Report EU-type examination

Report belonging to EU-type examination certificate number	:	NL18-400-1002-295-01
Date of issue of original certificate	:	02-08-2018
Certificate applies to	:	Safety component
Revision number / date	:	2 / 15-09-2019
Assessment basis	:	Lifts Directive 2014/33/EU
Project number	:	Standards: EN81-20:2020, EN81-50:2020

1. General specifications

Description of the product	:	Brake as Ascending Car Overspeed protection (ACOP) to prevent uncontrolled upward movement of the car and as Unintended Car Movement Protection (UCMP) means
Trademark	:	Shenyang Bluelight Drive Technology Co.,Ltd.
Type no.	:	BLB
Name and address of the manufacturer	:	Shenyang Bluelight Drive Technology Co.,Ltd. No.37 Shiji Road, Hunnan New District, Shenyang City, 110179 P.R. China
Laboratory	:	SISE, No.1032, Honggang Road, Luohu District, Shenzhen, 518029, P.R. China
Address of examined		

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2. Description of safety component

The Shenyang Bluelight Drive BLB, 2x2044 Nm is a brake that consist of two independent electro-mechanical block brakes, which fulfils the requirements for lift brakes according to clause 5.9.2.2.2 of EN 81-20:2020 and is mounted to a Shenyang Bluelight Drive WYT-T gearless machine.
The brake has two sets of two coils in the housing allowing separate electrical opening of the two brake halves.
The brake parts act on the traction sheave (e.g. on the brake drum that is bolted to the traction sheave directly by bolts), connected to the drive shaft by key and keyway. In that case the connections are proven to have built in redundancy. The brakes are also used as holding brakes during normal operation of the lift. The brake material is glued to the brake shoes and the shoes are bolted to the base.

ACOP
The Ascending Car Overspeed Protection shall be actuated by a governor overspeed contact or an equivalent EU-type tested device which was no part of this investigation.

UCMP
The brake can be used as braking element for Unintended Car Movement Protections according Art. 5.6.7 of EN 81-20:2020.
The brake torque for each type is pre-determined in the factory by application of a fixed amount of guided compression springs. The torque is indicated on a label attached to the brake. This setting is sufficient until the air gap between magnetic core and brake lining exceeds 0,65 mm. Each brake part is separately provided with a monitoring contact. The controller of the lift in which these brakes are used, must check the signals from each brake contact according to Art. 5.6.7.9 of EN 81-20:2020. If a failure is detected, the lift must be put out of service permanently.
The brake delay times t10 and/or t90 as indicated in this report shall be used to check by means of calculation that the stopping distance of the car fulfils the requirements. t10 means the time from activation until the moment that 10% of the nominal brake torque has been reached (T10) and t90 means the time from activation until the moment that 90% of the nominal brake torque (T90) has been reached.
A value of brake delay time between t10 and t90 can be interpolated if needed.
The defined and calculated nominal torque per brake is the minimum guaranteed torque under the conditions which the manufacturer prescribes during the lifetime of the brake.

Brake Coil Connections
A brake connection box is mounted on top of the machine. It has a 110VDC input from a rectifier inside the lift control panel. Main contactors are on the DC side.

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3. Examinations and tests

The examination covered a check whether compliance with the Lifts Directive 2014/33/EU is met, based on the harmonized product standards EN81-20:2020 and EN81-50:2020.
The examination included:

Examination of the technical file (See annex 2):
Check of performed calculations according to EN81-20 and EN81-50.
Examination of the representative model in order to establish conformity with the technical file.
Inspections and tests to check compliance with the essential requirements of the EN 81-50 Art. 5.7 and 5.8 at Shenzhen Institute of Special Equipment, Inspection and Research, Guangdong station Of Elevator Quality Supervision and Test (SISE). All results are described in the following SISE Test Reports:

ACOP	2022AF0967
UCMP	2022AF0860

Liftinstituut verified and accepts the tests and the results by this ISO 17025 accredited laboratory.
Tests to verify the required monitoring according to Art. 5.6.7.3 of EN 81-20.
The machine was placed on a test stand with a coupling to an intermediate shaft with a torque meter. (See annex 1c). On the other side of this intermediate shaft is an electric driving motor with overrated power to the shaft. The torque is stored as a function of time with a digital oscilloscope.
The torque meter was calibrated in advance by an ISO 17025 accredited laboratory.
The test stand is provided with additional flywheels that can be coupled to the setup but the inertia of the test stand on its own was found to be more than the maximum inertia for the application range defined for the ACOP for these traction machines.

- The electromotor is run with high torque at the highest speed anticipated before deceleration occurs (tripping rpm's of the brake). These maximum tripping rpm's are calculated based on the maximum tripping speed of the applied overspeed governor, which overspeed tripping contact activates the brake as ACOP. After constant speed is reached, the brake holding voltage is cut and the brake set is applied until the machine has come to a full stop, while the electromotor continues giving the unbalance torque calculated from the maximum allowed unbalance for the applicable machine. This test is done 10 times in clockwise direction and 10 times in counter clock wise direction with the complete brake.
- The results of the torque measurement has been recorded and studied. From these results the dynamic torque and the reaction times t_{10} and t_{90} have been established. Also the functioning of the monitoring contacts has been tested. Immediately after each test the temperature of the brake housing and brake discs was checked.

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- The test has been performed with brake contactors on the DC side. DC values for each brake are mentioned in chapter 2 of this report. The

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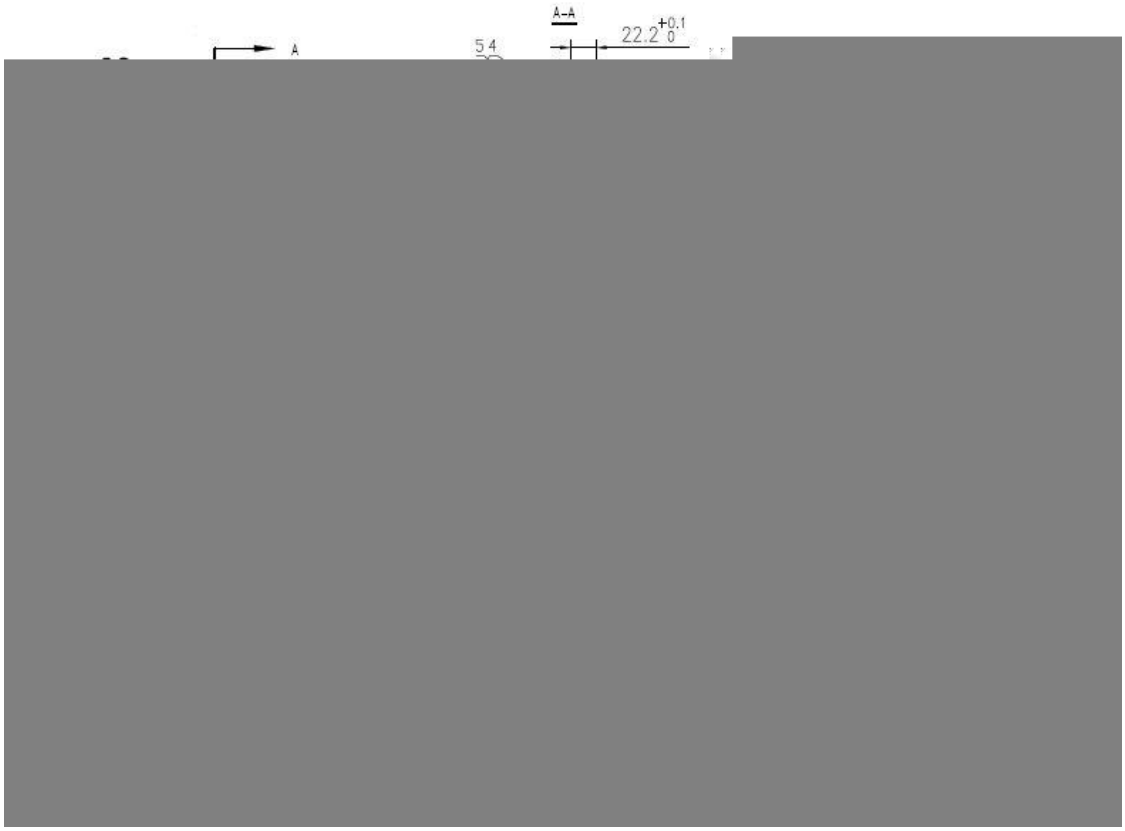
- For Ascending Car Overspeed Protection the tripping speed of governor contact shall be according Art. 5.6.6 of EN 81-20:2020.
- Any controller shall take the lift out of service when a fault in the correct lifting and dropping of the brake parts occurs.
- The Shenyang Bluelight Drive document “The Block Braking System, Instruction manual” must be provided with every brake/machine, in order to make the correct installation and maintenance.
- The installer of the lift needs to define the final complete UCMP solution taking into account the key-parameters of the WYT-T machine with BLB, 2x2044 Nm as UCMP stopping means.
  An additional calculation shall be done to check whether the deceleration and stopping distance of the car is within the limits as required by EN 81-20(-)] TJETQq0.000008871 0 595.32

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Annexes

Annex 1a : Outline drawing of BLB, 2x2044 Nm brake



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Annex 3. Reviewed deviations from the standards

EN xx-x par.	Requirement	Accepted design
x.x.x		

Annex 4 Revision of the certificate and its report

Rev.:	Date	Summary of revision
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