

TEST RECORD NO. 1

## SAMPLES:

Representative production samples of the Ex9S32A Series Type F Combination Motor Controllers, as indicated below and constructed as described herein, was submitted by the manufacturer for examination and test in accordance with UL 60947-4-1, the Standard for Low Voltage Switchgear and Controlgear - Part 4-1: Contactors and Motor-Starters - Electromechanical Contactors and Motor-Starters.

Open Type, Type F Combination Motor Controller:

Ex9, followed by S, followed by 32, followed by A, followed by 0.16A, 0.25A, 0.4A, 0.63A, 1A, 1.6A, 2.5A, 4A, 6.3A, 10A, 14A, 18A, 23A, 25A, or 32A

## GENERAL:

Test results relate only to the items tested.

The following tests were conducted with the line side terminal spacing adapter kit CCT51 (NKJH Listed Accessory), the short-circuit trip indicator AL51111 (NKJH Listed Accessory), and applicable connection module / mounting brackets as described within the table below (NKJH Listed Accessories) installed.

## Type F - Combination Motor Controller Testing:

ITEM	TEST	Ex9S32A UNIT TESTED	CONNECTION MODULE UTILIZED	CONTACTOR UTILIZED	MOUNTING BRACKET UTILIZED	DATASHEET (S) NUMBER	UL60947-4-1 Reference
Sequence 1							
1-1	Temperature	10 A	CC51	Ex9CS12	-	1	DVC.5.1.1
		14 A	CC52	Ex9C18	DRA51	2	
		32 A	CC53	Ex9C32	DRA51	3	
1-2	Overvoltage and Undervoltage	10 A	CC51	Ex9CS12	-	1	9.3.3.2.2
		14 A	CC52	Ex9C18	DRA51	2	
		32 A	CC53	Ex9C32	DRA51	3	
1-3	Dielectric Voltage Withstand	10 A	CC51	Ex9CS12	-	1	9.3.3.4
		14 A	CC52	Ex9C18	DRA51	2	
		32 A	CC53	Ex9C32	DRA51	3	
Sequence 2							
2-1	Calibration	0.16 A	CC51	Ex9CS12	-	4	9.3.3.2.2
		10 A	CC51	Ex9CS12	-	4	
		14 A	CC52	Ex9C18	DRA51	4	
		32 A	CC53	Ex9C32	DRA51	4	
2-2	Current Withstand	Test was waived as the Type F combination controller employs a manual Type E combination controller with integral thermal-magnetic trips.					DVC.5.1.5

(Table cont'd)

ITEM	TEST	Ex9S32A UNIT TESTED	CONNECTION MODULE UTILIZED	CONTACTOR UTILIZED	MOUNTING BRACKET UTILIZED	DATASHEET (S) NUMBER	UL60947-4-1 Reference
2-3	Dielectric Voltage Withstand	0.16 A	CC51	Ex9CS12	-	4	9.3.3.4
		10 A	CC51	Ex9CS12	DRA51	4	
		14 A	CC52	Ex9C18	DRA51	4	
		32 A	CC53	Ex9C32	DRA51	4	
Sequence 3							
3-1	Standard Fault Short Circuit	0.16 A	CC51	Ex9CS12	-	5	DVC.5.1.11
		10 A	CC51	Ex9CS12	-	5	
		14 A	CC52	Ex9C18	DRA51	5	
		32 A	CC53	Ex9C32	DRA51	5	
3-2	Dielectric Voltage Withstand	0.16 A	CC51	Ex9CS12	-	5	9.3.3.4
		10 A	CC51	Ex9CS12	-	5	
		14 A	CC52	Ex9C18	DRA51	5	
		32 A	CC53	Ex9C32	DRA51	5	
Sequence 4							
4-1	Contactor Overload	10 A	CC51	Ex9CS12	-	6	DVC.5.1.2
		10 A	CC52	Ex9C12	DRA51	6	
		14 A	CC52	Ex9C18	DRA51	6	
		32 A	CC53	Ex9C32	DRA51	7	
4-2	Dielectric Voltage Withstand	10 A	CC51	Ex9CS12	-	6	9.3.3.4
		10 A	CC52	Ex9C12	DRA51	6	
		14 A	CC52	Ex9C18	DRA51	6	
		32 A	CC53	Ex9C32	DRA51	7	
Sequence 5							
5-1	High Fault Short Circuit	0.16 A	CC51	Ex9CS12	-	8	9.3.4.2.2
		10 A	CC51	Ex9CS12	-	8	
		14 A	CC52	Ex9C18	DRA51	8	
		32 A	CC53	Ex9C32	DRA51	8	
5-2	Voltage Withstand	0.16 A	CC51	Ex9CS12	-	8	DVC.5.1.7
		10 A	CC51	Ex9CS12	-	8	
		14 A	CC52	Ex9C18	DRA51	8	
		32 A	CC53	Ex9C32	DRA51	8	

All testing within the table above (Sequences 1 - 5) was conducted under UL's Witness Test Data Program (WTDP) and was performed at Zhejiang Fangyuan Electrical Equipment Testing Co. Ltd., No. 400 Guangqiong Road, Jiaxing City, Zhejiang Province, China.

Test Record Summary:

The results of this investigation, including construction review and testing, indicate that the products evaluated comply with the applicable requirements in:

- UL 60947-1, Low-Voltage Switchgear and Control-Gear - Part 1: General Rules, 5<sup>th</sup> Edition, Issued 2013-07-31
- UL 60947-4-1, Low-Voltage Switchgear and Control-Gear - Part 4-1: Contactors and Motor-Starters - Electromechanical Contactors and Motor-Starters, 3<sup>rd</sup> Edition, Issued 2017-10-17
- CSA C22.2 NO. 60947-1-13, Low-Voltage Switchgear and Control-Gear - Part 1: General Rules, 2<sup>nd</sup> Edition, Issued 2013-07-31
- CSA C22.2 NO. 60947-4-1-14, Low-Voltage Switchgear and Control-Gear - Part 4-1: Contactors and Motor-Starters - Electromechanical Contactors and Motor-Starters, 2<sup>nd</sup> Edition, Issued 2014-04-04

and, therefore, such products are judged eligible to bear UL's Mark as described on the Conclusion Page of this Report.

Any information and documentation involving UL Mark services are provided on behalf of UL LLC (UL) or any authorized licensee of UL.

## CONCLUSION

Samples of the products covered by this Report have been found to comply with the requirements covering the category and the products are found to comply with UL's applicable requirements. The description and test result in this Report are only applicable to the sample(s) investigated by UL and does not signify UL certification or that the product(s) described are covered under UL's Follow-Up Service Program. When covered under UL's Follow-Up Service Program, the manufacturer is authorized to use the Certification Mark of UL on such products which comply with UL's Follow-Up Service Procedure and any other applicable requirements of UL LLC. The Certification Mark of UL on the product, or the UL symbol on the product and the Certification Mark of UL on the smallest unit container in which the product is packaged, is the only method to identify products investigated by UL to published requirements and manufactured under UL's Listing and Follow-Up Service.

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