

# Circuit breaker testing

## Accessories

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# Megger

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Item	Description	TM1800	TM1700	TM1600	EGIL	Art. No.
<b>Cables</b>						
<i>Analogue Input XLR/Banana</i>	 <p data-bbox="686 604 1189 660">XLR female / 4 mm safety plugs, 1 m (3.3 ft). For customized analog transducer connection</p>	X	X	X	X	GA-00040
<i>Cable Analogue XLR/open ends</i>	 <p data-bbox="686 907 1189 940">XLR female / open ends, 1 m (3.3 ft)</p>	X	X	X	X	GA-00041
<i>Extension cable Analogue Input</i>	 <p data-bbox="686 1164 1189 1220">For analog input, XLR3 female / XLR3 male Analog cable EGIL/TM, 7.5 m (24.6 ft)</p>	X	X	X	X	GA-00042
<i>Transducer cable, XLR / IP / TS</i>	 <p data-bbox="686 1467 1189 1500">NOVOTECHNIC IP/TS, 1 m (3.3 ft)</p>	X	X	X	X	GA-00044
<i>Transducer cable, XLR / TLH / LWH</i>	 <p data-bbox="686 1747 1189 1780">NOVOTECHNIC TLH/LWH, 0.5 m (1.6 ft)</p>	X	X	X	X	GA-00049
<i>Transducer cable XLR / LWG</i>	 <p data-bbox="686 2027 1189 2060">NOVOTECHNIC LWG/M12, 0.5 m (1.6 ft)</p>	X	X	X	X	GA-00050

Item	Description	TM1800	TM1700	TM1600	EGIL	Art. No.
Cable Current clamp						
	For current clamp, BNC / XLR3, 0.3 m (1 ft)	X	X	X	X	GA-00140
Cable, extension EGIL Timing MAIN						
	Extension cable for time measurement of main contacts, XLR5 female / XLR5 male 10 m (32.8 ft)				X	GA-00150
	5 m (16.4 ft)				X	GA-00155
Cable, EGIL Timing						
	Timing 5 m (16.4 ft) XLR5 / 4 mm banana incl. clamps				X	GA-00160
Cable, EGIL Timing AUX						
	AUX1&2, timing 2 m (6.5 ft) XLR5 / 4 mm banana excl. clamps				X	GA-00170
Cable, EGIL Voltage sense						
	SDRM Voltage sense cable incl. clamps, 2 m (6.5 ft)				X	GA-00175
Cable set, Timing TM1800 AUX TM1700 AUX TM1600 MAIN TM1600 AUX						
	The cable sets consist of 8 cables with clamps and 4 mm stackable safety plugs. For timing of CB contacts.					
	5 m (16.4 ft)	X	X	X		GA-00231
	10 m (32.8 ft)	X	X	X		GA-00241
	15 m (49.2 ft)	X	X	X		GA-00251
	20 m (65.6 ft)	X	X	X		GA-00261
	25 m (82 ft)	X	X	X		GA-00271
	40 m (131 ft)	X	X	X		GA-00281







Item	Description	TM1800	TM1700	TM1600	EGIL	Art. No.
<p>SCA600/Coax. Cable</p> 		X	X	X		GA-00750
<p>Extension cable Analogue input</p> 	<p>XLR female/XLR male 1 m (3.3 ft)</p>	X	X	X	X	GA-00760
<p>Cable reel</p> 	<p>20 m (65.5 ft), 4 mm stackable safety plugs</p> <p>Black</p> <p>Red</p> <p>Yellow</p> <p>Green</p> <p>Blue</p>	X	X	X	X	GA-00840
<p>Cable Timing MAIN</p> 	<p>Timing M/R XLR3 male / banana, 5 m (16.4 ft), Length of the split portion (retractable sock), 2.4 m (8 ft) to 3.8 m (12 ft)</p>	X	X			GA-00850
<p>Extension cable Timing MAIN</p> 	<p>For Timing M/R modules, XLR3 male / XLR3 female, 10 m (32.8 ft)</p>	X	X			GA-00851
<p>Adapter for Doble digital transducer</p> 	<p>For Doble transd. (Use with GA-00895)</p>	X	X			GA-00867


Item	Description	TM1800	TM1700	TM1600	EGIL	Art. No.
Adapter for Siemens digital transducer						
	For Siemens digital transducer	X	X			GA-00868
Adapter for Vanguard digital transducer						
	For Vanguard transd. (Use with GA-00895)	X	X			GA-00869
Cable Timing AUX	 <p data-bbox="687 1070 970 1178">Including: 4 Adapter for terminal block 4 Cable lug adapter 1 Cable, 5 m, (16.4 ft)</p>					
		X	X			GA-00870
Digital transducercable						
	For customized digital transducer connection RS422, SUB-D15 / open ends, 10 m (33 ft)	X	X			GA-00885
Digital transducer extension cable						
	RS422, SUB-D15 / SUB-D15, 10 m (33 ft)	X	X			GA-00888
Cable Digital TP1 and Rotary EIL						
	NOVOTECH Digital TP1 and Rotary Baumer EIL transducer cable, D-SUB 15 / M12					
	20 m (66 ft)	X	X			GA-00887
	10 m (33 ft)	X	X			GA-00889

Item	Description	TM1800	TM1700	TM1600	EGIL	Art. No.
Adapter for Elcon digital transducer	For using Leine & Linde 530 digital transducer, 10 m (33 ft)	X	X			GA-00890
Baumer digital cable	 For using Baumer BDH16.05A3600-LO-B, digital transducer, 10 m (33 ft)	X	X			GA-00895
Heidenhein digital cable	Digital transducer cable, Heidenhein, 10 m (33 ft)	X	X			GA-00900
Ethernet cable, network	Cable for connection to network/LAN, RJ45	X	X			GA-00970
TM1700/1800 DCM extension cable	1 DCM extension cable, DIN 6, 10 m (33 ft) Old type	X	X			GA-00998
	1 DCM extension cable, DIN 7, 10 m (33 ft) Actual type. See "TM1700/1800 DCM Extension cable" on page 9	X	X			GA-00999
Open analog cable	 For customized analog transducer connection, 1 m (3.3 ft)	X	X	X	X	GA-01000
Extension cable Analogue Input	 For analog input, XLR3 female / XLR3 male Analog cable EGIL/TM, 10 m (33 ft)	X	X	X	X	GA-01005
Cable for AnaDig 10	 Optional Cable for AnaDig 100, 1 m (3 ft)	X	X			GA-01008
Cable kit Control	Control kit for three phases <b>Including:</b> 5 Test clip 5 Adapter for terminal block 5 Cable lug adapter 5 5 m (16 ft) 2 0.25 m (10") 2 Jumper 1 Plastic box	X	X			GA-90002


Item	Description	TM1800	TM1700	TM1600	EGIL	Art. No.
<p><i>HV Timing cable kit</i></p> 	<p>For Timing M/R modules, XLR3 male / XLR3 female 5 Cable, 10 m (32.8 ft) GA-00851</p>	X	X			GA-90005
<p><i>Connection kit for Control cables"</i></p> 	<p><i>Including:</i> 5 Test clip 5 Adapter for terminal block 5 Cable lug adapter 1 Plastic box</p>	X	X	X	X	GA-90010









Item	Description	TM1800	TM1700	TM1600	EGIL	Art. No.
<b>DCM – DualGround</b>						
<i>DCM</i>	 <p>DCM TM1700 DualGround Timing</p> <p>3- channels <b>Including:</b> 1 DCM Upgrade cable kit CG-19180 X BL-59190</p> <p>6-channels <b>Including:</b> 2 DCM Upgrade cable kit CG-19180 X BL-59192</p>					
<i>TM1700/1800 DCM Upgrade cable kit</i>	 <p>Cables for 3 channels addition DualGround upgrade from 3 to 6 channels Length of the 2-cable portion, 1.5 m (5 ft) <b>Including:</b> 3 DCM cable, 12 m (39 ft) 6 Clamp</p>	X	X			CG-19180
<i>TM1700/1800 DCM Extension cable kit</i>	 <p>DualGround cable, DIN 7, extension for 3 channels 10 m (33 ft) (3 x GA-00999)</p>	X	X			CG-19181
<i>DCM - TM1800</i>	 <p>Module for TM1800</p> <p>DCM Module 3 DCM cables, 12 m (39 ft) DCM to Timing M/R cable GA-12900 6 Timing clamps KD-03040 Accessory bag GD-31040 X CG-19190</p> <p>DCM Module 6 DCM cables, 12 m (39 ft) DCM to Timing M/R cable GA-12900 12 Timing clamps KD-03040 Accessory bag GD-31040 X CG-19192</p>					
<i>DCM Span extension cable</i>	 <p>Cable to extend the span in the TM1700/1800 DCM BNC / BNC, 2 m (6.6 ft)</p>	X	X			GA-00720
<i>DCM Cable link</i>	 <p>DCM to Timing M/R</p>	X				GA-12900


Item	Description	TM1800	TM1700	TM1600	EGIL	Art. No.
<b>Software</b>						
CABA Win						
	For TM1700/1800, incl. Ethernet cross-over cable	X	X			CG-8000X
	For TM1600, incl. fiberoptics and USB interface			X		BL-8203X
	For EGIL, incl. USB cable				X	BL-8206X
	Upgrade to R04D	X	X	X	X	CG-8010X
	Upgrade to R05, including Test Plan Editor (TPE)	X	X	X	X	CG-8040X

Item	Description	TM1800	TM1700	TM1600	EGIL	Art. No.
<b>Application kits</b>						
<i>First trip kit</i>						
	For single operating mechanism, 1 + 3 clamps	X	X			BL-90700
	For three operating mechanisms, 3 + 3 clamps	X	X			BL-90710
<i>Synchro Switch Relay kit</i>						
	Synchronized Switching Relay test kit incl. accessories, software and cables (delivered in transport case)					
	SSR kit for TM 1700/1800	X	X			CG-91200
	SSR for TM1600 (incl. VD401)			X		BL-91200
<i>Transducer calibration kit</i>						
	Plate XB-39022 not included					
		X	X	X	X	XB-39095
<i>Vibration kit</i>						
	The Vibration kit extends TM1800/TM1700/TM1600 and CABA Win with the equipment and software required for recording and analyzing vibration signals at a circuit breaker. The kit includes the signal conditioning unit SCA606, the software CABA Win Vibration and one vibration channel. The vibration solution can be extended up to 6 channels.					
		X	X	X		BL-13090

Item	Description	TM1800	TM1700	TM1600	EGIL	Art. No.
<p>Vibration channel</p> 	<p>Additional vibration channel to be used together with the Vibration kit. Each Vibration channel includes accelerometer, accelerometer adapter, cables to SCA606 and cables to TM1800/TM1700/TM1600*.</p>	X	X	X		XB-32010






Item	Description	TM1800	TM1700	TM1600	EGIL	Art. No.
<b>Static and dynamic resistance measurement</b>						
SDRM201 EGIL	  GB-03430					
	<b>Included accessories:</b> SDRM Cable GB-03430 SDRM multi cable extension GA-12815 Voltage sense GA-00175 Voltage sense extension cable GA-00150 Current cable (red) GA-12820 Current cable (black) GA-12830 Clamps (2 pcs) KD-03040 Ground cable, 2.5 mm <sup>2</sup> , 10 m (33 ft) GA-00208 Charger HC-04210 Accessory bag GD-31040 Case GD-00222				X	CG-90250
SDRM202	<b>Included accessories</b> SDRM Cable for TM1700/1800 GB-03411 SDRM multi cable extension, 7.5 m (24.6 ft) GA-12815 Current cable, red, 2pcs, 3 m (9.8 ft) GA-12820 Current cable, black 2 pcs, 0.5 m (1.6 ft) GA-12830 Ground cable, 2.5 mm <sup>2</sup> 10 m (33 ft) GA-00208 Charger HC-04210 Accessory bag GD-31040 Case GD-00222	X	X			CG-90200
	Pack of 3 units (CG-90200) for circuit breaker with 2 Breaks/Phase	X	X			CG-90230
	 SDRM Cable for TM1600 GB-03421 SDRM multi cable extension, 7.5 m (24.6 ft) GA-12815 Current cable, red, 2 pcs, 3 m (9.8 ft) GA-12820 Current cable, black 2 pcs, 0.5 m (1.6 ft) GA-12830 Ground cable, 2.5 mm <sup>2</sup> 10 m (33 ft) GA-00208 Charger HC-04210 Cable XLR/Banana 2 pcs. GA-00040 Accessory bag GD-31040 Case GD-00222				X	CG-90210
	SDRM Cable for EGIL GB-03430 SDRM multi cable extension, 7.5 m (24.6 ft) GA-12815 Voltage sense cable, 2 m (6.5 ft) GA-00175 Voltage sense extension cable, 10 m (33 ft) GA-00150 Current cable, red, 2pcs, 3 m (9.8 ft) GA-12820 Current cable, black 2 pcs, 0.5 m (1.6 ft) GA-12830 Clamps (2 pcs) KD-03040 Ground cable, 2.5 mm <sup>2</sup> 10 m (33 ft) GA-00208 Charger HC-04210 Accessory bag GD-31040 Case GD-00222				X	CG-90220




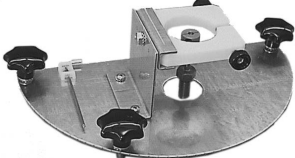


Item	Description		TM1800	TM1700	TM1600	EGIL	Art. No.
<b>SDRM202 Cable</b> 	SDRM Cable for TM1700/1800 <b>Including:</b> Accessory bag	GD-31040	X	X			CG-90205
	SDRM Cable for TM1600 <b>Including:</b> Accessory bag Cable XLR/Banana 2 pcs.	GD-31040 GA-00040			X		CG-90215
	SDRM Cable for EGIL <b>Including:</b> Voltage sense extension cable 10 m (33 ft) Accessory bag	GA-00150 GD-31040					
	<b>SDRM Cable (CG-90205)</b> Voltage sense cable, 2 m (6.5 ft) Clamps 2 pcs)	GA-00175 KD-03040				X	CG-90225
<b>Extension cable, SDRM201/202</b> 	Extension cable for CG-90200 and CG-90210 10 m (33 ft)		X	X	X	X	GA-12810
	7.5 m (24.6 ft)		X	X	X	X	GA-12815
<b>Current cables and clamps for SDRM202</b> 	Cable, red 2.5 m (8.2 ft)		X	X	X	X	GA-12820
	Cable, black, 0.5 m (1.6 ft)		X	X	X	X	GA-12830
	Clamps (2 pcs)		X	X	X	X	KD-03040

Item	Description	TM1800	TM1700	TM1600	EGIL	Art. No.
<b>Transducers</b>						
<b>Linear</b>						
<b>Analog</b>						
<i>TLH-150</i>	150 mm (5.9") travel <sup>1)</sup>	X	X	X	X	XB-30016
<i>TLH-225</i>	225 mm (8.8") travel <sup>1)</sup>	X	X	X	X	XB-30017
<i>TLH-500</i>	500 mm (19.7") travel <sup>1)</sup>	X	X	X	X	XB-30020
<i>TLH-750</i>	750 mm (29.5") travel <sup>1)</sup>	X	X	X	X	XB-30022
<i>TLH-1000</i>	1000 mm (39.4") travel <sup>1)</sup>	X	X	X	X	XB-30023
	<sup>1)</sup> Including cable, 0.5 m (20") GA-00049					
<i>LWG 150</i>	150 mm (5.9") travel <sup>2)</sup>	X	X	X	X	XB-30116
<i>LWG 225</i>	225 mm (8.8") travel <sup>2)</sup>	X	X	X	X	XB-30117
<i>LWG 500</i>	500 mm (19.7") travel <sup>2)</sup>	X	X	X	X	XB-30120
	<sup>2)</sup> Including cable, 0.5 m (20") GA-00050					
<i>TS 150</i>	150 mm (5.9") travel <sup>3)</sup>	X	X	X	X	XB-30030
<i>TS 50</i>	50 mm (1.9") travel <sup>3)</sup>	X	X	X	X	XB-30031
<i>TS 25</i>	25 mm (1") travel <sup>3)</sup>	X	X	X	X	XB-30033
	<sup>3)</sup> Including cable, 1 m (39") GA-00044					
<b>Digital</b>						
<i>Linear transducer TP1 300 mm</i>	NOVOTECHNIC TP1 (Highspeed design for Megger) 300 mm (11.8") travel <b>Including:</b> Cable 10 m (33 ft)	X	X			XB-39140
	Cable 20 m (66 ft)	X	X			XB-39145
<i>Linear transducer TP1 500 mm</i>	NOVOTECHNIC TP1 (Highspeed design for Megger) 500 mm (19.7") travel <b>Including:</b> Cable 10 m (33 ft)	X	X			XB-39150
	Cable 20 m (66 ft)	X	X			XB-39155
The above transducers are also available in other lengths, please contact Megger for more information.						
<i>Touchless linear digital transducer (kit)</i>	 <b>Including:</b> Magnetic band, 2 m (6 ft), XB-39250 Touchless linear digital transducer, SIKO, XB-39237 Cable, 10 m (33 ft), GA-00889 Clamping base, XB-39014 Flexible arm, XB-39012	X	X			XB-39230
<b>Rotary</b>						
<b>Analog</b>						

Item	Description	TM1800	TM1700	TM1600	EGIL	Art. No.
<p><i>Transducer kit</i></p> 	<p>Novotechnic IP6501  <b>Including:</b>            Cable, 1 m (39"),            Flex coupling, 6 mm            Hexagon wrench</p>	X	X	X	X	XB-31010
<p><b>Digital</b></p>	<p><i>Transducer kit</i></p>		<p>Baumer EIL580-SC10.5RH.03600.A  <b>Including:</b>            Flex coupling, 10/6 mm            Hexagon wrench            With Cable, 10 m (33 ft)            With Cable, 20 m (66 ft)</p>	X	X	XB-39130
<p><b>Transducer accessories</b></p>	<p><i>Slider</i></p>		<p>Slider for linear transducer TP1</p>	X	X	XB-39199










Item	Description	TM1800	TM1700	TM1600	EGIL	Art. No.
<b>Transducer mounting kits</b>						
<b>Universal kits</b>						
<i>TLH/LWG kit</i>						
	For use with linear transducers (TLH/LWH)	X	X	X	X	XB-39065
<i>Transducer kit 500/600 mm</i>						
	Single phase, Analog, Linear, 500 mm (19.7")	X	X	X	X	XB-40101
	Single phase, Analog, Linear, 600 mm (23.6")	X	X	X	X	XB-40102
	Single phase, Digital, Linear, 500 mm (19.7")	X	X			XB-40105
	Single phase, Digital, Linear, 600 mm (23.6")	X	X			XB-40106
<i>Transducer kit 300 mm</i>						
	Single phase, Analog, Linear, 300 mm (11.8")	X	X	X	X	XB-40103
	Single Phase, Digital, Linear, 300 mm (11.8")	X	X			XB-40107
						
	3 phase, Analog, Linear, 300 mm (11.8")	X	X	X		XB-40104
	3 Phase, Digital, Linear, 300 mm (11.8")	X	X			XB-40108
<i>Transducer kit w/o transducer</i>	Single phase, Analog, Linear, 500-600 mm (19.7"-23.6")	X	X	X	X	XB-40110
	Single phase, Analog, Linear, 300 mm (11.8")	X	X	X	X	XB-40111
	3 phase, Analog, Linear, 300 mm (11.8")	X	X	X		XB-40112
	Single Phase, Digital, Linear, 500-600 mm (19.7"-23.6")	X	X			XB-40113
	Single Phase, Digital, Linear, 300 mm (11.8")	X	X			XB-40114
	3 Phase, Digital, Linear, 300 mm (11.8")	X	X			XB-40115
<i>Rotary transducer mounting kit</i>						
	For transducers XB-31010 and XB-39130					
	<b>Including:</b>					
	Clamping base					XB-39014
	Flexible arm					XB-39021
	Holder for angular transducer					XB-39022
	Plastic transport case					XB-39023
	Adapter M6/6 2 Nuts M6					XB-39025
	Adapter M8/6 2 Nuts M8					XB-39026
	Adapter M10/6 2 Nuts M10					XB-39027
	Adapter M12/6 2 Nuts M12					XB-39028
Holder for dig. rotary EIL and linear LWG, Ø 36 mm	X	X	X	X	XB-39005	

Item	Description	TM1800	TM1700	TM1600	EGIL	Art. No.
<b>Universal transducer mounting kit</b> 	For linear and rotary transducers <b>Including:</b> Magnetic base XB-39013 Clamping base XB-39014 Flexible arm XB-39021 Holder for angular transducer XB-39022 Plastic transport case XB-39023 Adapter M6/6 2 Nuts M6 XB-39025 Adapter M8/6 2 Nuts M8 XB-39026 Adapter M10/6 2 Nuts M10 XB-39027 Adapter M12/6 2 Nuts M12 XB-39028 Universal support XB-39029 Holder for dig. rotary EIL and linear LWG, Ø 36 mm XB-39005					
<b>AnaDig 100</b> 	Analog to Digital converter for transducers	X	X	X	X	XB-51020
<b>Universal adapter for rotary transducer</b> 	Universal adapter to breaker and drive types HPL/BLG 3AP1FG	X	X			XB-51050
<b>Circuit breaker specific kits</b>						
<b>HPL kit (ABB)</b> 	For use on ABB HPL circuit breakers	X	X	X	X	XB-39080
<b>BLG kit (ABB)</b> 	For use on ABB mechanisms BLG 352, 352C, 1002 and 1002A	X				XB-39085
<b>LTB kit (ABB)</b> 	For use on ABB LTB circuit breakers with 3-column stand	X	X	X	X	XB-39090
<b>LTB Kit (ABB)</b>	<b>Including:</b> Mounting kit XB-51010 Software conversion table BL-8730X Universal adapter for rotary transducer XB-51060	X	X	X	X	XB-61010
<b>HPL/BLG Kit (ABB)</b>	<b>Including:</b> Mounting kit XB-51010 Software conversion table BL-8720X Universal adapter for rotary transducer XB-51060	X	X	X	X	XB-61020

Item	Description	TM1800	TM1700	TM1600	EGIL	Art. No.
<b>AHMA Kit (ABB)</b>	 <p>3-Phase Diagnostic Set for ABB drive mechanism type AHMA 4/8  <b>Including:</b>                      3 Transducers                      3 Adapter cable                      Mounting details                      Transport case</p>					
	GA-00044	X	X	X		XB-61030
<b>HMB Kit (ABB)</b>	 <p>For drive mechanism type HMB 4/8                      Three phase set complete in case  <b>Including:</b>                      3 PES-HMB8 Transducers                      3 Adapter cable                      1 Alu transport case                      3 Calibration Certificates</p>					
	GA-00055 GD-00766	X	X	X		XB-61040
<b>Ready-to-use kits – Rotary</b>						
<b>Analog</b>						
<b>1-phase kit</b>	Incl. transducer XB-31010, mounting kit XB-51010	X	X	X	X	XB-71010
<b>3-phase kit</b>	Incl. 3 x 1-phase kits XB-71010	X	X	X		XB-71013
<b>Digital</b>						
<b>1-phase kit</b>	<b>Including:</b> Transducer XB-39130 Mounting kit XB-51010 With Cable, 10 m (33 ft)	X	X			XB-71020
	With Cable, 20 m (66 ft)	X	X			XB-71022
<b>3-phase kit</b>	<b>Including:</b> 3 x 1-pase kits XB-71020	X	X			XB-71023
	<b>Including:</b> 3 x 1-pase kits XB-71022	X	X			XB-71025
<b>Transducer mounting accessories</b>						
<b>Holder for transducer</b>	 <p>Holder for dig. rotary Baumer EIL and linear LWG, Ø 36 mm</p>	X	X			XB-39005
<b>Flexible arm</b>		X	X	X	X	XB-39012
<b>Switch magnetic base</b>		X	X	X	X	XB-39013
<b>Clamping base</b>		X	X	X	X	XB-39014

Item	Description	TM1800	TM1700	TM1600	EGIL	Art. No.
Flexible arm		X	X	X	X	XB-39021
Holder for transducer	 Holder for analog rotary transducer and Baumer BDH digital rotary transducer	X	X	X	X	XB-39022
Flex coupling	 For shaft diam. 6 mm (for Novotechnic IP6501)	X	X	X	X	XB-39030
Flex coupling	 For shaft diam. 10 / 6 mm (for Baumer BDH)	X	X			XB-39032
Thread adapter kit	 Imperial / metrics adapter kit for TLH / TP1 <b>Including:</b> 1 nut metrics, M5 1 spacer nut, M5 / UNF 10-32 1 spacer nut, M5 / UNC 1/4-20 1 nut, UNF 10-32 1 nut, UNC 1/4-20	X	X	X	X	XB-39036
Distance screw	 Metrics (M5) / metrics (M5) for TP1	X	X			XB-39160
Rod for digital transducer TP1	 Rod for NOVOTECHNIC TP1, 300 mm (11.8")	X	X	X	X	XB-39193

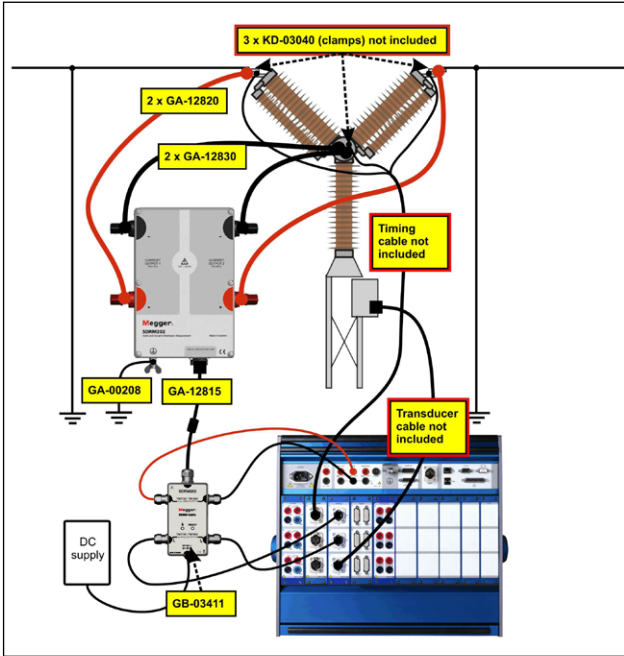
Item	Description	TM1800	TM1700	TM1600	EGIL	Art. No.
<b>Other</b>						
<i>Dolphin clamps</i>						
	Black	X	X	X	X	40-083220
	Red	X	X	X	X	40-08322
<i>Timing clamp</i>						
	Timing clamp for bolt head	X	X	X	X	53-31800
<i>Cable organizer</i>						
	Hook-and-loop straps, 10 pcs.	X	X	X	X	AA-00100
<i>Long term monitoring</i>						
<i>LTM1</i>	EPRM to be mounted in the TM1600 Starts measurement when there is a change at any of the time-measuring inputs.			X		BL-80010
<i>LTM2</i>	Functions in the same way as a standard TM1600, but returns automatically to the READY state after measurement.			X		BL-80011
<i>VD401</i>						
	Voltage divider, ratio 400/1 (for TM1600 and EGIL with analog channel)			X	X	BL-90070
<i>USB to fiber adapte</i>						
	CABA Hardware USB to fiber adapter			X		BL-90165
<i>Current</i>						
	AC/DC clamp/clip-on/current probe, Fluke 80i-110s Current sensor kit 1 channel (Fluke 80i-110s incl. cable GA-00140)	X	X	X	X	BL-90600
	Current sensor kit 3 channels 3 x (Fluke 80i-110s incl. cables GA-00140)	X	X	X		BL-90610
<i>Temperature sensor</i>						
	With the temperature sensor the ambient temperature is automatically recorded with each measurement and stored together with the test result. The temperature becomes a parameter in CABA Win. Suitable cable is the Analog cable, 10 m GA-01005. Range: -20°C to +50°C (-4°F to +122°F) Resolution: 0.5°C (0.9°F)	X				CG-90070

Item	Description	TM1800	TM1700	TM1600	EGIL	Art. No.
 <p>Thermopaper, for Fujitsu</p>	114 mm, 30 m			X	X	GC-00030
	Box/24 pcs			X	X	GC-00032
 <p>Thermopaper</p>	114 mm, Ø 40 mm	X				GC-00040
	Soft case					
 <p>Soft case</p>	Made from sturdy nylon fabric	X	X			GD-00340
	Clamp					
 <p>Clamp</p>		X	X	X	X	KD-03040
	Clamps					
 <p>Clamps</p>	Multipurpose Timing clamp, black, 4 mm banana	X	X	X	X	XB-39200
	 <p>Clamps</p>	Multipurpose Timing clamp, red, 4 mm banana	X	X	X	X
 <p>Ferrite kit</p>		Accessory for timing of GIS circuit breakers using TM1800 with DualGround™				
	<p><b>Including:</b></p> <ul style="list-style-type: none"> <li>C-shape ferrite 7 XB-40010</li> <li>I-shape ferrite 4 XB-40020</li> <li>Round ferrite 4 30-67090</li> <li>Hook and loop fastener 4 09-10140</li> <li>Transport case GD-00440</li> <li>User's Manual ZP-CG04E</li> </ul>	X	X			XB-40090

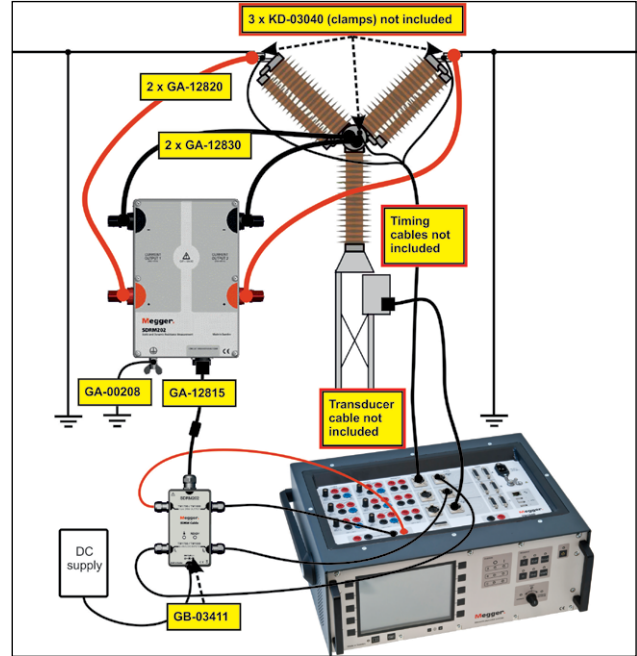
For more information about optional accessories please contact Megger



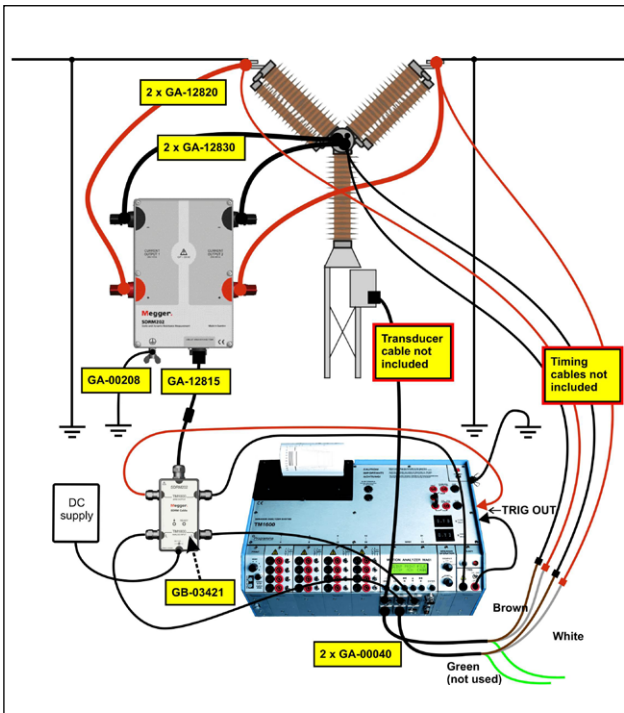
**Connecting and mounting guidance**  
SDRM Hook-up examples and cable designations



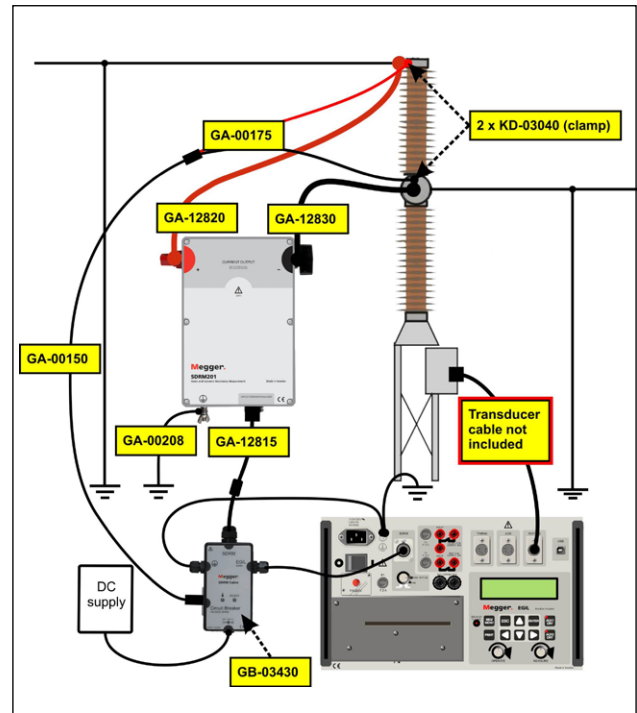
Timing cable is included with the TM1800 timing module. Transducer cable is selected together with the the type of transducer used.



Timing cable is included with the TM1700. Transducer cable is selected together with the the type of transducer used.



Timing cable is an optional accessory to TM1600. Transducer cable is selected together with the the type of transducer used.

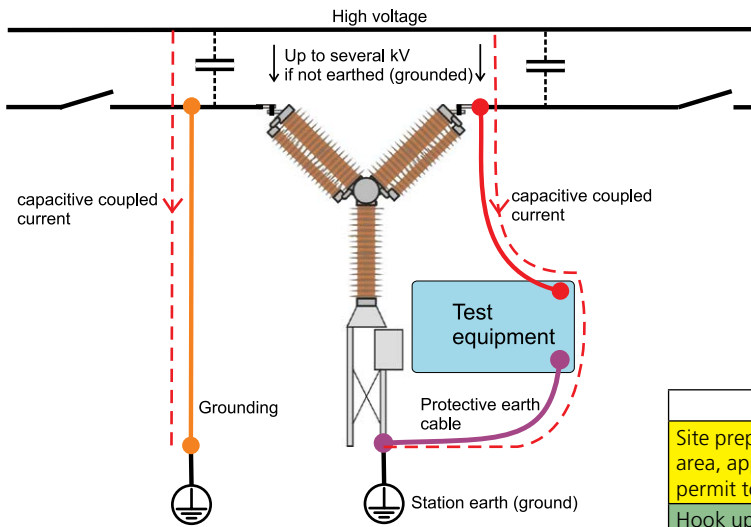


Transducer cable is selected together with the the type of transducer used.

## DualGround - safe testing

The best way to provide safety in circuit breaker testing is to keep both sides of the circuit breaker grounded throughout the test. This will also make the test faster and easier. Minimum time shall be spent in the substation and focus shall be on the test rather than the equipment.

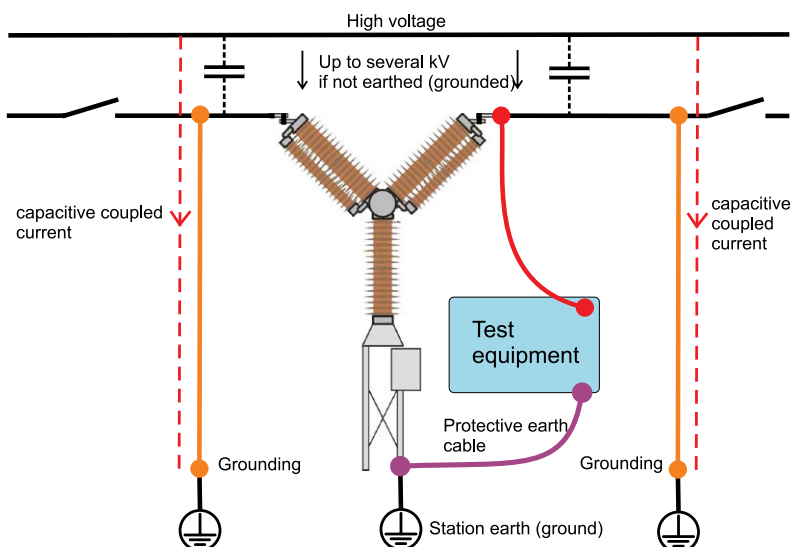
### One side grounded



### Conventional vs. DualGround

Conventional vs. DualGround	
Site preparation (isolate work area, apply safety ground, issue permit to work)	Site preparation (isolate work area, apply safety ground, issue permit to work)
Hook up test equipment. Issue sanction for test	Hook up test equipment. Issue sanction for test
Authorised person removes the ground	Risky step left out
Perform testing	Safe testing with both sides grounded
Authorised person applies ground	Risky step left out
Cancel sanction for test. Disconnect test equipment	Cancel sanction for test. Disconnect test equipment
Site closing (cancel permit to work, disconnect ground)	Site closing (cancel permit to work, disconnect ground)

### Both sides grounded

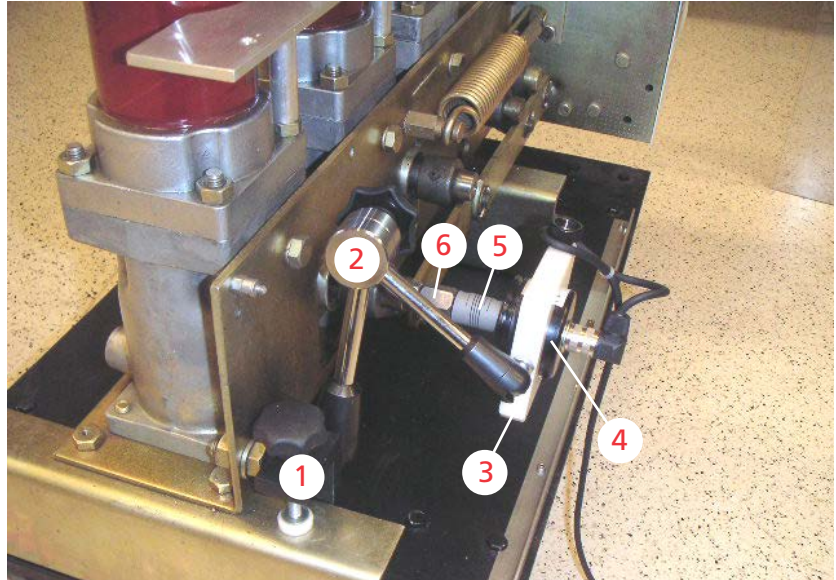




## Transducer mounting examples

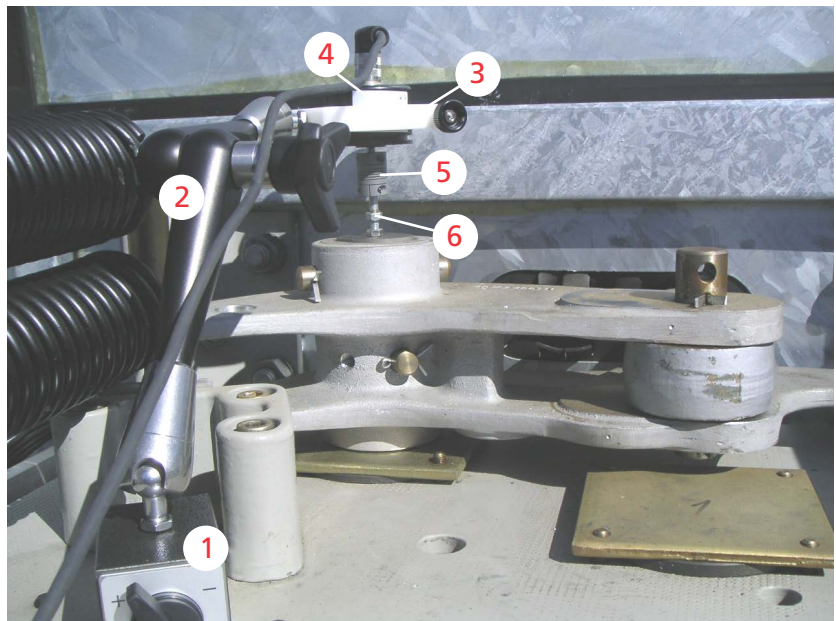
### Analog transducer mounted on a distribution circuit breaker

1. Clamping base
2. Flexible arm
3. Holder angular transducer
4. Novotechnik IP6501
5. Flex coupling
6. Bolt adapter



### Analog transducer mounted on a distribution circuit breaker

1. Magnetic base
2. Flexible arm
3. Holder angular transducer
4. Novotechnik IP6501
5. Flex coupling
6. Bolt adapter



## First trip measurement

When a fault occurs on a transmission or distribution line, the mission for the circuit breaker is to open the circuit to isolate the fault from the power source. A quick interruption of the current will avoid or limit damage to expensive equipment caused by the high fault currents.

### Why capture first trip

Testing circuit breakers can be done in many ways, but one of the most common is timing of the main contacts, which gives a direct indication of the trip time. A typical procedure for performing a timing test on a circuit breaker is:

1. Open the CB
2. Disconnect the CB by opening the disconnecter switches
3. Ground the CB
4. Perform the timing test

Will the timing tests show the true trip time? Well, not necessarily. Consider a circuit breaker that has been in service without operating for many months, even years, before it was taken out of service for testing. It might then be suffering from a lack of or dried grease and maybe corrosion in its bearings. These problems can, and most probably will, slow down the first operation.

The problem with this procedure is that the CB has been operated at least once before the testing procedure begins. This operation might be all it takes to “shake off” any corrosion problems or sticky bearings and bring the breaker’s trip time up to standard. So when the actual timing test is performed, no problem exists and the service engineer thinks the breaker is in good shape and no further service is needed. Some months later the corrosion is back and when a fault occurs the CB does not trip fast enough, or maybe not at all. This is why it is important to capture the first operation to reveal any problems with the CB.

### Perform a first trip test

A good and time effective way to check the condition of a circuit breaker is to document its behavior at the first open operation after it has been idle for long time. The measurement and connections to the CB are carried out while it is still in service. The only way to measure the currents in a safe way is to use current clamps. For the coil current, either one or three clamps are needed depending on the number of operating mechanisms. The clamps shall be of DC type in order to manage all types of coils.

Connecting current clamps to the CT’s secondary winding makes it possible to check the transition of the line currents to zero during the opening of the CB contacts as well as the synchronization of the opening times on the three phases.

The equipment needed for a first trip measurement depends on the configuration of the circuit breaker. All the connections are made inside the control cabinet.

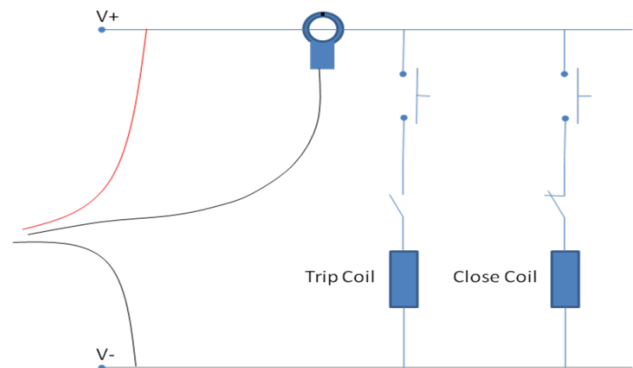


Figure 1. Point for measuring coil current and control voltage.

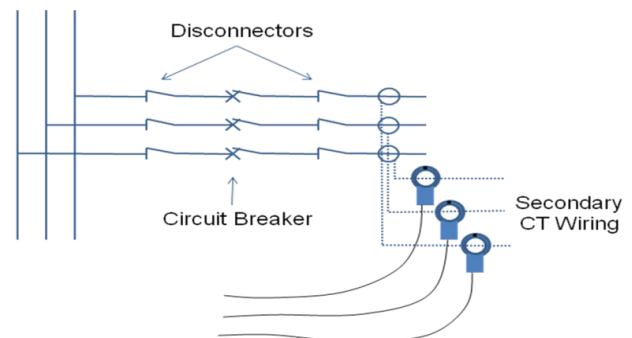


Figure 2. Points for measuring the line currents. Since the CB is in service, the conventional way with leads across the CB cannot be used. Instead, three current clamps are used on the secondary side of the current transformer for each phase. For ordering information, see “First trip kit” on page 11.



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