

Annex to EU-Type Examination Certificate Reg.-No. 01/208/4A/6137.01/21 dated 2021-07-02

Component:	Safety circuit with electronic components (PESSRAL)		
Certificate holder:	CEDES AG Science Park Kantonsstrasse 14 7302 Landquart Switzerland	Manufacturer:	CEDES AG Science Park Kantonsstrasse 14 7302 Landquart Switzerland
Designation / Type ID / Part-No.:	Designation	Type ID	Part-No.
	- iDiscovery	0000[0...1]-001	
	- APS iDiscovery	S-2-IDI-1-RC-01/00-D/X-[M U]-[A-Z],[0.5 ... 5.0]	
	- CTPS	-/-	115 581
	- CTPEs	-/-	115 582
	- For Details about the components and other accessories, see actual Revision List		
Ident.-No.:	01/208/4A/6137.01/21 – attached to the component iDiscovery		
Characteristics:	Power supply		
	- iDiscovery terminals V_{IN} , GND:		24 V DC $\pm 20\%$, max. 470 mA
	Inputs & Outputs		
	- iDiscovery safety inputs (all SW revisions, see associated Revision List)		
	- terminals EOP	Emergency electrical operation active	For connection of safety contacts in conformance with EN 81-20, 5.11.2.2 or switching elements with at least the same safety level Output voltage: max. $V_{IN} - 1.5$ V Contact close current: 100mA
	- terminals CD1	Car door contact front	
	- terminals SD1	Shaft door contact front	
	- terminals CD2	Car door contact back	
	- terminals SD2	Shaft door contact back	
	- iDiscovery safety inputs (SW revision 1.xx, see associated Revision List)		
	- terminals IOP	Inspection operation active	
	- iDiscovery safety inputs (SW revision 2.0x, see associated Revision List)		
	- terminals IOP _{CAR}	Inspection operation active on the car	
	- terminals IOP _{PIT}	Inspection operation active in the pit	
	- iDiscovery safety outputs (all SW revisions, see associated Revision List)		
	- terminals SAC A - terminals SAC B	Outputs to open the safety chain	Floating outputs AC15: 230 V, 3 A DC13: 24 V, 5 A SAC A and SAC B have to be wired in series
	- terminals AAC A - terminals AAC B	Outputs to control a suitable braking element ^{*)} , e.g. rope gripper	Floating outputs AC15: 230 V, 3 A DC13: 24 V, 5 A AAC A and AAC B have to be wired in series
	*) The braking element / safety gear are not part of this EU-Type Examination Certificate		

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Characteristics (cont'd):	Unintended car movement reaction time: 62 ms
	Nominal lift speed: 0.2 m/s ... 16.0 m/s
Ancillary conditions for the safe operation:	Environmental conditions: - Protection Degree: IP 43 ¹⁾ - Operating Temperature: -20° C ... +65° C - Humidity: ≤ 95 %, non-condensing - Max. altitude: 5'000 m above sea level - Mission Time: 30 years 1) The closed control cabinet and the iDiscovery enclosure together shall ensure that no solid contaminants equal to or larger than 2.5 mm can ingress into the iDiscovery.
	<ul style="list-style-type: none"> - It needs to be ensured by the selection of an appropriate installation space that environmental influences like water, conductive dust and condensation don't have a negative impact to the safety circuit. - On the installation of the PESSRAL system and components connected to it, the national regulations and the EN 81-20 are to be considered. - The 24 V DC power supply voltage must be an ES1 electrical energy source, where the accessible output voltage will not exceed the ES1 limits as stated in IEC 62368-1:2018, 5.3.1 resp. a SELV/PELV power supply, where the output voltage will not exceed 60 VDC under normal conditions and under single-fault conditions. - In order to detect the first earth fault/ground fault the 24 V DC power supply minus shall be connected to PE. - Only safety contacts in conformance with EN 81-20, 5.11.2.2 or switching elements with at least the same safety level shall be connected to the safety inputs of the system; the belonging wiring shall fulfil the requirements for short-circuit-proof. - In line with the installation and the recurring checks of the elevator, the following checks shall be performed: <ul style="list-style-type: none"> - Check for correct installation, - Check for 24 V DC supply connected to PE, - Check for the iDiscovery and APS iDiscovery labels (defines hard- and software versions), - Check the integrity of the seal attached on top of the iDiscovery's TEACH button and its Seal ID with the logbook of the lift, - Check of the relevant safety functions acc. to the iDiscovery Safety Manual, chapter 17. <p><u>Specific conditions</u> for the safety function 'Detection of an unintended movement of the lift car with open doors' acc. to EN 81-20, 5.6.7.7:</p> <ul style="list-style-type: none"> - As tripping time of the safety circuit for the detection of an unintended movement 62 ms have to be considered. - Response times of downstream actors (e.g. disengaging device, equipment for stopping and holding the lift car) are not contained herein and have to be considered separately.
Definition of type variant options:	<p><u>Available type variant option numbers:</u></p> <ul style="list-style-type: none"> - xxxxx-001: Support of safety output SAC/AAC - xxxx0-xxx: Default if option xxxx1-xxx below is not used - xxxx1-xxx: Without safety output AAC (safety output AAC not assembled) <p><u>Note:</u> Final type variant ID is created by summing up the individual type variant option digits. Valid combinations, see row 'Designation / Type-ID / Part-No' above.</p>

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Intended use:	EN 81-20:2020, Table A.1		
	Clause	Devices checked	SIL
	5.2.5.3.1 c)	Check of the locking of car door	2
	5.3.9.1	Check on the locked position of landing door locking device	3
	5.3.9.4.1	Check on closed position of landing doors	3
	5.3.11.2	Check on closed position of the panels without locks	3
	5.3.13.2	Check on closed position of car door	3
	5.6.2.2.1.6 a)	Over speed detection	2
	5.6.6.5	Check of the ascending car over speed protection means	2
	5.6.7.7	Detection of unintended car movement with open doors	2
	5.6.7.8	Check of the activation of the unintended car movement with open doors protection means	1
	5.12.1.3	Check of the retardation in the case of reduced stroke buffers	3
	5.12.1.4 a)	Check on levelling and re-levelling and preliminary operations	2
	5.12.2.3.1 b)	Final limit switches	1
<p><u>Note:</u> Usage of listed safety functions depends on lift configuration. In case of multiple safety contacts are connected to one safety input, those contacts shall be connected in series.</p>			

Revision:

Date	Rev.	Description / Changes	Author
2019-12-17	1.0	Initial creation, based on Report-No.: 968/FSP 1947.00/19	bwk/A-FS
2021-06-21	2.0	Updated, based on Report-No.: 968/FSP 1947.05/21	bwk/A-FS