage		<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>		<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>		<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>

5.6.1 Connections to equipment on doors													
13.3 12.2; 12.6	1. With flexible conductors	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>
13.3 13.5.1	2. Protection against damage (tubing, spiral wrap, etc.)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>
13.3	3. Strain relief on the fixed and movable parts	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>
5.6.2 Identification of conductors													
8.2.2 13.2.2	1. Protective conductor:	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>
	GREEN-YELLOW over the entire length of the conductor, or		<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>		<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>		<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>
	Clearly distinguishable by shape, location or marking		<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>		<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>		<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>
13.2.3	2. Neutral conductor: LIGHT BLUE (R)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>
13.2.4 Refer also to IEC 60757	3. Identification of conductors by colour		<input type="radio"/>				<input type="radio"/>				<input type="radio"/>		

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Testing performed against: IEC 60204-1 2016		Electrical equipment of machines				N/A	YES	NO	DEFICIT	N/A	YES	NO	DEFICIT	N/A	YES	NO	DEFICIT
(Sub-) clause	Requirement	Compartment 1:				Compartment 2:				Compartment 3:							
13.2.4	4. Power circuits: BLACK (R)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>
13.2.4	5. Control circuits (DC): BLUE (R)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>
13.2.4	6. Control circuits (AC): RED (R)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>
13.2.4	7. Exempted circuits to IEC 60204-1, Sub-clause 5.3.5: ORANGE (R)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>
13.2.4	8. No use of GREEN or YELLOW where a possibility of confusion exists with the GREEN-YELLOW bicolour combination	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>
13.2.3	9. Where colour is the sole means of identification, LIGHT BLUE is used solely for neutral conductors	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>
13.2.1 Refer also to IEC 62491	10. Conductors identifiable at each termination in accordance with the technical documentation, for example by: - Colour, - Number, - Alphanumeric	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>

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		Compartment 1:				Compartment 2:				Compartment 3:			
(Sub-) clause	Requirement			

5.7 Protective bonding circuit													
8.2.1 6.3.1	<p>1. All exposed conductive parts and conductive structural parts which may become live in the event of a fault are connected to the protective bonding circuit (for exceptions, see IEC 60204-1, Sub-clause 8.2.1)</p> <p>Separate protective conductor connection for:</p> <ul style="list-style-type: none"> - Cabinet enclosures - Mounting frames (plates) d) - Control panels (e.g. anodize) - Electrical equipment and components - 	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>
			<input type="radio"/>				<input type="radio"/>				<input type="radio"/>		
			<input type="radio"/>				<input type="radio"/>				<input type="radio"/>		
			<input type="radio"/>				<input type="radio"/>				<input type="radio"/>		
8.2.1 8.2.2 5.2, Table 1	<p>2. In their type, cross-sectional areas and connections, the protective conductors satisfy the electrical and mechanical stresses; if not, affected components:</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>Protective bonding connecting points:</p> <ul style="list-style-type: none"> - On protective bonding bar - On individual terminals (e.g. spring-loaded terminals) 	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>
			<input type="radio"/>				<input type="radio"/>				<input type="radio"/>		
			<input type="radio"/>				<input type="radio"/>				<input type="radio"/>		
13.1.1	3. Only one protective conductor connection per terminal connecting point	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>
13.1.1	4. Protective conductor connections secured against accidental loosening	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>


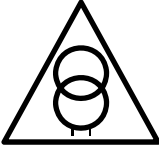
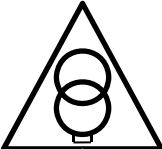
Testing performed against: IEC 60204-1 2016		Electrical equipment of machines				N/A	YES	NO	DEFICIT	N/A	YES	NO	DEFICIT	N/A	YES	NO	DEFICIT
(Sub-) clause	Requirement	Compartment 1:				Compartment 2:				Compartment 3:							
	
8.2.4	5. Protective conductor connecting points marked with:  - Symbol to EN-60417-5019 - Letters PE - GREEN-YELLOW bicolour combination		<input type="radio"/>	<input type="radio"/>			<input type="radio"/>				<input type="radio"/>			<input type="radio"/>			
8.2.3	6. Current-carrying capacity of connection and bonding points of the protective bonding circuit not impaired by mechanical, chemical or electrochemical influences	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>
8.2.6	7. Protective conductor connecting points not used for additional fixing purposes (such as supporting rails)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>
8.2.3	8. Flexible or rigid cable ducts and metal cable sheathing are not used as protective conductors; they are however connected to the protective bonding circuit	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>
8.2.3 13.4.5	9. Where plug/socket combinations are employed, the protective bonding circuit is interrupted by a first make last break contact	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>
8.2.3	10. The protective bonding circuit contains neither switchgear nor overcurrent protective devices	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>
5.2	11. The protective conductor is among the conductors supplying the equipment (line conductors and protective conductor share common sheathing)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>

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(Sub-) clause	Requirement	Compartment 1:				Compartment 2:				Compartment 3:							
	
8.2.3	12. When a part is removed (for example during routine maintenance), the protective bonding circuit is not interrupted for the remaining parts	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>
8.2.6	13. Where electrical equipment has an earth leakage current of > 10 mA in the incoming supply, one or more of the following conditions are met:	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>
	- Protective conductor laid completely within the enclosures or otherwise protected against mechanical damage	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
	- Cross-sectional area of the protective conductor at least 10 mm ² Cu or 16 mm ² Al	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
	- Where the cross-sectional area is lower than these values, provision of a second protective conductor	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
	- Automatic disconnection of the supply should continuity of the protective conductor be lost	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
	- On plug/socket combinations: industrial connector to IEC 60309, minimum cross-sectional area of the protective conductor 2.5 mm ²	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
	- Statement in the instructions for installation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
	- Warning label	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
8.3	14. Electrical equipment with a high leakage current is connected to a dedicated supply transformer with separate windings (R)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>

Testing performed against: IEC 60204-1 2016 (Sub-)clause:	Electrical equipment of machines	N/A	YES	NO		DEFICIT
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5.8 Further requirements for electrical equipment in the compartment						
4.2.1	1. Electrical components and devices: - Are suitable for their intended use - Conform to the IEC standards applicable to them - Are used in accordance with the manufacturer's instructions	0	0	0		<input type="checkbox"/>
4.2.2	2. The parts of the electrical equipment were selected in accordance with IEC 61439 (governing low-voltage switchgear combinations)	0	0	0		<input type="checkbox"/>
4.3.1	3. The electrical equipment of the machine is designed to operate correctly with the conditions of the supply (as specified)	0	0	0		<input type="checkbox"/>
11.2.3 Refer also to IEC/TR 60890	4. Influence of heat-generating equipment upon the components is avoided	0	0	0		<input type="checkbox"/>
4.4.1	5. Equipment possesses adequate mechanical strength and is fitted securely; adjustment devices are protected where necessary against vibration	0	0	0		<input type="checkbox"/>
6	6. Suitable protective measures for all circuits which are galvanically isolated from the system (transformers) (see Section 4.4, Protection against electric shock)	0	0	0		<input type="checkbox"/>
5.1	7. No connection between the protective and neutral conductors exists within the electrical equipment (on the load side of the mains input terminals)	0	0	0		<input type="checkbox"/>
6.2.4	8. Residual voltages on live parts (such as capacitors, power converter terminals) are discharged down to 60 V or less within 5 s of disconnection (if not: warning sign) Where the pins of plugs are accessible to the touch, the max. discharge time is 1 s, or basic protection is provided (IP 2X or IP XXB/IP 4X or IP XXD in the case of equipment located where it is accessible to all persons)	0	0	0		<input type="checkbox"/>
6.3.2.2	9. Accessible parts, such as manually actuated control elements, are designed for protection against the incidence of touch voltages in the form of:	0	0	0		<input type="checkbox"/>
	- Class II devices or apparatus, or	0	0	0		<input type="checkbox"/>
	- Switchgear and controlgear assemblies having total insulation, in combination with supplementary or reinforced insulation	0	0	0		<input type="checkbox"/>
13.1.3	10. Conductors carrying different voltages located within the same cable duct are either:	0	0	0		<input type="checkbox"/>
	- Separated by suitable barriers, or	0	0	0		<input type="checkbox"/>
	- Insulated for the highest voltage that may occur	0	0	0		<input type="checkbox"/>
5.1	11. Other supply voltages for certain parts of the equipment (for example for electronic equipment) are generated by equipment (such as transformers) forming part of the electrical equipment of the machine (R)	0	0	0		<input type="checkbox"/>

Testing performed against: IEC 60204-1 2016 (Sub-)clause:	Electrical equipment of machines	N/A	YES	NO		DEFICIT
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5.9 Control circuits						
5.9.1 With transformer 1						
16.5	1. Designation in accordance with the circuit diagram Reference designations: - Manufacturer: Type:.....					
9.1.1/16.5	2. Control transformer to IEC 61558-2-2	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		<input type="checkbox"/>
	- Fail-safe control transformer 	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		<input type="checkbox"/>
	- Non-short-circuit-proof control transformer 	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		<input type="checkbox"/>
	- Short-circuit-proof control transformer 	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		<input type="checkbox"/>
	3. Safety isolating transformer to IEC 61558-2-6 Model:	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		<input type="checkbox"/>
9.1.1	4. Switch mode power supply to IEC 61558-2-16 and transformer with separate windings Model:.....	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		<input type="checkbox"/>
	- Primary voltage rating: V					
	- Secondary voltage rating: V					
	- Rated current: A					
	- Rated output: VA					
	Primary-side connection:					
	- Between two line conductors		<input type="radio"/>			
	- Between one line conductor and neutral		<input type="radio"/>			
	-		<input type="radio"/>			
9.1.1	5. Transformer has separate windings	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		<input type="checkbox"/>
5.3.1	6. Transformer is connected on the load side of the supply disconnecting device	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		<input type="checkbox"/>

Testing performed against: IEC 60204-1 2016 (Sub-)clause:	Electrical equipment of machines	N/A	YES	NO		DEFICIT
	4. Safety isolating transformer to IEC 61558-2-6 Model:.....	0	0	0		<input type="checkbox"/>
9.1.1	5. Switch mode power supply to IEC 61558-2-16 Model:..... - Primary voltage rating:V - Secondary voltage rating:V - Rated current:A - Rated output:VA Primary-side connection: - Between two line conductors - Between one line conductor and neutral	0	0	0		<input type="checkbox"/>
9.1.1	6. Transformer has separate windings	0	0	0		<input type="checkbox"/>
5.3.1	7. Transformer is connected on the load side of the supply disconnecting device	0	0	0		<input type="checkbox"/>
9.1.2	8. Secondary voltage does not exceed 277 V (60 Hz) 9. Secondary voltage does not exceed 230 V (50 Hz)	0	0	0		<input type="checkbox"/>
9.4.3.1	- Control circuit according to method a) or c)	Transformer 2				
9.4.3.1	10. Earthed on the control transformer (also applicable to ELV and DC) (separable green/yellow connection to the protective bonding circuit)	0	0	0		<input type="checkbox"/>
17.6	11. Connection to the protective bonding circuit shown on the circuit diagram	0	0	0		<input type="checkbox"/>
	12. One side of the operating coils directly on the earthed conductor, switching contacts only on the non-earthed side	0	0	0		<input type="checkbox"/>
	13. Other method, e.g. non-earthed with insulation monitoring	0	0	0		<input type="checkbox"/>
9.1.3 7.2.4 7.2.10	17. Overcurrent/short-circuit protection provided On the secondary side 1 x A, Marking according to circuit diagram..... On the primary side..... x A, Marking according to circuit diagram.....	0	0	0		<input type="checkbox"/>
7.2.10	14. Short-circuit protection of the contacts in the control circuit assured	0	0	0		<input type="checkbox"/>
7.2.9	15. Overcurrent protection provided by electronic equipment with current limiting	0	0	0		<input type="checkbox"/>

Testing performed against: IEC 60204-1 2016 (Sub-)clause:	Electrical equipment of machines	N/A	YES	NO		DEFICIT
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5.9.3 Non-earthed control circuits (method b)						
9.4.3.1.3	1. 2-pole control switches operating on both conductors	O	O	O		<input type="checkbox"/>
	2. Equipment present for automatic disconnection in the event of an insulation fault	O	O	O		<input type="checkbox"/>
5.9.4 Transformer with earthed centre-tap winding (method c)						
9.4.3.1.4	1. 2-pole control switches operating on both conductors	O	O	O		<input type="checkbox"/>
9.4.3.1.4	2. Centre tap connected to protective bonding circuit	O	O	O		<input type="checkbox"/>
9.4.3.1.4	3. Both conductors are interrupted by the overcurrent protective device	O	O	O		<input type="checkbox"/>

5.9.5 Without Transformer (method d)						
9.1.1	1. Single motor starter, maximum of 2 control devices	O	O	O		<input type="checkbox"/>
9.1.3 7.2.4 7.2.10	2. Overcurrent/short-circuit protection provided and protection of the contacts assured 1 x A, (1 line conductor) Marking according to circuit diagram 2 x A, (2 line conductor) Marking according to circuit diagram	O	O	O		<input type="checkbox"/>
9.4.3.1.5	3. Two-pole control switch where connection is between two line conductors or between a line conductor and neutral, when phase reversal (e.g. with Schuko-type plug) is possible (for start and stop function and possible hazard)	O	O	O		<input type="checkbox"/>
9.4.3.1.5	4. Where connection is made to a non-earthed supply system or IT system, a device must be provided that automatically interrupts the circuit in the event of an earth fault.	O	O	O		<input type="checkbox"/>

5.9.6 DC control circuits						
9.1.1	1. Where DC control circuits are connected to the protective bonding circuit, they are supplied from a separate winding of the AC control circuit transformer (or a separate transformer for DC supply)	O	O	O		<input type="checkbox"/>

5.9.7 Access to switchgear						
11.5	1. Doors in gangways for access to electrical operating areas; - At least 0.7 m wide and 2 m high - Opening outwards - Can be opened from inside without keys or tools (e.g. by panic bolts)	O	O	O		<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>

Testing performed against: IEC 60204-1 2016 (Sub-)clause:	Electrical equipment of machines	N/A	YES	NO		DEFICIT
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5.10 Control functions / electronic equipment						
5.10.1 Control equipment						
9.1.1	1. Supply for electronic equipment (e.g. PLCs) - By means of a control transformer with separate windings in accordance with IEC 61558-2-2 - Or by a combination of a switch mode power supply unit in accordance with IEC 61558-2-16 and a transformer with separate windings, or - By a combination of a power supply unit in accordance with IEC 61204-7 and a transformer with separate windings	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		<input type="checkbox"/>
7.5	2. Interruption and subsequent restoration of the voltage does not cause a hazardous situation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		<input type="checkbox"/>
9.4.3.2	3. Memory is not lost when this would lead to a hazardous situation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		<input type="checkbox"/>
5.11 Stop function, Actions in an emergency						
5.11.1 Stop function						
9.2.2	1. The machine is equipped with a stop function: - Stop category 0 (immediate removal of power to the machine actuators; voltage may still be present provided it is not able to give rise to movement) - Stop category 1 (controlled stop; following stopping, stop category 0) - Stop category 2 (controlled stop; power remains available to the machine actuators)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		<input type="checkbox"/>
9.2.3.3	2. Stop function overrides start function	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		<input type="checkbox"/>
	3. Stop function category 0 and 1 independent of the operating mode	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		<input type="checkbox"/>
	4. Stop category 1 (controlled stop) for the following drives:	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		<input type="checkbox"/>
	5. Stop category 2 (controlled stop followed by position control) for the following drives:	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		<input type="checkbox"/>

Testing performed against: IEC 60204-1 2016 (Sub-)clause:	Electrical equipment of machines	N/A	YES	NO		DEFICIT
9.2.3.3	6. Stop categories satisfy the risk assessment and functional requirements	0	0	0		<input type="checkbox"/>
9.2.3.3	7. Stop command effective from any control station where required by the risk assessment	0	0	0		<input type="checkbox"/>
9.2.3.4.1 9.2.3.4.2 ISO 13849-1, 5.2.2	8. Manual reset of the stop function does not restart the machinery, but merely permits restarting	0	0	0		<input type="checkbox"/>
5.11.2 Measures in an emergency						
9.2.3.4.2 Annex E	1. EMERGENCY STOP present (where hazards are presented by machine movements) Protection assured against direct contact, emergency switching off not required	0	0	0		<input type="checkbox"/>
9.2.3.4.3 Annx E	2. EMERGENCY SWITCHING OFF present (where hazards are presented by electrical energy) Use of emergency stop in order to halt movements presenting a hazard is not necessary	0	0	0		<input type="checkbox"/>
10.8.1	3. EMERGENCY STOP and EMERGENCY SWITCHING OFF present Confusion prevented by the following means (e.g. device in a break-glass enclosure):	0	0	0		<input type="checkbox"/>
10.8.1	3. EMERGENCY STOP and EMERGENCY SWITCHING OFF present Confusion prevented by the following means (e.g. device in a break-glass enclosure):	0	0	0		<input type="checkbox"/>
5.11.3 Equipment for EMERGENCY STOP and EMERGENCY SWITCHING OFF						
9.2.3.4.2	1. EMERGENCY STOP in the form of stop category 0 or 1 in accordance with the risk analysis	0	0	0		<input type="checkbox"/>
10.7.1	2. At all hazard locations (workplace, control station) Hazard location 1: Stop category: Hazard location 2: Stop category: Hazard location 3: Stop category: Hazard location 4: Stop category:	0	0	0		<input type="checkbox"/>
10.7.1	3. Devices for EMERGENCY STOP/EMERGENCY SWITCHING OFF readily accessible	0	0	0		<input type="checkbox"/>
ISO 13850, 4.3.3	4. With mechanical latching	0	0	0		<input type="checkbox"/>
10.7.3 10.8.3	5. Emergency switching off = supply disconnecting device (not with stop categories 1 and 2)		0	0		<input type="checkbox"/>
10.2.1	6. Red actuator on yellow background	0	0	0		<input type="checkbox"/>
10.8.2	7. Red push-button operated switch for actuation with the palm or fist, on yellow background	0	0	0		<input type="checkbox"/>
10.7.2 Refer also IEC 60947-5-5	8. Pedal-operated switch without a mechanical guard (for emergency stop only)	0	0	0		<input type="checkbox"/>

(R) = Recommendation

Testing performed against: IEC 60204-1 2016 (Sub-)clause:	Electrical equipment of machines	N/A	YES	NO		DEFICIT
10.7.2 10.8.2	9. Pull-cord operated switch (secure against breakage, disengagement, etc.)	0	0	0		<input type="checkbox"/>
9.2.3.4.1	10.Reenergizing possible only following manual resetting of all actuated control elements	0	0	0		<input type="checkbox"/>
9.2.3.4.1	11.Resetting does not cause starting	0	0	0		<input type="checkbox"/>
9.2.3.4.2	12.EMERGENCY STOP overrides all other operating modes	0	0	0		<input type="checkbox"/>
10.7.2	13.Contact members have positive opening operation (IEC 60947-5-5) - manufacturer: - current (AC15-DC13) A at V - Max. permissible overcurrent protection according to the manufacturer A - Level of overcurrent protection present A	0	0	0		<input type="checkbox"/>
7.2.9	14.Overcurrent protection of the contacts is assured	0	0	0		<input type="checkbox"/>
	15.No operational disconnection by means of EMERGENCY STOP/EMERGENCY SWITCHING OFF	0	0	0		<input type="checkbox"/>
	16.EMERGENCY SWITCHING OFF / EMERGENCY STOP contacts act upon:	0	0	0		<input type="checkbox"/>
9.2.3.4.3	17.Only electromechanical switching devices employed for EMERGENCY SWITCHING OFF	0	0	0		<input type="checkbox"/>
10.7.1 DIN EN ISO 13850, 4.3.8	18.Confusion of active and inactive EMERGENCY STOP devices in mobile operator control stations reduced to a minimum by the following means (e.g. instruction for users):	0	0	0		<input type="checkbox"/>
5.12 Control functions						
5.12.1 Devices for removal of power for prevention of unexpected start-up						
5.4	1. Present	0	0	0		<input type="checkbox"/>
5.4 Refer also ISO 14118	2. Device with disconnecter function (for disassembly of the machine, work on the electrical installation, adjustment and maintenance work) In the form of:	0	0	0		<input type="checkbox"/>
5.4	3. Supply disconnecting device (5.3.2)		0			
5.4	4. Switch-disconnector		0			
5.4	5. Withdrawable fuse links/withdrawable links in locked electrical operating areas		0			

Testing performed against: IEC 60204-1 2016 (Sub-)clause:	Electrical equipment of machines	N/A	YES	NO		DEFICIT
5.4	6. Devices that do not satisfy the disconnecter function (only for brief inspections, adjustments, limited work on the electrical equipment and without electric shock hazard) In the form of: 	0	0	0		<input type="checkbox"/>
	7. Switch, lockable		0			
	8. Contactor, de-energized via the control circuit		0			
	9.		0			
5.12.2 Operation – interlocks – monitoring – start						
7.5	1. Interruption and subsequent restoration of power does not lead to a hazardous situation	0	0	0		<input type="checkbox"/>
7.6 (9.3.2)	2. Overspeed protection with restart lockout present (if necessary)	0	0	0		<input type="checkbox"/>
7.8	3. When the phase sequence of the supply voltage is incorrect: - A hazardous situation is not possible - Damage to the machine is not possible - Protective measure:	0	0 0 0	0 0		<input type="checkbox"/>
9.3.3	4. Operation of auxiliary functions is monitored	0	0	0		<input type="checkbox"/>
9.3.5	5. No disconnection as a function of time during reverse current braking (risk of reversed direction of rotation)	0	0	0		<input type="checkbox"/>
9.3.5	6. No start-up when the motor shaft is rotated	0	0	0		<input type="checkbox"/>
9.3.4	7. Interlock against contrary motion	0	0	0		<input type="checkbox"/>
9.2.3.1	8. Safety functions/protective measures (interlocks) required for safe operation are present	0	0	0		<input type="checkbox"/>
9.2.3.1	9. Measures have been taken to prevent commands initiated from different control stations from giving rise to a hazard	0	0	0		<input type="checkbox"/>
9.2.3.2	10. Startfunktion wird durch relevanten Stromkreis ausgelöst	0	0	0		<input type="checkbox"/>
9.2.3.2	11. The start of an operation is possible only when the conditions for machine operation (e.g. guarding) are met	0	0	0		<input type="checkbox"/>
9.2.3.2	12. Where more than one control station is required for initiation of starting:	0	0	0		<input type="checkbox"/>
	- Each control station has its own separate manual start control device	0	0	0		<input type="checkbox"/>
	- All start control devices are in the rest position (OFF)	0	0	0		<input type="checkbox"/>
	- The required conditions for starting are met prior to the start	0	0	0		<input type="checkbox"/>
	- Simultaneous actuation (where applicable, selectively by means of selector switches)	0	0	0		<input type="checkbox"/>

Testing performed against: IEC 60204-1 2016 (Sub-)clause:	Electrical equipment of machines	N/A	YES	NO		DEFICIT
9.2.3.10	13. Combined start-stop devices are used only for functions which do not give rise to a hazardous situation	0	0	0		<input type="checkbox"/>
9.3.1	14. Resetting of safeguards (by dropping into the closed position) does not initiate a hazardous start (for guards with start function, see Sub-clause 6.3.3.2.5 of ISO 12100:2010)	0	0	0		<input type="checkbox"/>
	15. Start commands which give rise to a hazardous situation and are not executed immediately are not stored	0	0	0		<input type="checkbox"/>
9.2.3.6	16. Where machine components execute hazardous movements, monitoring is provided for example by overtravel limiters, motor overspeed detection, mechanical overload detection, anti-collision devices	0	0	0		<input type="checkbox"/>
9.2.3.6	17. Hazardous movements can be observed from control stations	0	0	0		<input type="checkbox"/>
9.2.3.6	18. The operator assumes the task of monitoring in the case of manually guided machines	0	0	0		<input type="checkbox"/>
5.12.3 Two-hand control						
9.2.3.8	1. Present		0	0		
9.2.3.8 ISO 13851	2. Type 1: - Continuous concurrent actuation - When either of the control devices is released: STOP Safety performance level: well-ried components	0	0	0		<input type="checkbox"/>
9.2.3.8 ISO 13851	3. Type 2: In addition to Type 1: - Both control devices must be released before machine operation can be reinitiated Safety performance level: single-fault tolerance	0	0	0		<input type="checkbox"/>
9.2.3.8 ISO 13851	4. Type 3: In addition to Type 1 and Type 2: - Synchronous actuation (0.5 s) Safety performance level: A = category 1 (well-ried components) 0 B = category 3 (single-fault tolerance) 0 C = category 4 (self-monitoring) 0	0	0	0		<input type="checkbox"/>
9.2.3.8	5. Selection of the two-hand control satisfies the risk assessment (refer also to: ISO 13851, "Two-hand control devices")	0	0	0		<input type="checkbox"/>

Testing performed against: IEC 60204-1 2016 (Sub-)clause:	Electrical equipment of machines	N/A	YES	NO		DEFICIT
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5.12.4 Enabling function						
9.2.3.9	1. Present		0	0		
9.2.3.9	2. The enabling control is a manually activated control function interlock which:	0	0	0		<input type="checkbox"/>
9.2.3.9	- When activated allows a machine operation to be initiated by a separate start control	0	0	0		<input type="checkbox"/>
9.2.3.9	- When de-activated initiates a stop function and prevents initiation of machine operation	0	0	0		<input type="checkbox"/>
9.2.3.9	3. The enabling control must be de-activated before operation of the machine can be reinitiated	0	0	0		<input type="checkbox"/>
10.9	4. The enabling control device cannot be defeated by simple means	0	0	0		<input type="checkbox"/>
10.9	5. Enabling control devices have the following features:		0	0		
10.9	6. They are designed in accordance with ergonomic principles	0	0	0		<input type="checkbox"/>
10.9	7. Type with 2 switch positions: - Position 1: OFF function (actuator not operated) - Position 2: Enabling function (actuator operated)	0	0	0		<input type="checkbox"/>
10.9 Siehe auch DIN EN 60947-5-8	8. Type with 3 switch positions: - Position 1: OFF function (actuator not operated) - Position 2: Enabling function (actuator is operated in its mid position) - Position 3: OFF function (actuator is operated past its mid position) - No activation of the enabling function when the switch is returned from position 3 to position 2	0	0	0		<input type="checkbox"/>

Testing performed against: IEC 60204-1 2016 (Sub-)clause:	Electrical equipment of machines	N/A	YES	NO		DEFICIT
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5.12.5 Cableless control system (CCS)						
9.2.4.1	1. A risk assessment shows the CCS to possess suitable functionality and response time	O	O	O		<input type="checkbox"/>
9.2.4.1	2. Data transmission reliability requirements for safety functions are met	O	O	O		<input type="checkbox"/>
9.2.4.5	3. Unauthorized use of the operator control station is prevented by the following measures:	O	O	O		<input type="checkbox"/>
9.2.4.5	4. Unambiguous indication of which machine is controlled by the operator control station	O	O	O		<input type="checkbox"/>
9.2.4.3	5. Measures are in place to ensure that control commands only - Act upon the relevant machine - Act upon the intended machine function Measure:	O O	O O	O O		<input type="checkbox"/> <input type="checkbox"/>
9.2.4.7 Refer also ISO 13850	Emergency stop devices on CCSs are not the sole measure for initiating an emergency stop function Confusion between active and inactive emergency stop devices is avoided		O O	O O		<input type="checkbox"/> <input type="checkbox"/>
9.2.4.2	6. The ability of a CCS to control the machine is monitored automatically at suitable intervals		O	O		<input type="checkbox"/>
9.2.4.2	7. Should the communication signal be degraded (e.g. by a reduced signal level, reduced battery power), a warning is provided to the operator		O	O		<input type="checkbox"/>
9.2.4.2 9.2.4.6	8. Should a CCS be deactivated or its ability to control the machine lost, an automatic stop of the machine is initiated		O	O		<input type="checkbox"/>
9.2.4.2	9. Restoration of the ability of a CCS to control the machine does not result in restarting of the machine		O	O		<input type="checkbox"/>
	10. Signals relevant to safety and processing of control signals satisfy the risk assessment		O	O		<input type="checkbox"/>
9.2.4.4	11. Where multiple cableless operator control stations are used: - Measures are in place to ensure that only one cableless operator control station is enabled at any one time - Transfer of control between operator control stations requires deliberate manual action on the operator control station - Transfer of control during operation is possible only if the mode of machine operation is identical on both operator control stations - Transfer of control cannot result in a change in the mode of machine operation - Indication provided of which operator control station is controlling which machine - Indication at suitable locations (risk assessment) - Stop command effective from each operator control station where shown to be necessary by the risk assessment		O O O O O O O	O O O O O O O		<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>

(R) = Recommendation

Testing performed against: IEC 60204-1 2016 (Sub-)clause:	Electrical equipment of machines	N/A	YES	NO		DEFICIT
9.2.4.2	12.A change in battery voltage does not give rise to a hazardous situation Where battery-powered operator control stations may give rise to hazardous movements: warning in the event of a change in battery voltage (specified limits) Sufficient time available for the machine to be placed in a non-hazardous state		0 0 0	0 0 0		<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
9.2.4.5	13.Selecting a CCS on the machine does not initiate a control command		0	0		<input type="checkbox"/>
9.2.4.8	14.Restarting the CCS does not reset the emergency-stop condition		0	0		<input type="checkbox"/>
9.2.4.8	15.The emergency-stop condition cannot be reset until a hazard is no longer present		0	0		<input type="checkbox"/>
9.2.4.8	16.Fixed reset devices present? (depending upon risk assessment)	0	0	0		<input type="checkbox"/>
5.12.6 Operating modes						
9.2.3.5	1. Several operating modes present	0	0			
9.2.3.5	2. Operating mode (in hazardous situations) can be changed by: Selector switch:- Lockable cam switch - Key operated switch, lockable in all positions - Access code -	0	0 0 0 0	0		<input type="checkbox"/>
9.2.3.5	3. Selected operating mode clearly identifiable	0	0	0		<input type="checkbox"/>
9.2.3.5	4. Operating mode selector switch does not initiate machine operation; separate action required	0	0	0		<input type="checkbox"/>
9.2.3.5	5. Relevant safety functions/protective measures are active in all operating modes	0	0	0		<input type="checkbox"/>

Testing performed against: IEC 60204-1 2016 (Sub-)clause:	Electrical equipment of machines	N/A	YES	NO		DEFICIT
9.3.6	<p>6. Where the safety functions/protective measures must be suspended, the control or operating mode selector simultaneously:</p> <ul style="list-style-type: none"> • Disables all other operating modes <p>Permits operation only by means of an enabling device</p> <ul style="list-style-type: none"> - Hold-to-run mode (dead-man's circuit) O - Enabling circuit O - Two-hand control O - Portable control unit with emergency switching off O - Cableless control station O <ul style="list-style-type: none"> • Permits operation of hazardous elements only under reduced risk conditions <ul style="list-style-type: none"> - Reduced speed O V = mm/s Type of speed reduction - Reduced energy O - Limitation of the range of movement O <p>Any operation of hazardous functions by voluntary or involuntary action on the machine's sensors is prevented</p> <p>-</p>	O	O O O	O		□
4.1 Refer also ISO 13849-1	<p>Design of the operating mode selector, form of speed reduction, disabling of the guard (6)</p> <ul style="list-style-type: none"> - Satisfy the risk assessment 	O	O	O		□
	<p>Satisfy the requirements for this type of machine (Type C standard („.....“))</p>	O	O	O		□

Testing performed against: IEC 60204-1 2016 (Sub-)clause:	Electrical equipment of machines	N/A	YES	NO		DEFICIT
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5.12.7 Control function in the event of a fault						
9.4.1	1. The performance of the control system as determined satisfies the following Performance Level in accordance with ISO 13849-1 (Table 2)/SIL in accordance with IEC 62061: PL/SIL for (part of the safety function) PL/SIL for (part of the safety function) PL/SIL for (part of the safety function) PL/SIL for (part of the safety function)	O	O	O		<input type="checkbox"/>
9.4.1	2. Determining of the required performance of the control system by means of: - Specified Type C standard Titel..... - Risk assessment to ISO 13849-1 - Risk assessment to IEC 62061 -	O	O O O O O	O		<input type="checkbox"/>
	3. The determined Performance Level (1) satisfies the above requirements (2)	O	O	O		<input type="checkbox"/>
9.4.1	4. Memory is retained by batteries - If so: does removal or failure of the batteries result in a safe state?	O	O	O		<input type="checkbox"/>
9.4.1	5. Memory alteration possible only by authorized persons Protection afforded by: Key Access code Tool	O	O O O	O		<input type="checkbox"/>

Testing performed against: IEC 60204-1 2016 (Sub-)clause:	Electrical equipment of machines	N/A	YES	NO		DEFICIT
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5.12.8 Measures for risk reduction in the event of a fault						
9.4.2.2	1. The measure of proven circuit techniques and components includes - Earthed control circuit - Connection of the control devices in accordance with IEC 60204-1, Sub-clause 9.4.3.1.1 - Stopping by de-energizing - Disconnection of all live conductors in the control circuit - Use of switching devices with direct opening action - Circuit design to reduce the possibility of faults causing undesirable operations - Monitoring by: - Use of mechanically linked contacts (IEC 60947-5-1) - Use of mirror contacts (IEC 60947-4-1)	O	O O O O O O O	O		<input type="checkbox"/>
9.4.2.3	2. Redundancy	O	O	O		<input type="checkbox"/>
9.4.2.4	3. Diversity - Use of a combination of normally open and normally closed contacts - Use of control devices of different types in the control circuit - Combination of electromechanical and electronic circuits in redundant configurations - Combination of electrical and non-electrical systems (for example mechanical, hydraulic, pneumatic)	O	O O O O	O		<input type="checkbox"/>
9.4.2.5	4. Functional test - Performed automatically by the control system, at intervals of: - Performed manually during inspections or start-up testing, at intervals of:	O	O O O	O		<input type="checkbox"/>
	5. Behaviour in the event of a fault is appropriate in consideration of the risk	O	O	O		<input type="checkbox"/>
5.13 Control and signalling devices						
10.1.2	1. Within easy reach (at a height of ≥ 0.6 m)	O	O	O		<input type="checkbox"/>
10.1.2	2. Can be operated safely	O	O	O		<input type="checkbox"/>
10.1.1 10.6	3. The danger of inadvertent actuation is low, particularly for start functions	O	O	O		<input type="checkbox"/>
10.1.3 Refer also to IEC 60529	4. Protected against external influences (aggressive liquids, vapours, gases; swarf, particulate matter, foreign objects), e.g. IP 54/IP 55; protection against contact with live parts: IP XXD	O	O	O		<input type="checkbox"/>
10.1.2	5. Foot-operated control devices can be operated in the normal working position	O	O	O		<input type="checkbox"/>

Testing performed against: IEC 60204-1 2016 (Sub-)clause:	Electrical equipment of machines	N/A	YES	NO		DEFICIT
10.1.1	6. Ergonomic principles have been observed for the location of installation	0	0	0		<input type="checkbox"/>
5.13.1 Actuator						
10.2.1	1. Red actuator only for EMERGENCY SWITCHING OFF	0	0	0		<input type="checkbox"/>
10.2.2	2. Clearly marked (e.g. I or 0) (R)	0	0	0		<input type="checkbox"/>
16.3 Refer also to IEC 60417 and ISO 7000	3. With functional identification (text or pictogram)	0	0	0		<input type="checkbox"/>
5.13.2 Colour coding of actuators						
10.2.1	1. Stop/Off: BLACK, GREY, WHITE, RED (R) <u>Not GREEN</u>	0	0	0		<input type="checkbox"/>
10.2.1	2. Start/On: WHITE, GREY, BLACK, GREEN (R) <u>Not RED</u>	0	0	0		<input type="checkbox"/>
10.2.1	3. Hold-to-run mode: WHITE, GREY, BLACK (R) <u>Not RED, YELLOW, GREEN</u>	0	0	0		<input type="checkbox"/>
10.2.1	4. Intervention under abnormal conditions: YELLOW	0	0	0		<input type="checkbox"/>
10.2.1	5. Mandatory state (e.g. reset): BLUE	0	0	0		<input type="checkbox"/>
10.2.1	6. Initiation of the normal state: GREEN	0	0	0		<input type="checkbox"/>
9.2.3.10 10.2.1	7. Control devices alternately initiating stop and motion are used only for functions which do not lead to a hazardous situation Marking: WHITE, GREY, BLACK <u>Not RED, YELLOW, GREEN</u>	0	0	0		<input type="checkbox"/>
10.2.1	8. Where the same colour is used for example for On/Off (WHITE/GREY,BLACK), unambiguous supplementary identification is provided by structure, shape, position	0	0	0		<input type="checkbox"/>
10.5	9. Rotary control devices (e.g. selector switches, potentiometers) are secured against rotation of the stationary member (friction alone is not sufficient)	0	0	0		<input type="checkbox"/>
	10. Switch position unambiguously recognizable	0	0	0		<input type="checkbox"/>
5.13.3 Indicator lights/illuminated pushbuttons						
10.3.1 10.3.2 table 4	1. The following colours are used for the "indication" type of information (information or task to be performed following illumination):	0	0	0		<input type="checkbox"/>
	- RED (emergency, hazardous condition, immediate action required)		0			<input type="checkbox"/>
	- YELLOW (abnormal condition, intervention necessary)		0			<input type="checkbox"/>
	- GREEN (normal state, safe condition)		0			<input type="checkbox"/>
	- BLUE (mandatory action, reset)		0			<input type="checkbox"/>

Testing performed against: IEC 60204-1 2016 (Sub-)clause:	Electrical equipment of machines	N/A	YES	NO		DEFICIT
10.3.1 10.3.2 table 4	2. The following colours are used for the " confirmation " form of information (illumination following action):	0	0	0		<input type="checkbox"/>
	- WHITE (command or state is confirmed)		0			<input type="checkbox"/>
	- BLUE (command or state is confirmed)		0			<input type="checkbox"/>
	- GREEN (in special cases)		0			<input type="checkbox"/>
10.4	3. White is used for illuminated pushbuttons to which no obvious colour can be assigned	0	0	0		<input type="checkbox"/>
10.4	4. The colour of emergency switching off actuators remains red regardless of the state of the illumination	0	0	0		<input type="checkbox"/>
10.3.1 Refer also to IEC 61310-1	5. Indicator lights and displays visible from the operator's normal position	0	0	0		<input type="checkbox"/>
10.3.1	6. Facility for checking the operability of visual and audible warning devices	0	0	0		<input type="checkbox"/>
10.3.2	7. Indicating towers on machines have the applicable colours in the following order from the top down: RED, YELLOW, BLUE, GREEN, WHITE	0	0	0		<input type="checkbox"/>
5.14 Exposed conductive parts of the machine (frame)						
8.2.3	1. Exposed conductive parts of the machine are connected to the protective bonding circuit: - Separate protective conductor connection	0	0 0	0		<input type="checkbox"/>
	2. Protective conductor connecting point is:					
	- Permanent		0	0		<input type="checkbox"/>
	- Conductive (see Section 4.7, Protective bonding circuit)		0	0		<input type="checkbox"/>
8.2.4	- Marked		0	0		<input type="checkbox"/>
8.2.2 8.2.6	- Of adequate cross-sectional area		0	0		<input type="checkbox"/>
6.2	Basic protection against direct contact with live parts in and on the machine:					
6.2.2	3. Protection by enclosures	0	0	0		<input type="checkbox"/>
6.2.2	- Use of a key or tool is necessary for access		0	0		<input type="checkbox"/>
6.2.2	- Live parts are disconnected before the enclosure can be opened		0	0		<input type="checkbox"/>
6.2.2	- Degree of protection at least IP2X / IPXXB		0	0		<input type="checkbox"/>
6.2.3	4. Protection by complete, permanent insulation of live parts	0	0	0		<input type="checkbox"/>

(R) = Recommendation

Testing performed against: IEC 60204-1 2016 (Sub-)clause:	Electrical equipment of machines	N/A	YES	NO		DEFICIT
6.2.6 Siehe auch IEC 60364-4-41	5. Protection by placing out of reach or by obstacles	0	0	0		<input type="checkbox"/>
6.4	6. Basic protection; for indirect contact, protection by the use of PELV (see Section 4.4, Protection against electric shock)	0	0	0		<input type="checkbox"/>
5.15 Electrical controlgear on the machine						
5.15.1 Controlgear (position switches, pressure switches, encoders)						
10.1.3 13.4.1 Refer also to IEC 60529	1. Possesses a degree of protection (IP), including cable access, which provides suitable protection against the ingress of contaminants (such as swarf, dust, foreign objects)	0	0	0		<input type="checkbox"/>
10.1.3	2. Is protected against the influence of aggressive liquids, vapours or gases	0	0	0		<input type="checkbox"/>
10.1.2	3. Is readily accessible for service and maintenance	0	0	0		<input type="checkbox"/>
10.1.2	4. Is mounted in such a manner that it cannot be damaged by activities on the machine (e.g. material transport)	0	0	0		<input type="checkbox"/>
6.3.2	5. Possesses total insulation (including cable glands), or	0	0	0		<input type="checkbox"/>
6.3.3 6.4	6. Features protective conductor connections (also applies to extra-low voltage, except PELV) Where this is not the case, affected devices:	0	0	0		<input type="checkbox"/>
11.2.1	7. The association between plug-in control devices is made clear by distinctive type (e.g. shape, marking, reference designation)	0	0	0		<input type="checkbox"/>
5.15.2 Position sensors (position switches, proximity switches)						
9.3.2	1. Exceeding of an operating limit (position, end position) is prevented by:	0	0	0		<input type="checkbox"/>
9.3.2	- A mechanical device		0			
9.3.2	- Integration of position sensors into the control system		0			
10.1.4	2. Position sensors are arranged such that they are not damaged in the event of overtravel	0	0	0		<input type="checkbox"/>

Testing performed against: IEC 60204-1 2016 (Sub-)clause:	Electrical equipment of machines	N/A	YES	NO		DEFICIT
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10.1.4	3. Position sensors in circuits with safety-related control functions take the form of:	0	0	0		<input type="checkbox"/>
10.1.4	- Mechanical position switches with direct opening action in accordance with IEC 60947-5-1	0	0	0		<input type="checkbox"/>
10.1.4	- Proximity switches with a comparable level of safety in accordance with IEC 60947-5-3	0	0	0		<input type="checkbox"/>
	4. Control element is actuated by rigid mechanical parts (not springs)	0	0	0		<input type="checkbox"/>
DGUV-I 203-079 5.2	5. Position switches, control elements and operating elements are secured against changes in position (by spring washers, serrated lock washers, fixing pins)	0	0	0		<input type="checkbox"/>
DGUV-I 203-079 5.1	6. Adequate actuation stroke	0	0	0		<input type="checkbox"/>
DGUV-I 203-079 5.1	7. Switching off/stopping before access to danger zones is possible	0	0	0		<input type="checkbox"/>
DGUV-I 203-079	8. Mechanical position switches employed for safety purposes are selected and fitted in accordance with the requirements (see table)	0	0	0		<input type="checkbox"/>
DGUV-I 203-079 5.3	9. Position switches are safeguarded against inadvertent actuation	0	0	0		<input type="checkbox"/>

Position sensors (position switches) for personnel protection

	Location of use	Marking according to plan	Manufacturer	Type	Positive actuation (break contact) element		No positive actuation (make contact) element Cat. 1	IEC 60947-5-1 Test mark
					category 1	category 2		
1.								/
2.								/
3.								/
4.								/
5.								/
6.								/
7.								/


5.16 Conductors (terminal boxes and plug/socket combinations) outside the compartments

	1. Conductors in the form of light plastic-sheathed cable	0	0	0		<input type="checkbox"/>
13.4.1	2. Conductors of a circuit are not distributed separately (multi-core cables, cable ducting systems, etc.)					

Testing performed against: IEC 60204-1 2016 (Sub-)clause:	Electrical equipment of machines	N/A	YES	NO		DEFICIT
13.4.1	3. Means of introduction, cable glands, etc. do not reduce the degree of protection of the enclosure	0	0	0		<input type="checkbox"/>
13.4.2	4. Single-core cables and connections in cable ducts/conduits	0	0	0		<input type="checkbox"/>
12.3	5. Electric strength of the insulation at least 2 000 V AC, 5 minutes at voltages > 50 V AC or 120 V DC (PELV circuits laid separately: 500 V)	0	0	0		<input type="checkbox"/>
13.4.2	6. Conductors from devices with dedicated cables are sufficiently short and located or protected such that the risk of damage is minimized	0	0	0		<input type="checkbox"/>
5.16.1 Light plastic-sheathed cable						
13.5	1. Protected against mechanical damage	0	0	0		<input type="checkbox"/>
13.5.1	2. No sharp edges	0	0	0		<input type="checkbox"/>
13.5.1	3. Protected against oil, temperature, chemical influences, etc.	0	0	0		<input type="checkbox"/>
5.16.2 Single-core cables in cable ducts/trunking						
13.5.1	1. Cable ducts have a suitable degree of protection	0	0	0		<input type="checkbox"/>
13.5.1	2. No sharp edges, rough surfaces, etc.	0	0	0		<input type="checkbox"/>
13.5.1	3. No mechanical damage to the duct; secure fixing	0	0	0		<input type="checkbox"/>
13.5.1	4. Ducts are not over-occupied (R)	0	0	0		<input type="checkbox"/>
13.5.1	5. Cable conduits are not laid together with oil and water lines, or clear marking (R)	0	0	0		<input type="checkbox"/>
13.5.2 13.5.4	6. Cable conduits are of suitable type, corrosion-resistant, e.g. galvanized steel	0	0	0		
5.16.3 Moveable conductors						
13.4.3	1. Are flexible, multistranded, and exhibit high bending fatigue strength	0	0	0		<input type="checkbox"/>
	2. Are protected by:					
13.4.3	- Flexible metal tubes		0			
13.4.3	- Plastic tubing		0			
13.4.3	- Special conductor type		0			
13.4.3	3. No tensile or tight-radius bending stress (e.g. on cable glands)	0	0	0		<input type="checkbox"/>
13.4.3	4. Bending radius $\geq 10 \times$ outside diameter	0	0	0		<input type="checkbox"/>
13.4.3	5. Space of ≥ 25 mm or fixed barriers between cables subject to movement and moving machine parts	0	0	0		<input type="checkbox"/>
13.4.3	6. Flexible metal protective tubing is not used for connections subject to rapid and frequent movement	0	0	0		<input type="checkbox"/>

Testing performed against: IEC 60204-1 2016 (Sub-)clause:	Electrical equipment of machines	N/A	YES	NO		DEFICIT
13.4.3	7. Flexible conductors on machines are protected and/or the following abuse is not possible: – Being run over by the machine itself – Being run over by vehicles or other machines – Coming into contact with the machine structure during movements – Running in or out of cable baskets, or on or off cable drums – Acceleration forces and wind forces on festoon systems or suspended cables – Excessive rubbing by cable collectors	0	0 0 0 0 0 0	0		<input type="checkbox"/>
13.4.3	8. No torsion in the cable (lateral angle < 5°) when: – Being wound on and off drums – Approaching and leaving cable guidance devices – Two turns always remain on the cable drum – Bending radii in accordance with IEC 60204-1, Table 8 are observed	0	0 0 0 0	0		<input type="checkbox"/>
5.16.4 Connected to the protective bonding circuit						
8.2.3	1. Cable ducts/conduits/swivel arms manufactured from metal	0	0	0		<input type="checkbox"/>
8.2.1	2. Flexible metal tubes including bushing plates	0	0	0		<input type="checkbox"/>
8.2.1	3. Cable drag chains manufactured from metal	0	0	0		<input type="checkbox"/>
8.2.1	4. Cable glands manufactured from metal	0	0	0		<input type="checkbox"/>
5.16.5 Minimum cross-sectional areas (see IEC 60204-1, Table 5)						
12.2	1. Outside protecting enclosures					
	- Fixed power circuits, single-core, flexible class 5 or 6: 1.0 mm ²	0	0	0		<input type="checkbox"/>
	- Fixed power circuits, single-core, solid class 1 or stranded class 2: 1.5 mm ²	0	0	0		<input type="checkbox"/>
	- Fixed power circuits, multi-core: 0.75 mm ²	0	0	0		<input type="checkbox"/>
	- Power circuit subjected to frequent movement, single-core, flexible class 5 or 6: 1.0 mm ²	0	0	0		<input type="checkbox"/>
	- Power circuit subjected to frequent movement, multi-core: 0.75 mm ²	0	0	0		<input type="checkbox"/>
	- Control circuits, single-core: 1.0 mm ²	0	0	0		<input type="checkbox"/>
	- Control circuits, multi-core: 0.2 mm ²	0	0	0		<input type="checkbox"/>
	- Control circuits, two-core, not screened: 0.5 mm ²	0	0	0		<input type="checkbox"/>
	- Data communication conductors: 0.08 mm ²	0	0	0		<input type="checkbox"/>
	2. Inside enclosures					
	- Power circuits, connections not moved: 0.75 mm ²	0	0	0		<input type="checkbox"/>
	- Control circuits: 0.2 mm ²	0	0	0		<input type="checkbox"/>
	- Data communication conductors: 0.08 mm ²	0	0	0		<input type="checkbox"/>

(R) = Recommendation

Testing performed against: IEC 60204-1 2016 (Sub-)clause:	Electrical equipment of machines	N/A	YES	NO		DEFICIT
	3. For aluminium conductors, cross-sectional area of at least 16 mm ²	0	0	0		<input type="checkbox"/>
	4. Frequently moved conductors, flexible and stranded type	0	0	0		<input type="checkbox"/>
5.16.6 Terminal boxes and other enclosures						
13.5.7	1. Terminals in easily accessible, robust enclosures	0	0	0		<input type="checkbox"/>
13.5.7 13.4.1	2. Appropriate degree of protection (e.g. IP 44), including cable glands	0	0	0		<input type="checkbox"/>
13.1.2	3. Sufficient length at cable terminations	0	0	0		<input type="checkbox"/>
13.1.2	4. Cable glands with strain relief	0	0	0		<input type="checkbox"/>
13.1.1	5. One terminal for each core, or specially suited terminals for multiple cores	0	0	0		<input type="checkbox"/>
13.1.2	6. All conductors run from terminal to terminal (without splices or joints within or outside the boxes); plug-and-socket combinations are not regarded as splices or joints for this purpose	0	0	0		<input type="checkbox"/>
13.3	7. All control wiring connected by means of terminals or appliance couplers (direct connection permissible only on power and measuring circuits)	0	0	0		<input type="checkbox"/>
13.4.4	8. Intermediate terminals for the control of complex machines (e.g. for position sensors/pushbuttons) present, and indicated on the circuit diagram (R)	0	0	0		<input type="checkbox"/>
8.2.3	9. Metal enclosure, connected with good conductivity to the power bonding circuit	0	0	0		<input type="checkbox"/>
8.2.4	10. Protective conductor connecting points marked or labelled (green/yellow, PE) 	0	0	0		<input type="checkbox"/>
13.1.1	11. Protective conductor connecting points secured against accidental loosening	0	0	0		<input type="checkbox"/>
13.1.1	12. Only one protective conductor connection on each terminal	0	0	0		<input type="checkbox"/>
13.2.2	13. Protective conductor: green/yellow	0	0	0		<input type="checkbox"/>
13.1.1	14. Terminals marked	0	0	0		<input type="checkbox"/>
13.1.1	15. Terminals not obscured by conductors	0	0	0		<input type="checkbox"/>
13.4.7	16. Spare conductors connected to spare terminals or isolated	0	0	0		<input type="checkbox"/>
13.1.1	17. Connector sleeves on conductor terminations (exceptions possible); not soldered	0	0	0		<input type="checkbox"/>
13.1.3	18. Where laid together, conductors are isolated for the max. voltage	0	0	0		<input type="checkbox"/>
13.4.2	19. Cable glands suitable for the ambient conditions	0	0	0		<input type="checkbox"/>
13.4.2	20. No tensile stress caused by dead weight of pendant stations	0	0	0		<input type="checkbox"/>

Testing performed against: IEC 60204-1 2016 (Sub-)clause:	Electrical equipment of machines	N/A	YES	NO		DEFICIT
13.1.4 Refer also to IEC 60364-5-52	21. Single-core cables armoured by steel wire or steel tape are not used for AC circuits	0	0	0		<input type="checkbox"/>
13.1.4 Refer also to IEC 60364-5-52	22. Conductors of AC circuits are not enclosed separately in enclosures of ferromagnetic material	0	0	0		<input type="checkbox"/>
5.16.7 Appliance couplers; requirements do not apply to bus systems						
13.4.5	1. Supply side on the protected sockets	0	0	0		<input type="checkbox"/>
13.4.5 8.2.3	2. Protective conductor connection (pin) with first-make contact at insertion and last-break contact at withdrawal	0	0	0		<input type="checkbox"/>
13.4.5 b)	3. Metallic housings are connected to the protective bonding circuit (not on PELV)	0	0	0		<input type="checkbox"/>
13.4.5	4. Contact with live parts not possible during insertion or withdrawal	0	0	0		<input type="checkbox"/>
13.4.5	5. Appliance couples possess retaining means (in order to prevent unintended disconnection):					
13.4.5	- Where rated currents exceed 16 A	0	0	0		<input type="checkbox"/>
13.4.5	- When disconnection may give rise to a hazardous situation	0	0	0		<input type="checkbox"/>
13.4.5 c)	- When not intended to be disconnected under load; clear marking to this effect is also necessary	0	0	0		<input type="checkbox"/>
13.4.5	6. Appliance couplers which are intended to be connected and disconnected under load must possess adequate load switching capacity; where the appliance coupler is rated at 30 A or greater, connecting and disconnecting under load must be prevented	0	0	0		<input type="checkbox"/>
13.4.5 d)	7. Clear identification of appliance couplers (ideally in addition with mechanical coding) where several such combinations are used	0	0	0		<input type="checkbox"/>
13.4.5	8. Where appliance couplers in accordance with IEC 60309-1 are employed in control circuits, only contacts which are intended for these purposes are used. Exemption from this requirement: HF signals superimposed on power circuits	0	0	0		<input type="checkbox"/>
13.4.5 a)	9. Parts which remain under voltage following disconnection possess a degree of protection of at least IP 2X or IP XXB. Exemption from this requirement: PELV	0	0	0		<input type="checkbox"/>
13.4.5 e)	10. Plug/socket combinations in control circuits satisfy the requirements of IEC 61984	0	0	0		<input type="checkbox"/>
7.2.5	11. Overcurrent protection in all live (non-earthed) conductors feeding socket circuits	0	0	0		<input type="checkbox"/>
Note: one or more of these requirements must be met						

Testing performed against: IEC 60204-1 2016 (Sub-)clause:	Electrical equipment of machines	N/A	YES	NO	DEFICIT
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5.17 Conductor wires and slip-ring assemblies					
12.7.1	1. Basic protection assured by: - Partial insulation of the live parts - Enclosures or barriers with a degree of protection of at least IP2X or IPXXB	O O	O O	O O	<input type="checkbox"/> <input type="checkbox"/>
12.7.1	2. Horizontal top surfaces of barriers or enclosures which are easily accessible possess a degree of protection of at least IP 4X or IP XXD	O	O	O	<input type="checkbox"/>
12.7.1	3. Protection by placing out of reach in conjunction with switching-off in an emergency situation	O	O	O	<input type="checkbox"/>
12.7.1	4. Conductor wires and bars arranged or protected such that: - Where conductor wires and bars are unprotected, contact with conductive parts is not possible - Swinging loads are not able to cause damage	O O	O O	O O	<input type="checkbox"/> <input type="checkbox"/>
12.7.2	5. Protective conductors do not carry current	O	O	O	<input type="checkbox"/>
12.7.2	6. Protective conductors and neutral conductors have separate conductor wires/bars and slip-rings	O	O	O	<input type="checkbox"/>
12.7.2	7. Continuity of the protective bonding circuit assured by the application of suitable measures (such as duplication of the current collectors, continuity monitoring)	O	O	O	<input type="checkbox"/>
12.7.3	8. Protective conductor current collectors are not interchangeable with other current collectors	O	O	O	<input type="checkbox"/>
12.7.4	9. Removable current collectors with switch-disconnector function possess a protective bonding circuit with late-break disconnection and early-make restoration of continuity	O	O	O	<input type="checkbox"/>
12.7.5	10. Clearances correspond to overvoltage category III (see IEC 60664-1)	O	O	O	<input type="checkbox"/>
12.7.6	11. Creepage distances: In abnormally dusty, moist or corrosive environments: - Unprotected conductor wires/bars and slip-ring assemblies possess insulators with a creepage distance of at least 60 mm - Enclosed conductor wires, insulated multipole conductor wires and insulated individual conductor bars have creepage distances of at least 30 mm	O O O	O O O	O O O	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
	12. Manufacturers' recommendations concerning gradual deterioration in the insulation values are observed	O	O	O	<input type="checkbox"/>
12.7.7	13. Where the conductor wires or conductor bars are arranged such that they can be divided into sections: The energization of adjacent sections by the current collectors themselves is prevented	O	O	O	<input type="checkbox"/>
12.7.8	14. Conductor wires/bars and slip-ring assemblies for power circuits are arranged in separate groups to those for control circuits	O	O	O	<input type="checkbox"/>

Testing performed against: IEC 60204-1 2016 (Sub-)clause:	Electrical equipment of machines	N/A	YES	NO		DEFICIT
12.7.8	15. Conductor wires/bars and slip-ring assemblies are short-circuit proof		0	0		<input type="checkbox"/>
12.7.8	16. Where slip-ring systems are laid underground or underfloor: - Removable covers cannot be removed without the aid of a tool - Metal covers are bonded together and earthed	0	0 0	0 0		<input type="checkbox"/> <input type="checkbox"/>
12.7.8	17. Where conductor bars are located in common metal enclosures, individual enclosure sections are bonded together and earthed at multiple points	0	0	0		<input type="checkbox"/>
12.7.8	18. Conductor bar ducts have drainage facilities	0	0	0		<input type="checkbox"/>
12.7.8	19. Covers or cover plates of metal enclosures or underground ducts are earthed	0	0	0		<input type="checkbox"/>
12.7.8	20. Continuity of protective bonding circuits involving metal hinges is assured	0	0	0		<input type="checkbox"/>

Testing performed against: IEC 60204-1 2016	Electrical equipment of machines	Motor 1			Motor 2			Motor 3			Motor 4			Motor 5			Motor 6		
		N/A	YES	DEFICIT	N/A	YES	DEFICIT	N/A	YES	DEFICIT	N/A	YES	DEFICIT	N/A	YES	DEFICIT	N/A	YES	DEFICIT
(Sub-)clause		Motor 1			Motor 2			Motor 3			Motor 4			Motor 5			Motor 6		

5.18 Motors																			
14.1 (R)	1. Type to IEC 60034	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O
14.2	2. Degree of protection adequate (for the application and physical environment)	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O
	Degree of protection required	IP.....			IP.....			IP.....			IP.....			IP.....			IP.....		
	Degree of protection determined	IP.....			IP.....			IP.....			IP.....			IP.....			IP.....		
14.4	3. Easily accessible	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O
IEC 60034-1 Sub-clause 27.2 (R)	4. Direction of rotation arrow (where reversal of direction of rotation would be hazardous) is visible adjacent to motor	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O
14.4	5. Moving parts on the motor are protected	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O
14.4	6. Motor is mounted such that cooling is assured	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O
14.1	7. Overload/overcurrent protection correct	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O
8.2	8. Protective conductor connection is present and in order	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O
14.5	9. Power contactor adequately rated	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O
14.1	10. Overspeed protection requirements are met	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O

(R) = Recommendation

Testing performed against: IEC 60204-1 2016	Electrical equipment of machines	N/A	YES	NO		DEFICIT
(Sub-)clause						

Motor table						
Motor names on diagram	Motor designation	Rated output	Rated current Rated voltage.	Overload protection (motor protective circuit breaker)	Overcurrent/short-circuit protection	
					Max. permissible	Present
Motor 1		kW	A	Adjusted A	A	A
			V	Adjustment range A		
Motor 2		kW	A	Adjusted A	A	A
			V	Adjustment range A		
Motor 3		kW	A	Adjusted A	A	A
			V	Adjustment range A		
Motor 4		kW	A	Adjusted A	A	A
			V	Adjustment range A		

Testing performed against: IEC 60204-1 2016	Electrical equipment of machines	N/A	YES	NO		DEFICIT
(Sub-)clause:						

5.19 Overload and overcurrent (short-circuit) protection						
5.19.1 Motors						
7.3.1 7.3.2	1. Motors with ratings of > 0.5 kW have overload protection, detection, and interruption of all live conductors except the neutral conductor	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		<input type="checkbox"/>
7.3.1	2. Where interruption is unacceptable, a warning signal is issued	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		<input type="checkbox"/>
7.2.9	3. Motor overload protection (bimetal switch for motor protection), correctly adjusted (see motor table, Section 4.18) Type of overload protection:	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		<input type="checkbox"/>
7.3.1	4. Restarting following tripping prevented (where necessary)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		<input type="checkbox"/>
7.3.1	5. Overload protection by means of over-temperature protection or similar (possibly with additional protection for blocked rotor or single-phasing)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		<input type="checkbox"/>
7.2.8	6. Short-circuit protection (back-up fuse) of motor protective switches, bimetal relays, MCBs is assured (statement on rating plate and in lists)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		<input type="checkbox"/>
7.4	7. Protection against abnormal temperature provided	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		<input type="checkbox"/>
7.2.7	8. Transformers possess suitable overcurrent protection	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		<input type="checkbox"/>
5.19.2 Circuits (conductors) – current-carrying capacity						
12.4 7.1	1. Conductors rated for the highest possible current under steady-state conditions; see IEC 60204-1, Table 6 and Annex D	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		<input type="checkbox"/>
12.4 7.2 6.3.1	2. Conductors adequately protected against overcurrent (short-circuit, for example in the event of an insulation fault) by suitable protective equipment; see IEC 60204-1, Annex D	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		<input type="checkbox"/>
7.2.8	No overcurrent protection on the load side of the main conductor Short-circuit hazard prevented by the following measures: - Current-carrying capacity sufficient for the load, and - Supply conductor not longer than 3 m, and - Protected against external influences by an enclosure or cable duct	<input type="radio"/>	<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>	<input type="radio"/>		<input type="checkbox"/>

Testing performed against: IEC 60204-1 2016	Electrical equipment of machines	N/A	YES	NO		DEFICIT
(Sub-)clause:						

5.20 Accessories and lighting						
5.20.1 Lighting						
15.2.1	1. Incorporated into the protective measures by:	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		<input type="checkbox"/>
	2. Protective conductor connection		<input type="radio"/>			
	3. Total insulation		<input type="radio"/>			
15.2.3 15.2.2 7.2.6	4. Dedicated overcurrent protection of all non-earthed conductors	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		<input type="checkbox"/>
15.2.2	5. Rated voltage below 50 V (R), max. 250 V	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		<input type="checkbox"/>
15.2.2	6. Supply by a dedicated transformer with separate windings and overcurrent protection on the secondary side		<input type="radio"/>			
15.2.2	7. Supply from a circuit of the electrical equipment of the machine		<input type="radio"/>			
15.2.2	8. Supply from a power supply unit fitted with an isolating transformer (in accordance with IEC 61558-2-6)		<input type="radio"/>			
15.2.2	9. Transformer connected to the: Line side of the supply disconnecting device Load side of the supply disconnecting device For other alternatives and requirements, see IEC 60204-1, Sub-clause 15.2.2		<input type="radio"/> <input type="radio"/> <input type="radio"/>			
15.2.4	10. Adjustable lighting fittings: Suitable for workshop use/the ambient conditions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		<input type="checkbox"/>
15.2.4	11. Lampholders constructed of an insulating material and preventing unintentional contact	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		<input type="checkbox"/>
15.2.4	12. Reflector not supported by the lampholder	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		<input type="checkbox"/>
15.2.1	13. On/Off switch not incorporated into the lampholder or connecting cord	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		<input type="checkbox"/>
15.2.1	14. Stroboscopic effects from the lighting are avoided	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		<input type="checkbox"/>
5.20.2 Socket outlets for accessory equipment						
15.1	1. Socket outlets up to 16 A compliant if possible with IEC 60309-1; if not, marked with the voltage and current values	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		<input type="checkbox"/>
15.1	2. Protected against overcurrent and overload separately from other circuits	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		<input type="checkbox"/>
15.1	3. Protective conductor connecting point provided for accessories	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		<input type="checkbox"/>
15.1 Table A.1 / A.2	4. Where the supply is disconnected automatically, the disconnection times satisfy those in Table A.1/A.2	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		<input type="checkbox"/>
15.1	5. Use of an RCD with a rated operating current of ≤ 30 mA (on circuits with a current rating of ≤ 20 A)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		<input type="checkbox"/>

Testing performed against: IEC 60204-1 2016	Electrical equipment of machines	N/A	YES	NO		DEFICIT
(Sub-)clause:						

5.21 Tests

18.1	1. If the extent of verification is not stated by a dedicated product standard, verifications must always include items a), b), c) and h), and may include one or more of the items d) to g): a) Verification that the electrical equipment complies with its technical documentation b) Verification of the continuity of the protective bonding circuits c) Verification of the conditions for protection by automatic disconnection of supply d) Insulation resistance test e) Voltage test f) Protection against residual voltage g) Verification that the relevant requirements of 8.2.6 are met h) Functional tests	O	O	O		<input type="checkbox"/>
			O			
			O			
			O			
			O			
			O			
			O			
			O			
			O			
			O			
5.21.1 Verification of conditions for protection by automatic disconnection of supply						
18.2.1	1. Demonstration by Tests 1 and 2 of the conditions for automatic disconnection of supply	O	O	O		<input type="checkbox"/>
18.2.1	2. The machine to be verified is intended for connection to a TN system	O	O	O		<input type="checkbox"/>
18.2.1	3. The machine to be verified is intended for connection to a TT system Note: For IT systems, see IEC 60364-6	O	O	O		<input type="checkbox"/>
18.2.1	4. Where RCDs are used, function test performed	O	O	O		<input type="checkbox"/>
18.2.1	5. Test procedure and test interval for RCDs is described in the maintenance instructions	O	O	O		<input type="checkbox"/>
18.2.3	6. Verification at the site of erection of the machine/on site performed in consideration of the machine status (see IEC 60204-1, Table 9). - Test 1 required - Test 2 required	O	O	O		<input type="checkbox"/>
			O			
			O			

Testing performed against: IEC 60204-1 2016	Electrical equipment of machines	N/A	YES	NO		DEFICIT
(Sub-)clause:						

5.21.1.1 Test 1: Continuity of the protective						
18.1 b)	1. Testing is performed for each protective bonding circuit of a machine	O	O	O		<input type="checkbox"/>
18.2.2	<p>Measurement of the continuity of the protective bonding circuit:</p> <ul style="list-style-type: none"> - Between the PE terminal and relevant points in the protective bonding circuit - With a current between at least 0.2 A and 10 A (higher currents are to be preferred, as they increase the accuracy of the test results) - From an electrically separated supply source, e.g. SELV (where possible, not PELV) with a maximum no-load voltage of 24 V AC or DC <p>The resistance measured is within the range expected for the length, cross-sectional area and material of the protective conductor(s) Where a PELV supply is used, earthing may have to be disconnected (for the duration of measurement only)</p>					
	Testing point	Cross-sectional area [mm ²]	Length [m]	Resistance [Ω]		
	1. Switchgear cabinet					
	2. Mounting plate					
	3. Switchgear cabinet doors/lids with electrical equipment					
	4. Control panels (including anodized)					
	5. Motors, valves					
	6. Body of the machine					
	7. Appliance couplers, limit switches, foot-operated switches					
	8. Metal hoses, metal cable glands					
	9. Manually operated controls (pendant push-buttons, swivel arms)					
	10. Withdrawable units					
	11. Parts which are removed and held in the hand for the purpose of adjustment/maintenance					
	12.					
	13.					
	14. Requirements concerning the resistance of the protective conductor are satisfied in all testing points	O			<input type="checkbox"/>	

Testing performed against: IEC 60204-1 2016	Electrical equipment of machines	N/A	YES	NO		DEFICIT
(Sub-)clause:						

5.21.1.2		Test 2: Fault loop impedance and suitability of the overcurrent protective device				
18.2.3	1. Power supply and external protective conductor securely connected (visual inspection)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		<input type="checkbox"/>
18.2.3	2. The conditions for protection by automatic disconnection of the power supply are verified by: a) Verification of the fault loop impedance by: - Compliance with IEC 60204-1, Table 10 (TN system) or - <u>Measurement</u> in compliance with A.1.4.2 (TN systems), or - <u>Measurement</u> in compliance with A.2.4 (TT systems), or - <u>Calculation AND</u> b) Verification of the characteristics and settings of the overcurrent protective devices (Annex A). The PDS manufacturer's and protective device manufacturer's instructions are observed	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		<input type="checkbox"/>
18.2.4 Table 10	3. Fault loop impedance – <u>IEC 60204-1, Table 10</u> : Table 10 lists examples of maximum cable/conductor lengths for protective devices and their loads in TN systems. Requirements concerning the fault loop impedance for TN systems can be considered met when the maximum lengths stated in Table 10 are not exceeded and the assumptions stated there are observed. Deviation from these assumptions may necessitate complete calculation or measurement of the fault loop impedance. Circuits affected are: 	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		<input type="checkbox"/>

Testing performed against: IEC 60204-1 2016	Electrical equipment of machines	N/A	YES	NO		DEFICIT
(Sub-)clause:						

18.2.3 Annex A.1.4.2 A.2.4 A.1.2 A.2.2.3	<p>4. <u>Fault loop impedance – measurement:</u> Measurement of the fault loop impedance with measurement apparatus satisfying IEC 61557-3 During measurement:</p> <ul style="list-style-type: none"> - The machine must be connected to a supply corresponding to that of the intended installation - The measured value of the fault loop impedance must satisfy the requirements of A.1.2 (TN systems) or A.2.2.3 (TT systems): $Z_s \times I_a \leq U_0$ - Consideration must be given to the increase in conductor resistance accompanying the temperature rise caused by the fault current - This measurement must be preceded by Test 1 <p>Note: Typical arrangements for fault loop impedance measurement on a machine are shown in IEC 60204-1, Figs. A.1 or A.2 (TN systems) or Figs. A.3 or A.4 (TT systems)</p>	O	O	O		<input type="checkbox"/>
	Measurement loop	O	O	O		<input type="checkbox"/>
	5.	O	O	O		<input type="checkbox"/>
	6.	O	O	O		<input type="checkbox"/>
	7.	O	O	O		<input type="checkbox"/>
	8.	O	O	O		<input type="checkbox"/>
18.2.3 Annex A.1.4.1 A.2.3	<p>9. <u>Fault loop impedance – calculation:</u> Verification of the continuity of the protective conductor (Test 1) may be substituted for measurement of the fault loop impedance when:</p> <ul style="list-style-type: none"> - Calculations of the fault loop impedance or resistance of the protective conductor are available, and <p>The arrangement of the installation permits verification of the length and cross-sectional area of the conductors Circuits to which this applies:</p> <p>.....</p> <p>.....</p>	O	O	O		<input type="checkbox"/>

Testing performed against: IEC 60204-1 2016	Electrical equipment of machines	N/A	YES	NO		DEFICIT
(Sub-)clause:						
18.2.3 Annex A.1.4.1	<p>10. Characteristics and setting of the overcurrent protective device (TN systems):</p> <p>Verification by visual inspection:</p> <ul style="list-style-type: none"> ▪ Of the setting of the rated current on circuit-breakers ▪ Of the rated current for fuses ▪ On power drive systems (PDSs): confirmation that the manufacturer's figures are met <p>Devices for which the values are not correct:</p> <p>.....</p> <p>.....</p>	0	0 0 0 0	0		<input type="checkbox"/>
18.2.3 Annex A.2.3	<p>11. Setting of the overcurrent protective device (TT systems):</p> <ul style="list-style-type: none"> ▪ Checking of the rated residual current for tripping value ▪ The residual current device has been tested in accordance with the relevant standards ▪ Inspection of all connections to the residual current device ▪ On power drive systems (PDSs): confirmation that the manufacturer's figures are met <p>Devices for which the values are not correct:</p> <p>.....</p> <p>.....</p>	0	0	0		<input type="checkbox"/>

Testing performed against: IEC 60204-1 2016	Electrical equipment of machines	N/A	YES	NO		DEFICIT
(Sub-)clause:						

5.21.2 Insulation resistance test						
	1. Preliminary test: Verification that no connection exists in the power circuit between the protective bonding circuit and the neutral conductor	O	O	O		<input type="checkbox"/>
18.3	2. Testing of the insulation resistance by means of measurement apparatus complying with the IEC 61557 series of standards Measurement is performed: - Between the power circuit conductors (including the neutral conductor) and the protective bonding circuit - At a voltage of 500 V DC - The measured insulation resistance must not be < 1 MΩ Measured value: <u>Exception:</u> For certain parts of the electrical equipment (e.g. busbars, conductor bar/wire systems, slip-ring systems), a lower value is permitted, but not < 50 kΩ <u>Note:</u> Where surge protection devices are present which are expected to trip during the test, it is permissible for: - The devices concerned to be disconnected, or - The test voltage to be reduced to a value lower than the voltage protection level of the surge protection devices, but not lower than the upper limit of the supply (phase to neutral) voltage	O	O	O		<input type="checkbox"/>
5.21.3 Voltage test						
	1. Preliminary test: Verification that no connection exists in the power circuit between the protective bonding circuit and the neutral conductor	O	O	O		<input type="checkbox"/>
18.4	2. Use of test equipment in accordance with IEC 61180 for the voltage test - Rated frequency of the test voltage: 50 Hz or 60 Hz - Maximum test voltage: twice the rated supply voltage of the equipment or 1 000 V, whichever is the greater - Application of the maximum test voltage between the power circuit conductors (including the neutral conductor) and the protective bonding circuit for approximately 1 s - The requirements are satisfied if no disruptive discharge occurs <u>Note:</u> Assemblies and devices which are not rated to withstand this test voltage or which have already been subject to voltage testing in compliance with their product standards were disconnected prior to the test	O	O	O		<input type="checkbox"/>

(R) = Recommendation

Testing performed against: IEC 60204-1 2016	Electrical equipment of machines	N/A	YES	NO		DEFICIT
(Sub-)clause:						

5.22 Other verification						
18.1	1. The electrical equipment complies with its technical documentation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		<input type="checkbox"/>
18.5	2. Protection against residual voltage complies with IEC 60204-1, Sub-clause 6.2.4	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		<input type="checkbox"/>
18.6	3. Functional tests Refer also to Section 5.11, Stop functions, and Section 5.12, Control functions Refer to the separate checklist for control systems if applicable	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		<input type="checkbox"/>
18.6	4. Functional tests of the electrical equipment passed	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		<input type="checkbox"/>
7.10 IEC 61439-1	5. Short-circuit current rating determined by: - Application of design rules - Calculation - Testing	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		<input type="checkbox"/>

6 Information for use and technical documentation

6.1 Instruction handbook

Machinery Directive, Annex I, Section 1.7.4	1. Information for use in the language of the Member State	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		<input type="checkbox"/>
Machinery Directive, Annex I, Section 1.7.4	2. Original information for use and translation in the language of the country of use are available	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		<input type="checkbox"/>
Machinery Directive, Annex I, Section 1.7.4	3. Maintenance instructions for specialised personnel; Community language understood by the specialised personnel	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		<input type="checkbox"/>
17.1	4. The information for use contains instructions on identification, transport, installation, use, maintenance, decommissioning and disposal, specifically for equipment and circuits with a protective function - Emergency Switching Off/Stop category - Moving guard - Set-up mode - Manual mode - -	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		<input type="checkbox"/>

6.2 Information on the electrical equipment

6.2.1 General

17.1	1. Information provided for the purposes of identification, transport, installation, use, maintenance, decommissioning and disposal	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		<input type="checkbox"/>
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Testing performed against: IEC 60204-1 2016		Electrical equipment of machines	N/A	YES	NO		DEFICIT
(Sub-)clause:							
17.2 a)	2. Where more than one document is provided, a main document for the electrical equipment as a whole, listing the complementary documents associated with the electrical equipment, is provided	O	O	O			<input type="checkbox"/>
6.2.2 Information on installing and mounting							
	The information on installing and mounting addresses the following points:						
17.2 c)	1. Information on installing and mounting including a description of the electrical equipment's connection to the power supply	O	O	O			<input type="checkbox"/>
17.2 c)	2. The short-circuit current rating of the electrical equipment for each incoming power supply	O	O	O			<input type="checkbox"/>
17.2 c)	3. The rated voltage, number of lines, frequency, type of distribution system and full-load current for each incoming power supply	O	O	O			<input type="checkbox"/>
17.2 c)	4. Any additional requirements of the electrical supply/supplies (e.g. maximum supply source impedance, leakage current);	O	O	O			<input type="checkbox"/>
17.2 c)	5. Space required for removal or servicing of the electrical equipment	O	O	O			<input type="checkbox"/>
17.2 c)	6. Installation requirements to prevent impairment of cooling	O	O	O			<input type="checkbox"/>
17.2 c)	7. Environmental limitations (for example lighting, vibration, EMC environment, atmospheric contaminants), where required	O	O	O			<input type="checkbox"/>
17.2 c)	8. Functional limitations (for example peak starting currents and permitted voltage drops), where required	O	O	O			<input type="checkbox"/>
17.2 c)	9. Precautions to be taken for the installation of the electrical equipment relevant to electromagnetic compatibility	O	O	O			<input type="checkbox"/>
17.2 d)	10. Where extraneous parts can be touched simultaneously with the machine, instructions for their connection to the protective conductor; examples of such parts are: <ul style="list-style-type: none"> • Metallic pipes • Fences • Ladders • Handrails 	O	O	O			<input type="checkbox"/>
6.2.3 Information on function and operation							
17.2 e)	Information should provide the following content as applicable:	O	O	O			<input type="checkbox"/>
17.2 e)	1. An overview of the structure of the electrical equipment (for example by structure diagram or overview drawing)	O	O	O			<input type="checkbox"/>
17.2 e)	2. Procedures for programming or configuring, where necessary for the intended use	O	O	O			<input type="checkbox"/>
17.2 e)	3. Procedures for restarting following an unexpected stop	O	O	O			<input type="checkbox"/>
17.2 e)	4. Sequence of operation	O	O	O			<input type="checkbox"/>
6.2.4 Information on maintenance							
17.2 f)	1. Frequency and method of functional testing	O	O	O			<input type="checkbox"/>

Testing performed against: IEC 60204-1 2016		Electrical equipment of machines				N/A	YES	NO		DEFICIT
(Sub-)clause:										
17.2 f)	2. Instructions on the procedures for safe maintenance and, where necessary, information on suspending safety functions and/or protective measures (see 9.3.6)	O	O	O						<input type="checkbox"/>
17.2 f)	3. Guidance on adjustment, repair, and the frequency and method of preventive maintenance	O	O	O						<input type="checkbox"/>
17.2 f)	4. Details of the interconnections of the electrical components subject to replacement (for example by circuit diagrams and/or connection tables)	O	O	O						<input type="checkbox"/>
17.2 f)	5. Information on any special devices or tools required	O	O	O						<input type="checkbox"/>
17.2 f)	6. Information on spare parts	O	O	O						<input type="checkbox"/>
17.2 f)	7. Information on possible residual risks and on whether any particular training is required; specification of personal protective equipment, where required	O	O	O						<input type="checkbox"/>
17.2 f)	8. Where applicable, instructions to restrict availability of keys or tools to electrically skilled or instructed persons	O	O	O						<input type="checkbox"/>
17.2 f)	9. Settings (DIP switches, programmable parameter values, etc.)	O	O	O						<input type="checkbox"/>
17.2 f)	10. Information for validation of safety-related control functions following repair or modification, and for periodic testing where necessary	O	O	O						<input type="checkbox"/>
17.2 g)	11. Where required, information on handling, transportation and storage (for example dimensions, weight, environmental conditions, possible ageing constraints)	O	O	O						<input type="checkbox"/>
17.2 h)	12. Information on proper disassembly and handling of components (for example for recycling or disposal)	O	O	O						<input type="checkbox"/>

Testing performed against: IEC 60204-1 2016	Electrical equipment of machines	N/A	YES	NO		DEFICIT
(Sub-)clause:						

6.3 Information to be provided, circuit diagrams, parts lists	
17.2	<p>1. Circuit diagrams</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p>
	<p>2. Parts lists/component lists</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>For each part, the parts list contains the</p> <ul style="list-style-type: none"> - Equipment identifier 0 - Type designation 0 - Supplier/procurement source 0 - Characteristics 0 - Quantity 0
	<p>3. Drawings</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p>
	<p>4. Instruction/maintenance handbook</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p>