### **Application Note**



### Motion test with EGIL200

Learn how to set up the EGIL200 for testing a motion measurement. This application note includes transducer example for relative measurement with common mechanism, with both analogue and digital types. A printout from the motion test is also presented.

#### **Option for motion measurement**

Motion can be measured in different ways with use of different types of transducers, channels and with different ways to calibrate. Common operation can be used for all phases, or separate per phase. Type of channels to use can be analogue or digital/incremental.

Selection of "Relative" or "Absolute":

Relative measurement = The breakers nominal stroke is used as reference for the measurement. Absolute measurement = The contact movement is equal to the transducer's movement.

#### Test procedure with digital transducer:



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### Test procedure with analogue transducer:

NOTE! The above are examples of connections with motion transducer.

For more information about our accessories for different transducers, download the brochure: <u>Circuit breaker testing accessories</u> from <u>www.megger.com</u>

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### **Settings on EGIL200**

To set up the motion transducers

- 1. From the Test menu.
- 2. Click the "Mechanism" button to select "Common".
- 3. Click the "Motion" button.



#### "Test menu"

- 4. Set the "Contact motion" for one common transducer.
- 5. Select "Analog" for Analogue transducers or "Digital" for digital transducers. Select "Relative" or "Absolute" measurement.
- 6. Set circuit breaker stroke value (for Relative mode). In this example, 80 mm.
- 7. Set desired calculation points for the velocity in closing and open operation. If you have no details, use the programs preset option.

### Start the test

Click on the <sup>connections</sup> button on left side in menu. Check connections.

Turn the rotary switch to "Operate & Measure" to make a test.

EGIL200 will present the test result direct and automatically, or by clicking on the latest test on the table next (left) to the graph.

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### **Test report**

Below is the report from the motion test. Coil current is also included.

			Te	str	eport			
Date		2023	-01-05		Time		16:01:27	
Test ID		_A1			Type of test		Motion	
Operator		Erics	on		Reference			
Operation coun	ter	0						
Evaluation	settings							
Main contact threshold 10000 Ω				Resistor contact t	hreshold	shold 10 Ω		
Auxiliary conta	ct threshold	10 V			Resistor contact		×	
Notion mea	surement	prefere	ences					
II Obje	t ID Relative	Nomina	I s Angular	Conve	rsion table Convers	ion constant	Angle to a	distance
1 C	×	6.0	×		1		×	
losing spe	ed calcula	tion pc	oints		1		<sup>^</sup>	
# Upper point				Lower point				
1 Distance above open position 5.0 mm				Percentage of stroke below closed position 80.00 %			80.00 %	
Opening sp	eed calcul	ation p	oints					
# Upper point					Lower point			
1 Distance abo	ve open positio	'n		1.0 mm	Percentage of stroke	e below closed	position	80.00 %
Breaker inf	io							
D1 2023-01-05					ID 2		15:59:57	
ID 3	D 3 bigbang				ID 4	ID 4 YARD		
Serial number 1234				Number of interru	upters per 1			
Common orese	ting mechanic	m 🖌			pricese			
common opera	And STOCKING INC.				Number of phases	1	3	
Time unit	and meending	ms			Length unit	•	3 mm	
Time unit Pressure unit	moundills	ms kPa			Number of phases Length unit speedUnit	\$	3 mm m/s	
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Tmg Cls # Pressure unit Date Parameter: No. 3 10 1 60 22	1 S ID Close time Diff A-B-C Close time Bounce t Penetr.	20	023-01-05 A 60.3 0.55 16.7	150 i0	Number of phases Length nult speedUnit Time B 60.850 0.650 0.650 0.650 0.000 13.9	60.200 0.450 17.5	3 mm m/s 16:01 U mm mm mm mm	227 nit S S S S S S S M
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Coil current

Motion curve

