Ref No. XMT0201901303S/LVD

TEST REPORT

Report Reference No.	XMT0201901303S/LVD
Applicant:	DORNA Technology Co.,Ltd
Address:	No .99 Zhuangchi Middle Road,Ganyao Industrial Park,Jiashan,Zhejiang China
Sample Name:	AC SERVO DRIVER
Model:	See Annex
Test Type:	EPS-B2P-0D40AA-A000
Standard:	EN 61800-9-2:2017
Test Period:	Aug.28,2019 to Sep.04,2019
Test Result:	Please refer to next pages
Conclusion:	Based on the performed tests on submitted samples, the results comply with the Low Voltage Directive 2014/35/EU and its subsequent amendments

Tested By: **Reviewed By:**

John Chen - Engineer **Amy Zhang - Lab Manager**

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Applicant	DORNA Technology Co.,Ltd	
Address	No .99 Zhuangchi Middle Road,Ganyao Industrial Park,Jiashan,Zhejiang China	
Test Item Description		
Product Name :	AC SERVO DRIVER	
Standard :	EN 61800-9-2:2017 Adjustable speed electrical power drive systems. Ecodesign for power drive systems, motor starters, power electronics and their driven applications. Energy efficiency indicators for power drive systems and motor starters	
Trade Mark :	/	
Test Case Verdicts		
Test case does not apply to the test object :		N(.A .)
Test item does meet the requirement :		P(ass)
Test item does not meet the requirement :		F(ail)

General Remarks

- This report shall not be reproduced except in full without the written approval of the testing laboratory.
- The test results presented in this report relate only to the item tested.
- Clause numbers between brackets refer to clauses in EN 61800-9-2:2017.
- (see remark #)"refers to a remark appended to the report.
- (see Annex #)"refers to an annex appended to the report.
- Throughout this report a point is used as the decimal separator.

EN 61800-9-2:2017 Adjustable speed electrical power drive systems. Ecodesign for power drive systems, motor starters, power electronics and their driven applications. Energy efficiency indicators for power drive systems and motor starters

4	**Concept of the reference PDS (RPDS), the reference CDM (RCDM) and the reference motor (RM)**		-
4.1	**General**		P
	In order to determine the most efficient extended product for a given application, it is necessary to be able to easily compare several drive topologies and/or several control strategies. The Extended Product Approach described in EN 50598-1 allows to do that.To support this in an appropriate and standardized way, the concept of the so called "Reference PDS (RPDS)" is introduced. The standardized RPDS, consisting of a reference CDM (RCDM) and areference converter fed motor (RM) allows the comparison of the energy consumption of an average technology PDS.		
4.2	**Predefinition of the speed versus torque loss points of a RPDS, a RCDM, a RM and the associated power losses**		P
	All driven equipment can be described by the drive power required by the physics of the machine/application. The power requirements are the product of torque and speed at any working points. At each operating point there is an associated power loss in the motor system. The collection of (torque, speed) operating points at which the motor system may potentially be operated is infinite. Theoretically, it is necessary to know the amount of power losses generated at each point. In practice however, it is sufficient to know the power losses at a limited number of specific points (eight) wich are specified for the RPDS in Figure 3, for the RM in Figure 3 and for the RCDM in Figure 3.		
4.3	**Combining the PDS losses with the driven equipment**		-
4.3.1	Workflow for the semi-analytical model (SAM)		P
	The determination model for the losses or the energy efficiency index of an extended product is called"semi analytical model (SAM)", which includes physical and		

	mathematical parameters and calculation algorithms of the subparts of an EP.The workflow and responsibilities for determining the efficiency classification of an extended product is shown in Figure 6. It also illustrates how the SAM of the motor system (left hand side) shall be linked to the SAM of the driven equipment (right hand side). The link in between both semi analytical models shall be the load loss points of the PDS and their permissible tolerances. The actual needed operating points shall be required by the semi analytical model of the driven equipment.The PDS data containing the PDS losses according to Figure 3 (left hand side of Figure 6) is defined in this standard, whereas the semi analytical energy consumption models of the PDS-driven application (right hand side of Figure 6) shall be drafted by their responsible product committees by using the same approach. An example for PDS driven pump units is given in 4.3.2. Figure 7 shows how the different data sources shall be combined.		
4.3.2	Example for required operating points in order to determine the losses for a pump system		P
	Providing the electrical power losses of the three points pL,PDS(50; 25), pL,PDS(100; 50) and pL,PDS(100; 100) enables the pump manufacturers to derive the power input of the extended pump product inside the shaded area.A limited number of operation points is sufficient in this case because other operating points shall be calculated by interpolation (see G.2.1).NOTE 1 The loss value description within the shaded area is appropriately to be given with a permissible tolerance of ± 10 % as this tolerance will not significantly affect the EEI value of the pump unit. On the other hand this tolerance allowsstandardizing and classifying the RPDS for that purpose.The electrical power losses of the PDS at the 50 % speed versus 25 % torque point is the calculatedsum of the power losses of all its components including the feeding transformer, if it is dedicated tofeed only this PDS and all its auxiliary components such as filters or cables.		
4.4	**IE Classes of a line fed motor (IE1 up to IE9)**		P
	According to EN 60034-30-1, the IE classes for the device "line fed motor" is defined as IE1 up to IE4 (or IE5 respectively). The range IE5 up to IE9 is currently not used and under consideration. It is assumed that the nine classes IE1 to IE9 will be		

	sufficient to cover future efficiency classes of linefed motors.		
4.5	**IE Classes of a converter fed motor (IE1 up to IE9)**		P
	In accordance of IEC/TS 60034-2-3 the harmonic losses contribute to higher relative losses (about 15 % to 25 %) in the motor. If the motor is not designed to be supplied from the mains, its total losses at nominal power shall be indicated as an IE class. The IE classes for the converter driven motors are under consideration in IEC/TC 2.		
4.6	**IE Classes of a converter (complete drive module, CDM) (IE0 up to IE9)**		P
	The reference CDM (RCDM) shall be declared with the efficiency class "IE1". To declare the efficiency class of the CDM without considering the whole resulting PDS and to reflect the technological impact of the most significant parameter, the so called "Test load" shall be used as a defined unit.		
4.7	**IES Classes of a PDS (IES0 up to IES9)**		P
	The classification of the PDS shall be declared in a range of IES0 up to IES2. IES classes remain limited to IES0, 1 and 2 for this first edition of the document.The limit values for the classes IES3 to IES9 are subject to future editions. The relative losses of a PDS shall be determined by calculation or measurement. The calculation shall be done by arithmetic summation of the absolute losses of the converter fed motor plus the converter and the auxiliaries. The so called "Reference PDS (RPDS)", see Figure 3, shall be classified as class IES1.		
4.8	**Consistency of IE, IES classes**		P
	Consistency of the IE classes in this context does not mean that one could sum up an IE1 Motor plus an IE2 CDM to achieve PDS of the class IES3. The individual IE classes are necessary to independently classify a converter fed motor or just a CDM or just a motor without knowing the final motor system.Generally the IE classes will show increased efficiency or decreased relative power losses with increasing ordinal number.		
4.9	**Determination of the IES class of a resulting PDS by application of "reference" and "test" devices and guidance for the**		P

	manufacturers		
	A motor manufacturer may determine the losses of his motor and define an IE class according to Figure 9. He may also define an IES class for a PDS using his motor. For this he shall determine the relative losses for his motor together with a RCDM.A CDM manufacturer shall declare the losses of his dedicated CDM and display an IE class according to Figure 9 and may also declare an IES class for a PDS equipped with his CDM. For this, he shall measure or calculate the losses for his CDM and add in case real motor data are not available the losses of the RM. The CDM manufactures provide information in the documentation, according to the determination methods described in Clause 9, about expected IES classes for different combinations of a CDM and selected specific motors using the methods of this standard. For this expected IES class of a specificCDM and a specific motor, the efficiency shall be allowed to be increased using the control features of the CDM.		
5	**Mathematical model of the CDM, motor and PDS**		-
5.1	**General**		P
	The mathematical model given in this clause describes the procedure to calculate the losses of the addressed CDM, motor and PDS. It consequently allows determining the losses of a product without measurements. The model consists of formulae, variables and parameters. The formulae describe the state of the art loss calculation procedure, which is generally accepted today and which is published in literature. The variables depend on the operating point of the evaluated CDM, motor or PDS. The parameters are physical values describing a real product. In order to determine the losses of a product, these parameters have to be set according to specific design of the product. For the reference CDM(RCDM), reference motor (RM) and reference PDS (RPDS), reference parameters are defined in each section.		
5.2	**CDM**		-
5.2.1	General procedure and definition of the CDM and the test load		P
	Basically, it is the goal to describe the CDM losses as a function of torque and speed of the PDS. However, the CDM losses depend on its relative output voltage, which is no lower than the relative output frequency, and the output current of the inverter as well as		

	on the phase angle between fundamental inverter output voltage and fundamental inverter output current. In the first step, the motor speed has to be transferred into an inverter output frequency, and the motor torque has to be converted to an inverter output current and a phase angle between fundamental output current and output voltage of the CDM. In a first order approximation, the relative output speed of the PDS can be regarded as identical to the relative inverter output frequency. This is at least true in the operating field up to the nominal motor speed. In the range of field weakening, the relative inverter output voltage remains 1.00 for all motor speeds above the nominal motor speed.		
5.2.2	Output inverter losses		P
	The major part of the CDM losses is created by the output inverter section of the CDM. Its losses are described by the following analytical formulae, which are well established in literature. These formulae assume that the CDM output current is sinusoidal and the PWM pulses are randomly distributed over the sinusoidal current fundamental waveform. The random distribution is achieved as soon as the PWM frequency is at least 20 times the fundamental frequency of the motor current and the standard space vector modulation algorithm is used. Reduced losses due to overmodulation of the CDM are not taken into account. The reference CDM is consequently calculated according to these assumptions. For the loss calculation of a real CDM, the parameter values on power semiconductors shall be determined either at actual temperature when operating the CDM or at maximum operating temperature specified in the datasheet.		
5.2.3	Input converter losses		P

	If the input converter section consists of an active infeed converter, its losses shall be calculated in an identical way as the output inverter section. In this case, the output current of the active infeed converter is the mains current of the CDM. The output frequency of the active infeed converter is identical to the mains frequency. This limits the possible values for the modulation index m close to 1. The displacement factor between Fundamental input current and fundamental input voltage is close to 1 in case of motor operation of the CDM or to-1 in case of regenerative operation. Due to this displacement factor, the CDM input current is lower than the CDM output current for AIC infeed converters, it corresponds to $I \cdot m \cdot \cos\varphi$ out .The reference CDM is assumed not to contain an active infeed converter, but a diode rectifier.		
5.2.4	Input choke losses		P
	Input chokes are sometimes used to reduce harmonics. The inductance of the choke decreases with higher input power of the converter. Typically, the impedance of the input choke is chosen to be a certain part k1choke of the rated inverter impedance UmL1/Iequ. Assuming the voltage drop at the resistive part of the input choke to be a certain part k2choke of the overall voltage drop on the input choke, the losses in the input choke shall be calculated to		
5.2.5	DC link losses		P
	As explained in B.5, the DC link losses are mainly generated by resistors which are required to ensure a proper voltage sharing between the DC link capacitors and by the equivalent series resistor inside each capacitor. In a first order approximation, the amount of DC link capacitance is proportional to the rated inverter power. Consequently, the load independent losses in the resistors in parallel to the capacitors are proportional to the rated inverter output current as well. Furthermore, they are proportional to the square of the DC link voltage. The losses in the equivalent series resistor of the capacitor depend on the square of the AC part of the rectifier output current. Losses caused by high frequency inverter current are small enough to be neglected. The DC link losses shall finally be calculated by:		

5.2.6	Current conductor losses		P
	Ohmic losses are generated e.g. in current conductors of the CDM. In the mathematical model, these losses depend on the amplitude of the CDM output current and the ohmic resistance of current conductors. This ohmic resistance reduces in a linear way with increased rated CDM output current,because higher power CDM's use current conductors with a larger diameter. Consequently, the voltage drop at the ohmic conductor elements remains independent of the rated CDM current.		
5.2.7	Control and standby losses		P
	In B.10, the load independent losses are explained. In order to get comparable results, these losses shall be evaluated without external components such as position sensors,communication electronics and motor brakes connected. For the reference converter.		
5.2.8	Cooling loss factor		P
	State of the art CDMs use a cooling system to transport the losses to the ambient. In many cases, e.g.a fan is used, which is a part of the CDM. This cooling component causes additional losses. In the mathematical model, these losses are calculated proportional to all other losses created in the CDM at its operating point of maximum losses.		
5.2.9	Other CDM losses		P
	All losses in other parts of the CDM are neglected in the mathematical model, as they are significantly lower than the losses described above.		
5.2.10	Overall CDM losses		P
	All the losses in the CDM shall be referred to the rated apparent output power of the PDS, which is formed by the rated output phase voltage and rated output current of the CDM. As a final result of this section, the absolute CDM losses result in:		
5.3	**Reference motor (RM)**		-
5.3.1	General		P
	Standard 3-phase asynchronous motors (according to EN 50347) are widely used in industrial applications. These motors are able to run direct on line or to be fed by a CDM. There is no fixed relation between motor and CDM. Available standard products for both can be used. In order to determine losses or efficiency classes of a complete system, the CDM user needs data from the motor manufacturer or reference values as given in 5.3.3 as well as in Annex A.		

	The following 5.3.2 only considers the losses of converter-fed 3-phase asynchronous motors. Other motor systems (see e.g. Annex E) will be considered in future editions of this standard.		
5.3.2	Loss determination for 3-phase asynchronous motors fed by a CDM		P
	The formulae in this clause can be used for each 3-phase asynchronous motor. The parameters to be used for the reference motor (RM) are given in 5.3.3. Efficiency classes for sinusoidal fed asynchronous induction machines are defined in EN 60034-30-1. The classification is done for rated output (Pn: 100 % torque, nn100 % speed).		
5.3.3	Data of the reference motor (RM)		P
	The losses for the reference motor are derived from 4 pole asynchronous motors, using the 50 Hz-IE2 efficiency values according to EN 60034-30-1 and the factors rHL as described in 5.3.2.7.The losses of these reference motors are also valid for 60 Hz applications.		
5.4	**Reference PDS (RPDS)**		-
5.4.1	Reference PDS losses		P
	The resulting electrical power losses of the PDS at a specific speed (n) and torque (T) operation point will be the sum of the electrical power losses of the subcomponents of the PDS, Formula (27).		
5.4.2	PDS losses at different switching frequencies		P
	PDS are often operated with parameters that are different from those used by the RPDS. An important parameter for the loss calculation of the CDM is the switching frequency. An increased switching frequency will increase the losses of the CDM but the additional harmonic losses of the motor will decrease. The resulting power losses of the PDS for a dedicated switching frequency will be the sum of the electrical power losses of the subcomponents of the PDS , Formula (29), when the operating point (speed, torque) are kept constant.		-
5.5	**PDS losses for regenerative operation**		P
	PDS system can have the capability of handling generative loads that generate power. The generated power can be generated from decelerating the inertia of the load/motor or torque produced by the load e.g. draft in the fan. The CDM can have the capability to feed the extra generated power into the mains using an active infeed converter (AIC). The power fed to the mains is the generated power , less the		

	losses of the PDS. The CDM can also have the capability to dissipate the extra power to heat inside or outside of the CDM, e.g. via a resistor. The power dissipated in the resistor is considered as auxiliary losses for PDS loss calculation, reference to Formula (27).The CDM can also have the capability to store the energy (battery or capacitors or similar technology) and this energy can be reused when motor power is needed. Energy storage for charging and discharging causes losses that have to be added as Aux losses when the losses of an extended product are calculated.		
6	**Power losses of motor starters**		P
	For the purpose of loss calculations, the power losses of motor starters (including control losses) according to the product standard EN 60947-4-1 shall be calculated as 0,1 % of the rated motor power.Soft starters according to the product standard EN 60947-4-2 are usually mechanically bypassed at longer duty cycle (S1 operation) and therefore calculated like motor starters. The power losses of motor starters are sufficiently small so that the same IE class is used for a motor as well as for a motor controlled by a starter.		
7	**Limits for IE and IES classes**		-
7.1	**General**		P
	The losses or efficiency of the reference CDM, reference motor and reference PDS are used as a basis for assessing the compliance with an IE and IES class of an existing motor, CDM or PDS. Reference devices are associated with level 1. Existing devices with losses lower than the reference losses (i.e. better efficiency) are identified by levels higher than 1. The threshold and tolerance for each level are specified in the following clauses.		
7.2	**CDM**		P
	The reference CDM is described by the parameters given in 5.2. For power classes defined in IEC 60072-1 and IEC 60034-30, the losses of the reference CDM result in		
7.3	**Motor**		P
	In this edition of the standard, IE classes for motors operated on a CDM are not defined. They could be defined in a future standard IEC/TS 60034-30-2.		
7.4	**PDS**		P
	The IES classes for PDS system are defined in relation to RPDS losses. The IES1 class for PDS is defined by the loss		

	level of the RPDS. A PDS shall be classified as IES 1 if its relative losses are within ± 20 % of the value specified in Table 21. A PDS shall be classified as IES 0 if its relative losses are more than 20 % higher than the value specified in Table 21. A PDS shall be classified as IES 2 if its relative losses are more than 20 % lower than the value specified in Table 21.		
8	**Requirements for the user's documentation**		-
8.1	**General**		P
	The purpose of this Clause 8 is to define the information necessary to determine the energy losses of the CDM and the PDS. The information requirement is presented as Table 22, showing where the information shall be provided, followed by explanatory subclauses. All energy efficiency relative equipment labels shall be given in the documentation. The requirements of Clause 8 apply to all CDM and the PDS, unless otherwise stated. The information provided shall ensure an energy efficiency classification of the CDM, PDS and it shall also provide sufficient information to ensure an energy efficiency classification for the final application and/or system where the CDM or PDS is used as a component.		
8.2	**Information for selection**		P
	Each part of a CDM or PDS that is supplied as a separate product shall be provided with information relating to its function and electrical characteristics as requested by the applicable product standards.		
8.3	**Information for determination of energy efficiency classes**		P
	For the energy classification (IE/IES) of the CDM and PDS the manufacture shall provide information about the classification as determined in 4.6, 4.7, 7.2 and 7.4 and verified according to Clause 9. A PDS IES rating shall be given in case where the motor and CDM are physically combined to a single unit or in case they are intended to be used in this combination only. In this case, an IE rating for the CDM is not required.		
8.4	**Information on the determination of additional energy losses and part load conditions.**		-

8.4.1	General		P
	For the calculation of the energy efficiency classes in final applications or system (see 4.2, Figure 6),where the CDM and/or PDS are used as components as described in Annex B, the losses of the CDM or PDS are required. This also includes part load operation as well as applicable options needed for operation of this application.		
8.4.2	Losses in part load conditions		P
	The manufacturer shall state the losses of the CDM according to the part load measurement points as defined in 4.2 and verified according to Clause 9. In this edition of the standard, the information on losses is only mandatory only for CDM's converting AC input power to AC output power. The manufacturer shall state the losses of the PDS according to the part load operation points as defined in 4.2 and verified according to Clause 9.		
8.4.3	Losses of auxiliaries and options		P
	If the losses of an individual optional EMI filter, line choke, transformer, external fan, output choke and output filter and other power consuming options, which is intended to be used together with the PDS or CDM for the operation in the final application, exceeds: • 0,1 % of the rated CDM power and • 5W totally they shall be stated in the documentation at the operating point of rated power within a tolerance of ± 25 %, unless they are included in the CDM or PDS losses.The same applies to motion controllers or application options which are specifically intended to be used together with the drive.		
8.4.4	Losses in standby mode		P
	The manufacturer shall state the power losses in stand-by mode of the CDM and PDS within a tolerance of + 25 %.		
8.4.5	Losses in regenerative mode		P
	It shall be stated in the user's documentation whether a CDM or PDS is able to regenerate energy from the load to the mains or not. The manufacturer shall provide sufficient information in order for the system integrator to calculate the losses of the CDM or PDS in regenerative mode based on the regenerative topology supported by the CDM or PDS.		
9	**Type testing**		-
9.1	**General**		P

	The purpose of this Clause 9 is to define type tests which shall be done for the CDM to verify IE class and for the PDS to verify IES class. Loss determination methods for IE energy classes of CDM and IES classes of PDS are considered as type testing of CDM and PDS in this standard. Furthermore,determination procedures for CDM and PDS losses in partial load conditions are defined.		
9.2	**Type testing of CDM for IE classification**		P
	The manufacturer shall make type tests to define IE energy efficiency classes for CDM. IE energy efficiency classes are defined based on single operation point according to 7.1 and losses in this point shall be determined using one of the following options:		
9.3	**Type testing of PDS for IES classification**		P
	The manufacturer shall make type tests to define IES energy efficiency classes for PDS. IES energy efficiency classes are defined based on single operation point in 7.1 and losses in this point shall be determined by using one of the following options: PDS losses are determined according to 9.6. Power losses are determined based on input-output method according to 9.7. Testing procedure is given in 9.7.3.5 and testing conditions are described in 9.10.		
9.4	**Determination procedures for CDM and PDS losses in part load operation**		P
	The manufacturer shall state the power losses of the CDM or PDS according to the part load points as defined in 4.2. For the CDM, the losses shall be determined according to the same approach as for IE class determination in 9.2. The manufacturer shall state part load power losses for the CDM with uncertainties as described in Formula (30). For the PDS, the losses shall be determined according to same approach as for IES class determination in 9.3. The manufacturer shall state part load power losses for PDS with uncertainties as described in Formula (31).		
9.5	**Power loss calculations for CDM**		P
	For power loss determination of the CDM by calculation, the model presented in 5.2 can be used. The manufacturer is allowed to use an own calculation model to determine losses. Power loss simulations are allowed as well. Manufacturer is responsible to apply correct accuracies in Formula (30).The CDM power loss calculations have to be performed,with respect to component manufacturer'sdata		

	with typical values of power semiconductors at actual temperature when operating the CDM or at maximum operating temperature specified in the datasheet. The power losses affecting parameters are determined for the components of the CDM in the operating points required. If for components no manufacturer's data concerning power loss are available, they have to be evaluated by measurement. For some CDM components, losses are easily covered by measurements. Combination of measured and calculated losses is one possible way to determine losses for CDM. Finally, the different individual losses are calculated or measured separately and the total power losses of the CDM (PL,CDM.determined) are determined as the sum of all individual losses.		
9.6	**Power loss calculations for PDS**		P
	Power losses of the PDS can be determined by calculation according to Formula (27) and (28). When calculating PDS losses with a RCDM, no tolerances have to be added on CDM losses. If the PDS losses are calculated with the RM, tolerances according to EN 60034-1 shall be added to the final PDS.		
9.7	**Input-output measurement method**		-
9.7.1	Input-output measurement of CDM losses		P
	Input-output determination method for CDM losses is based on electrically measured powers at input and output of the CDM. Measurement setup is illustrated in Figure 19. The measured power losses of the CDM shall be calculated by using the following formula:		
9.7.2	Input-output measurement of PDS losses		P
	Input-output determination method for PDS losses is based on electrically measured electric power in input and mechanical power of PDS in output. Measurement setup is illustrated in Figure 20. Determined power loss of the PDS shall be calculated by using the formula		
9.7.3	Requirements for input-output measurement method		P
	When testing CDM or PDS under load, slow fluctuations in the output power and other measured quantities may be unavoidable. Therefore for each load point several measurements over a period of time (at least several slip cycles, typically 1 min to 3 min) shall be simultaneously sampled and the average of these values shall be used for the determination of losses.		

9.8	**Calorimetric measurement of CDM losses**		P
	In calorimetric measurements for CDM losses, the power losses are measured by means of cooling medium flow and temperatures. Measurement setup for determining CDM losses is presented in Figure 23. Required data is collected also from CDM operation state for documentation. Testing conditions are described in 9.9. Detailed test methods and procedures are described in Annex I.		
9.9	**Testing conditions for CDM testing**		P
	For the application of measurement methods, the test conditions and test procedure are of high importance for the results and for the reproducibility and comparability of different manufacturers and test laboratories. Due to this certain boundary conditions should be kept and documented or some others only be documented.		
9.10	**Testing conditions for PDS testing**		P
	Unless otherwise specified, PDSs having rated power below 20 kW shall be measured with a minimum 15 m shielded cable. If rating of motor cable for PDS is less than 15 m, the maximum cable length shall be used. For integrated PDS, there is no requirement for cable lengths.		

Photo of sample

LIST OF INSTRUMENTS				
NO	Equipment name	Type	Serial NO	period of validity
1	Digital AC Power Source	6200 series	Angui-004	2019.11.15
2	Radiation Tester	440RF/D	Angui-006	2019.12.9
3	Line Leakage Tester	7620	Angui-008	2019.11.14
4	Electrical Safety Compliance analyzer	7452	Angui-011	2019.11.14
5	Safely-testing instrument	ST-1001	Angui-012	2019.11.22
6	Digital display caliper	0.01 mm	Angui-014	2019.11.23
7	Dual display LCR instrument	ELC-131D	Angui-161	2019.11.22
8	Impact testing hammer	ST-1002	Angui-017	2019.11.29
9	Surge-insulation tester	NF2675	Angui-019	2019.9.19
10	Lecroy Storage Oscillocope	9304A	Angui-020	2019.11.7
11	Trillion-Ohm Instrument	ZC25B-3	Angui-022	2019.10.15
12	Digital temperature tester	DR030	Angui-024	2019.11.7
13	Program control combustion Instrument	CS-1	Angui-032	2019.11.29
14	Torque driver	RTD60CN	Angui-036	2019.11.23
15	Digital micrometer		Angui-013	2019.11.14
16	Pushing Tube-shaped ergometer	KL-10	Angui-038	2019.11.14
17	Noncontact thermometer	ST60	Angui-156	2019.11.14
18	Dynamometer	KL-2	Angui-040	2019.11.23

19	Dynamometer	TK-30	Angui-044	2019.11.23
20	Alternating Moisture testing instrument	SDJ020	Angui-050	2019.11.23
21	Measuring instrument for temperature raise of live windings	RC-3	Angui-150	2019.11.23
22	Audio analyzer	VP-7720A	YPL03-01	2019.11.14
23	FM/AM signal generator	VP-8179B10	YXH01-01	2019.11.14
24	FM/AM signal generator	VP-8179B10	YXH01-02	2019.11.14
25	Frequency counter	500A	YPL-05-01	2019.11.23
26	Muitiplex srereo modulator	VP-7633A	YQT23-01	2019.11.23
27	WOW flutter meter	MK-668E	YDBW03-01	2019.11.23

EC Declaration of conformity

Council Directive 2014/35/EU on Low Voltage Directive

DORNA Technology Co.,Ltd

No .99 Zhuangchi Middle Road,Ganyao Industrial Park,

Jiashan,Zhejiang China

Certify that the product described is in conformity with the Low Voltage Directive 2014/35/EU as amended

Product Name:

AC SERVO DRIVER

Item No:

See Annex

The product has been assessed by the application of the following standards:

EN 61800-9-2:2017

Issue place and date

Company stamp and Signature of authorized personnel

Annex

Model:

EPS-B2P-0D40AA-A000	DS1E-08AS
EPS-B2P-0D75AA-A000	DS1E-10AS
EPS-B2P-0001AA-A000	DS1E-15AS
EPS-B2P-01D5AA-A000	DS1E-10BS
EPS-B2P-0D10AA-A000	DS1E-15BS
EPS-B2P-0003AA-A000	DS1E-20BS
EPS-B2P-0002AA-A000	DS1E-30BS
DS1P-A5AS	DS1E-45BS
DS1P-01AS	DS1E-55BS
DS1P-02AS	DS1E-75BS
DS1P-04AS	DS2P-A5AS
DS1P-08AS	DS2P-01AS
DS1P-10AS	DS2P-02AS
DS1P-15AS	DS2P-04AS
DS1P-10BS	DS2P-08AS
DS1P-15BS	DS2P-10AS
DS1P-20BS	DS2P-15AS
DS1P-30BS	DS2E-A5AS
DS1P-45BS	DS2E-01AS
DS1P-55BS	DS2E-02AS
DS1P-75BS	DS2E-04AS
DS1E-A5AS	DS2E-08AS
DS1E-01AS	DS2E-10AS
DS1E-02AS	DS2E-15AS
DS1E-04AS	

Notice

1. This test report shall be invalidation without the cachet of the testing laboratory.
2. This copied report shall be invalidation without sealed the cachet of the testing laboratory.
3. This report shall be invalidation without tester signature.
4. This altered report shall be invalidation.
5. Client shall put forward demurrer within 15 days after received report. The testing laboratory shall refuse disposal if exceeded the time limit.
6. The test results presented in this report relate only to the object tested.
7. This report is only applicable to CE certificate application.