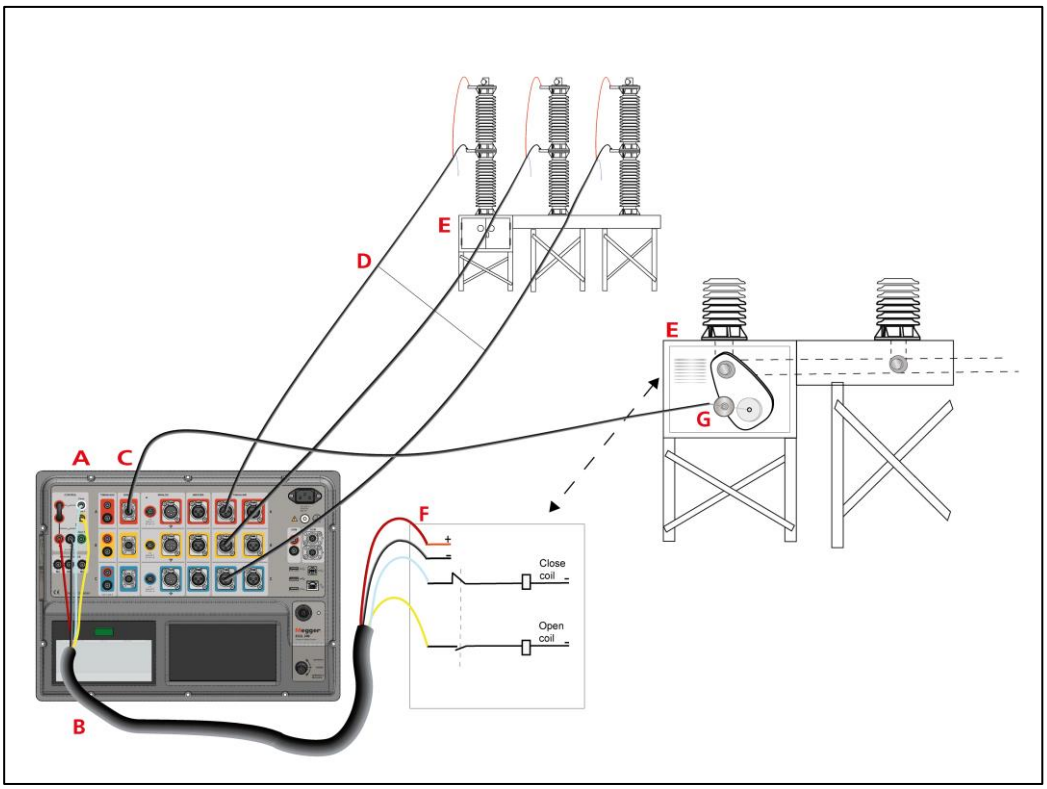
Motion test with EGIL200

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

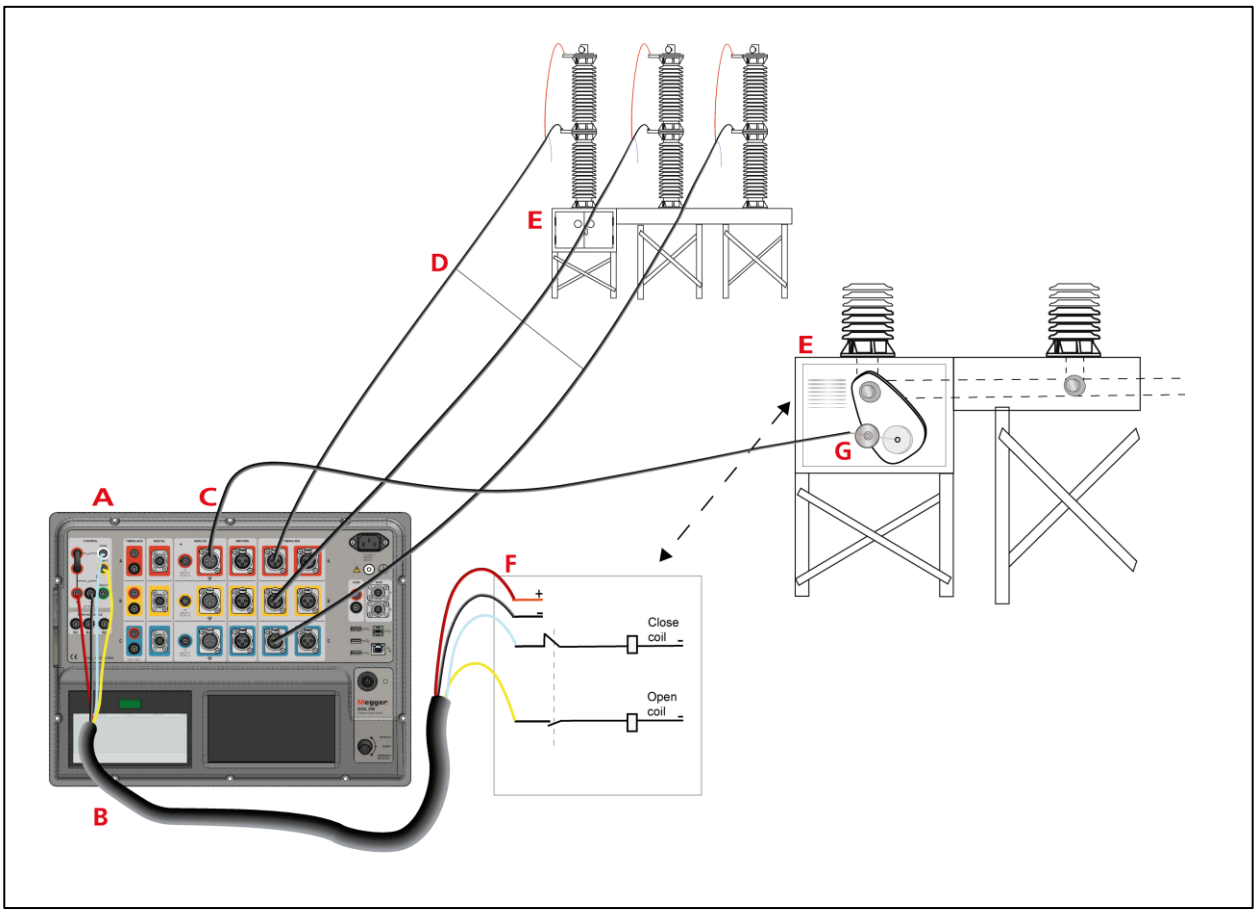
Motion can be measured in different ways with use of different types of transducers, channels and with different ways to calibrate. Common operation can be used for all phases, or separate per phase. Type of channels to use can be analogue or digital/incremental.
Selection of “Relative” or “Absolute”: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



A	EGIL200		**E**	Circuit breaker	**G**	Digital transducer	XB-39215
B	Control cables kit	GA-90002	**F**	Control circuit			
C	Digital cable	GA-00891					
D	Cable Timing MAIN	GA-00853 or 3 pcs. GA-00854					

Test procedure with analogue transducer:



A	**EGIL200**		**E**	**Circuit breaker**	**G**	Analogue transducer	XB-31010
B	Control cable kit	GA-90002	**F**	**Control circuit**			
C	Analogue cable	GA-01005					
D	Cable timing MAIN	GA-00853 or 3pcs. GA-00854					

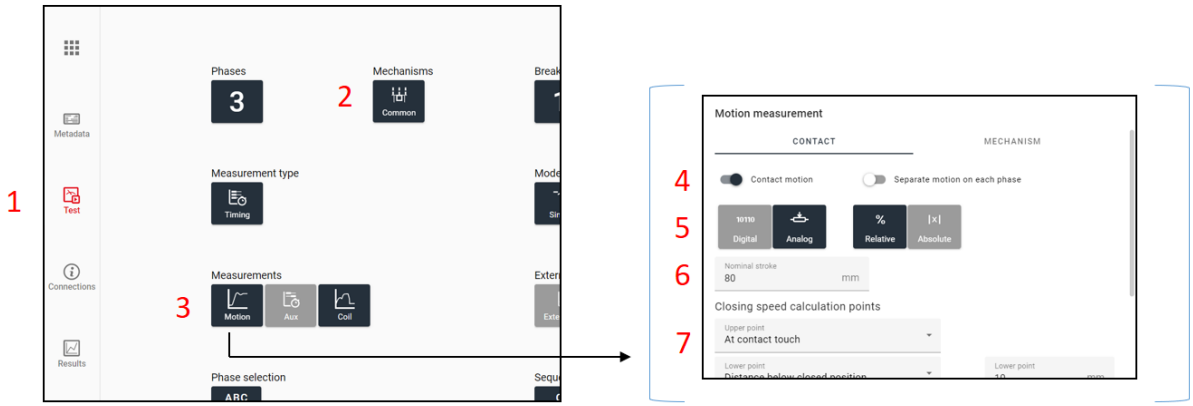
NOTE! The above are examples of connections with motion transducer.

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

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 Connections 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.

Test report

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

Test report

Date	2023-01-05	Time	16:01:27
Test ID	A1	Type of test	Motion
Operator	Ericson	Reference	
Operation counter	0		

Evaluation settings

Main contact threshold	10000 Ω	Resistor contact threshold	10 Ω
Auxiliary contact threshold	10 V	Resistor contact	✗

Motion measurement preferences

#	Object ID	Relative	Nominal s	Angular	Conversion table	Conversion constant	Angle to distance
1	C	✗	6.0	✗		1	✗
2	O	✔	100.0	✗		1	✗

Closing speed calculation points

#	Upper point		Lower point	
1	Distance above open position	5.0 mm	Percentage of stroke below closed position	80.00 %

Opening speed calculation points

#	Upper point		Lower point	
1	Distance above open position	1.0 mm	Percentage of stroke below closed position	80.00 %

Breaker info

ID 1	2023-01-05	ID 2	15:59:57
ID 3	bigbang	ID 4	YARD
Serial number	1234	Number of interrupters per phase	1
Common operating mechanism	✔	Number of phases	3
Time unit	ms	Length unit	mm
Pressure unit	kPa	speedUnit	m/s

Tmg Cls #1

Date	2023-01-05	Time	16:01:27

Parameters

No.	ID	A	B	C	Unit
3	Close time		60.850		ms
10	Diff A-B-C		0.650		ms
1	Close time	60.350	60.850	60.200	ms
60	Bounce t	0.550	0.000	0.450	ms
22	Penetr.	16.7	13.9	17.5	mm
268	Cls time a AUXa		60.050		ms
272	Diff M-a AUXa		-0.800		ms
270	Opn time b AUXb		52.800		ms
274	Diff M-b AUXb		-8.050		ms
404	C contr. V CCMD1		23.3		V
53	Pk current CCIR1		0.7		A
16	Cls speed		2.000		m/s
19	Stroke		66.9		mm
25	Overtravel		2.1		mm
51	Rebound		0.1		mm