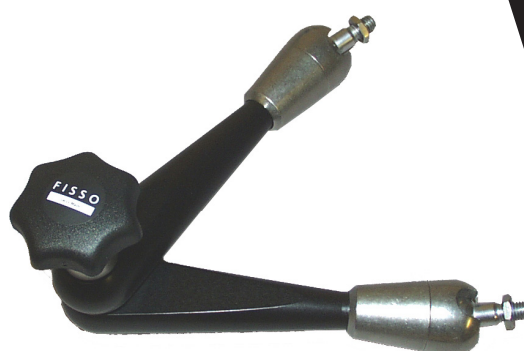


Circuit breaker testing accessories

Megger[®]
Power on



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Item	Description	TM1800	TM1700	TM1600	EGIL	Art. No.	
Cables							
<i>Analogue Input XLR/Banana</i>		XLR female / 4 mm safety plugs, 1 m (3.3 ft). For customized analog transducer connection	X	X	X	X	GA-00040
<i>Cable Analogue XLR/open ends</i>		XLR female / open ends, 1 m (3.3 ft)	X	X	X	X	GA-00041
<i>Extension cable Analogue Input</i>		For analog input, XLR3 female / XLR3 male Analog cable EGIL/TM, 7.5 m (24.6 ft)	X	X	X	X	GA-00042
<i>Transducer cable, XLR / IP / TS</i>		NOVOTECHNIC IP/TS, 1 m (3.3 ft)	X	X	X	X	GA-00044
<i>Transducer cable, XLR / TLH / LWH</i>		NOVOTECHNIC TLH/LWH, 0.5 m (1.6 ft)	X	X	X	X	GA-00049
<i>Transducer cable XLR / LWG</i>		NOVOTECHNIC LWG/M12, 0.5 m (1.6 ft)	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

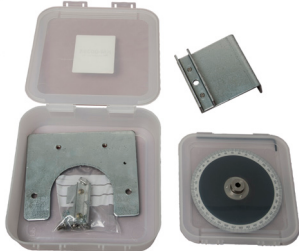


Item	Description	TM1800	TM1700	TM1600	EGIL	Art. No.
SCA600/Coax. Cable		X	X	X		GA-00750
Extension cable Analogue input						
	XLR female/XLR male 1 m (3.3 ft)	X	X	X	X	GA-00760
Cable reel	20 m (65.5 ft), 4 mm stackable safety plugs					
	Black	X	X	X	X	GA-00840
	Red	X	X	X	X	GA-00842
	Yellow	X	X	X	X	GA-00844
	Green	X	X	X	X	GA-00845
	Blue	X	X	X	X	GA-00846
Cable Timing MAIN						
	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)	X	X			GA-00850
Extension cable Timing MAIN						
	For Timing M/R modules, XLR3 male / XLR3 female, 10 m (32.8 ft)	X	X			GA-00851
Adapter for Doble digital transducer						
	For Doble digital transducer	X	X			GA-00867
Adapter for Siemens digital transducer						
	For Siemens digital transducer	X	X			GA-00868
Adapter for Vanguard digital transducer						
	For Vanguard digital transducer	X	X			GA-00869




Item	Description	TM1800	TM1700	TM1600	EGIL	Art. No.
Cable Timing AUX	 <p>Including: 4 Adapter for terminal block 4 Cable lug adapter 1 Cable, 5 m, (16.4 ft)</p>	X	X			GA-00870
Digital transducercable	 <p>For customized digital transducer connection RS422, SUB-D15 / open ends, 10 m (33 ft)</p>	X	X			GA-00885
Digital transducer extension cable	 <p>RS422, SUB-D15 / SUB-D15, 10 m (33 ft)</p>	X	X			GA-00888
Cable Digital TP1 and Rotary EIL	 <p>NOVOTECH Digital TP1 and Rotary Baumer EIL transducer cable, D-SUB 15 / M12</p> <p>20 m (66 ft)</p> <p>10 m (33 ft)</p>	X	X			GA-00887
Adapter for Elcon digital transducer	 <p>For using Leine & Linde 530 digital transducer, 10 m (33 ft)</p>	X	X			GA-00890
Baumer digital cable	 <p>For using Baumer BDH16.05A3600-LO-B, digital transducer, 10 m (33 ft)</p>	X	X			GA-00895
Ethernet cable, network	 <p>Cable for connection to network/LAN, RJ45</p>	X	X			GA-00970

Item	Description	TM1800	TM1700	TM1600	EGIL	Art. No.				
TM1700/1800 DCM extension cable	 <p>GA-00999</p>	1 DCM extension cable, DIN 6, 10 m (33 ft) Old type				X	X	GA-00998		
Open analog cable		1 DCM extension cable, DIN 7, 10 m (33 ft) Actual type. See "TM1700/1800 DCM Extension cable" on page 8				X	X	GA-00998		
Extension cable Analogue Input		For customized analog transducer connection, 1 m (3.3 ft)				X	X	X	X	GA-01000
Cable kit Control		For analog input, XLR3 female / XLR3 male Analog cable EGIL/TM, 10 m (33 ft)				X	X	X	X	GA-01005
HV Timing cable kit		Control kit for three phases Including: 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		
Connection kit for Control cables		For Timing M/R modules, XLR3 male / XLR3 female				X	X	GA-90005		
		5 Cable, 10 m (32.8 ft) GA-00851				X	X	GA-90005		
		Including: 5 Test clip 5 Adapter for terminal block 5 Cable lug adapter 1 Plastic box				X	X	X	X	GA-90010

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






Item	Description	TM1800	TM1700	TM1600	EGIL	Art. No.
Software						
<i>CABA Win</i>						
	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 from R04 and lower to R06, including Test Plan Editor (TPE)	X	X	X	X	CG-8040X
Application kits						
<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>VDS Adapter</i>						
	Accessory for on-line timing of MV breakers. Enables on-line timing on circuit breakers installed in enclosed medium voltage substations. Adapted to connect directly to the capacitive VDS (Voltage Detection System) interface according to the IEC 61243-5 and VDE 0682 T415 standards.	X	X	X		XB-39260
<i>Trig source selector</i>						
	Combines signals from six trig sources into one single trig signal. Ideal when making on-line testing and using multiple trig sources, e.g. close command, trip command, spring charge motor, disconnector and ground switches. Eliminates the need of reconnections between tests since all connections can be made initially.					XB-39265



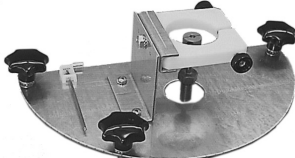

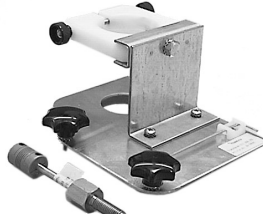


Item	Description	TM1800	TM1700	TM1600	EGIL	Art. No.
Transducer calibration kit 	Plate XB-39022 not included	X	X	X	X	XB-39095
Vibration kit 	The Vibration kit extends TM1800/TM1700/TM1600 and CABA Win with the equipment and software required for recording and analyzing vibration signals at a circuit breaker. 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
Vibration channel 	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*.	X	X	X		XB-32010


Item	Description	TM1800	TM1700	TM1600	EGIL	Art. No.
Static and dynamic resistance measurement						
SDRM201 EGIL	 <p>GB-03431</p>					
	Included accessories: SDRM Cable GB-03431 SDRM multi cable extension, 10 m (33 ft) GA-12812 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 ² , 10 m (33 ft) GA-00208 Charger HC-04210 Accessory bag GD-31040 Case GD-00222				X	CG-90250
SDRM201 TM1700/TM1800	 <p>CG-90205</p>					
	Included accessories: SDRM Cable CG-90205 SDRM multi cable extension, 10 m (33 ft) GA-12812 Current cable (red) GA-12820 Current cable (black) GA-12830 Ground cable, 2.5 mm ² , 10 m (33 ft) GA-00208 Charger HC-04210 Accessory bag GD-31040 Case GD-00222	X	X			CG-90260
	Pack of 3 units (CG-90260) for circuit breaker with 2 Breaks/Phase					CG-90263
SDRM202						
	Included accessories: SDRM Cable for TM1700/1800 GB-03412 SDRM multi cable extension, 10 m (33 ft) GA-12812 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 ² 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
	Included accessories: SDRM Cable for EGIL GB-03431 SDRM multi cable extension, 10 m (33 ft) GA-12812 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 ² 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.
SDRM202 Cable 	SDRM Cable for TM1700/1800 Including: Accessory bag	GD-31040	X	X		CG-90205
	SDRM Cable for EGIL Including: Voltage sense extension cable 10 m (33 ft) Accessory bag Voltage sense cable, 2 m (6.5 ft) Clamps 2 pcs)	GA-00150 GD-31040 GA-00175 KD-03040				X
Extension cable, SDRM201/202 	Extension cable for: CG-90200, CG-90220, CG-90250 and CG-90260 10 m (33 ft)	X	X	X	X	GA-12812
Current cables and clamps for SDRM202 	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
Transducers						
Linear						
Analog						
TLH-150 	150 mm (5.9") travel ¹⁾	X	X	X	X	XB-30016
TLH-225	225 mm (8.8") travel ¹⁾	X	X	X	X	XB-30017
TLH-500	500 mm (19.7") travel ¹⁾	X	X	X	X	XB-30020
TLH-750	750 mm (29.5") travel ¹⁾	X	X	X	X	XB-30022
TLH-1000	1000 mm (39.4") travel ¹⁾	X	X	X	X	XB-30023
	¹⁾ Including cable, 0.5 m (20") GA-00049					
LWG 150 	150 mm (5.9") travel ²⁾	X	X	X	X	XB-30116
LWG 225	225 mm (8.8") travel ²⁾	X	X	X	X	XB-30117
LWG 500	500 mm (19.7") travel ²⁾	X	X	X	X	XB-30120
	²⁾ Including cable, 0.5 m (20") GA-00050					
TS 150 	150 mm (5.9") travel ³⁾	X	X	X	X	XB-30030
TS 50	50 mm (1.9") travel ³⁾	X	X	X	X	XB-30031
TS 25	25 mm (1") travel ³⁾	X	X	X	X	XB-30033
	³⁾ Including cable, 1 m (39") GA-00044					
The above transducers are also available in other lengths, please contact Megger for more information.						

Item	Description	TM1800	TM1700	TM1600	EGIL	Art. No.	
Touchless linear digital transducer (kit) 	Including: 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	
Rotary							
Analog							
Transducer kit		Novotechnic IP6501 Including: Cable, 1 m (39"), Flex coupling, 6 mm Hexagon wrench	X	X	X	X	XB-31010
Digital							
Transducer kit							
	Baumer EIL580-SC10.5RH.03600.A Including: Flex coupling, 10/6 mm Hexagon wrench With Cable, 10 m (33 ft)	X	X			XB-39130	
	With Cable, 20 m (66 ft)	X	X			XB-39135	

Item	Description	TM1800	TM1700	TM1600	EGIL	Art. No.
Transducer mounting kits						
Universal kits						
<i>TLH/LWG/TP1 kit</i>						
	For use with linear transducers (TLH/LWH/TP1)	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
<i>Transducer kit 300 mm</i>						
	Single phase, Analog, Linear, 300 mm (11.8")	X	X	X	X	XB-40103
						
	3 phase, Analog, Linear, 300 mm (11.8")	X	X	X		XB-40104
<i>Transducer mounting kits</i> <i>Note: Transducers not included</i>						
	Same as above kits but without transducers, i.e. includes only case, brackets and other mounting details. Fits with: Single phase, Analog, Linear, 500-600 mm (19.7"-23.6")	X	X	X	X	XB-40110
	Fits with: Single phase, Analog, Linear, 300 mm (11.8")	X	X	X	X	XB-40111
	Fits with: 3 phase, Analog, Linear, 300 mm (11.8")	X	X	X		XB-40112
<i>Rotary transducer mounting kit</i>						
	For transducers XB-31010 and XB-39130 Including:					
	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					XB-39005
		X	X	X	X	XB-51010

Item	Description	TM1800	TM1700	TM1600	EGIL	Art. No.
Universal transducer mounting kit 	For linear and rotary transducers Including: Magnetic base Clamping base Flexible arm Holder for angular transducer Plastic transport case Adapter M6/6 2 Nuts M6 Adapter M8/6 2 Nuts M8 Adapter M10/6 2 Nuts M10 Adapter M12/6 2 Nuts M12 Universal support Holder for dig. rotary EIL and linear LWG, Ø 36 mm					XB-39013 XB-39014 XB-39021 XB-39022 XB-39023 XB-39025 XB-39026 XB-39027 XB-39028 XB-39029 XB-39005
Universal adapter for rotary transducer 	Universal adapter to breaker and drive types HPL/BLG 3AP1FG, AP1FI, 8DPP3, 3AQ	X	X	X	X	XB-51020
Circuit breaker specific kits						
HPL kit (ABB) 	For use on ABB HPL circuit breakers	X	X	X	X	XB-39080
BLG kit (ABB) 	For use on ABB mechanisms BLG 352, 352C, 1002 and 1002A	X				XB-39085
LTB kit (ABB) 	For use on ABB LTB circuit breakers with 3-column stand	X	X	X	X	XB-39090
LTB Kit (ABB) 	Including: Mounting kit, Universal adapter for rotary transducer					XB-51010 XB-51060
VD4 Adapter (ABB) 	Fits with TS-transducer, Stainless steel					GB-39030

Item	Description	TM1800	TM1700	TM1600	EGIL	Art. No.
HPL/BLG Kit (ABB)	 <p>Including: Mounting kit XB-51010 Universal adapter for rotary transducer XB-51060</p>	X	X	X	X	XB-61020
AHMA Kit (ABB)	 <p>3-Phase Diagnostic Set for ABB drive mechanism type AHMA 4/8 Including: 3 Transducers 3 Adapter cable GA-00044 Mounting details Transport case</p>	X	X	X		XB-61030
AHMA Kit (ABB)	 <p>1-Phase Diagnostic Set for ABB drive mechanism type AHMA 4/8 Including: 1 Transducers 1 Adapter cable GA-00044 Mounting details Transport case</p>	X	X	X		XB-61050
HMB Kit (ABB)	 <p>For drive mechanism type HMB 4/8 Three phase set complete in case Including: 3 PES-HMB8 Transducers 3 Adapter cable GA-00044 1 Transport case 3 Calibration Certificates</p>	X	X	X		XB-61040
HMB Kit (ABB)	 <p>For drive mechanism type HMB 4/8 One phase set complete in case Including: 1 PES-HMB8 Transducers 1 Adapter cable GA-00044 1 Transport case 1 Calibration Certificates</p>	X	X	X		XB-61060
Ready-to-use kits – Rotary						
Analog						
1-phase kit	 <p>Incl. transducer XB-31010, mounting kit XB-51010</p>	X	X	X	X	XB-71010
3-phase kit	Incl. 3 x 1-phase kits XB-71010	X	X	X		XB-71013

Item	Description	TM1800	TM1700	TM1600	EGIL	Art. No.
Digital 1-phase kit	 <p><i>Including:</i> Transducer XB-39130 Mounting kit XB-51010 With Cable, 10 m (33 ft)</p>	X	X			XB-71020
	With Cable, 20 m (66 ft)	X	X			XB-71022
3-phase kit	<i>Including:</i> 3 x 1-phase kits XB-71020	X	X			XB-71023
	<i>Including:</i> 3 x 1-phase kits XB-71022	X	X			XB-71025
Transducer mounting accessories						
Holder for transducer	 <p>Holder for dig. rotary Baumer EIL and linear LWG, Ø 36 mm</p>	X	X			XB-39005
Flexible arm	 <p>M8 bolt threads at the ends of the arms</p>	X	X	X	X	XB-39012
Switch magnetic base	 <p>For easy attachment of transducer mounting arrangements. Equipped with threaded hole suited for a "Flexible arm".</p>	X	X	X	X	XB-39013
Clamping base	 <p>Clamp suited for a "Flexible arm" Jaw opening max 40 mm</p>	X	X	X	X	XB-39014
Flexible arm	 <p>This one is stronger than XB-39012 M8 bolt threads at the ends of the arms</p>	X	X	X	X	XB-39021
Holder for transducer	 <p>Holder for analog rotary transducer and Baumer BDH digital rotary transducer, Ø 55 mm</p>	X	X	X	X	XB-39022

Item	Description	TM1800	TM1700	TM1600	EGIL	Art. No.
Universal support	 <p>Suited for the "Flexible arms". Rod length is 250 mm Jaw opening max 40 mm</p>					XB-39029
Flex coupling	 <p>For shaft diam. 6 mm (for Novotechnic IP6501)</p>	X	X	X	X	XB-39030
Flex coupling	 <p>For shaft diam. 10 / 6 mm (for Baumer BDH)</p>	X	X			XB-39032
Thread adapter kit	 <p>Imperial / metrics adapter kit for TLH / TP1 Including: 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</p>	X	X	X	X	XB-39036
Magnetic adapter for motion transducer fitting.	 <p>For attaching rotary transducers on shaft ends. Ideal at first trip test when other mechanical attachment methods are impracticable. Fits to a Ø 6 mm flex coupling. Super strong neodymium magnet. Fits with both resistive and incremental rotary transducers</p>					XB-39037
Holder for TS transducer	 <p>For TS Transducer 18 mm</p>					XB-39512

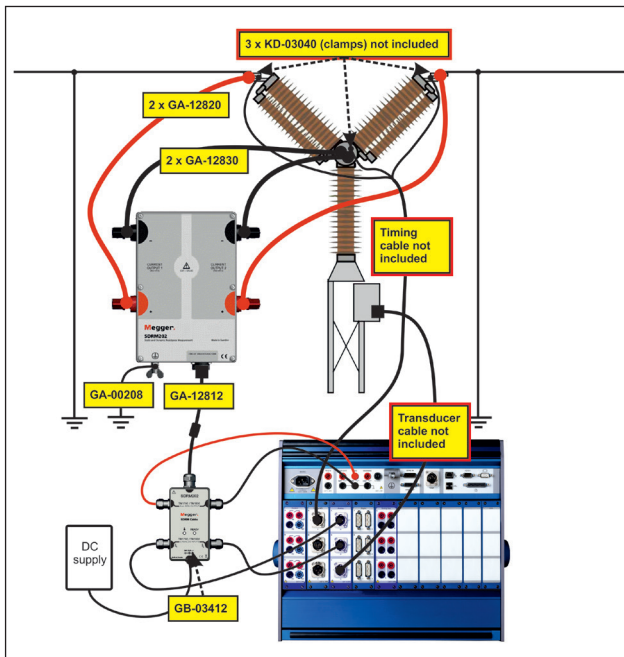
Item	Description	TM1800	TM1700	TM1600	EGIL	Art. No.
Other						
<i>Dolphin clamps</i>						
	Black, with connection for 4 mm banana plug	X	X	X	X	40-083220
	Red, with connection for 4 mm banana plug	X	X	X	X	40-08322
<i>Timing clamp</i>						
	Timing clamp for bolt head	X	X	X	X	53-31800
<i>Cable organizer</i>						
	Hook-and-loop straps, 10 pcs.	X	X	X	X	AA-00100
<i>Long term monitoring</i>						
<i>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
<i>Thermopaper, for Fujitsu</i>						
	114 mm, 30 m			X	X	GC-00030
	Box/24 pcs			X	X	GC-00032
<i>Thermopaper</i>						
	114 mm, Ø 40 mm	X				GC-00040

Item	Description	TM1800	TM1700	TM1600	EGIL	Art. No.
Soft case						
	Made from sturdy nylon fabric	X	X			GD-00340
Cable case						
	Cable case soft with 11 compartments With shoulder strap and two handles Made from sturdy nylon fabric Dimensions: 740 x 270 x 420 mm Note: No cables included	X	X	X	X	GD-31055
Clamp						
		X	X	X	X	KD-03040
Clamps						
	Multipurpose Timing clamp, black, 4 mm banana	X	X	X	X	XB-39200
						
	Multipurpose Timing clamp, red, 4 mm banana	X	X	X	X	XB-39202
Ferrite kit						
	Accessory for timing of GIS circuit breakers using TM1800 with DualGround™ Including: C-shape ferrite 7 XB-40010 I-shape ferrite 4 XB-40020 Round ferrite 4 30-67090 Hook and loop fastener 4 09-10140 Transport case GD-00440 User's Manual ZP-CG04E	X	X			XB-40090
Ferrite I-shape slim						
	Width: 25 mm	X	X			XB-40030
Ferrite kit with I-shape slim ferrites						
	Accessory for timing of GIS circuit breakers using TM1800 with DualGround™ Including: C-shape ferrite 7 XB-40010 I-shape slim ferrite 4 XB-40030 Round ferrite 4 30-67090 Hook and loop fastener 4 09-10140 Transport case GD-00440 User's Manual ZP-CG04E	X	X			XB-40095

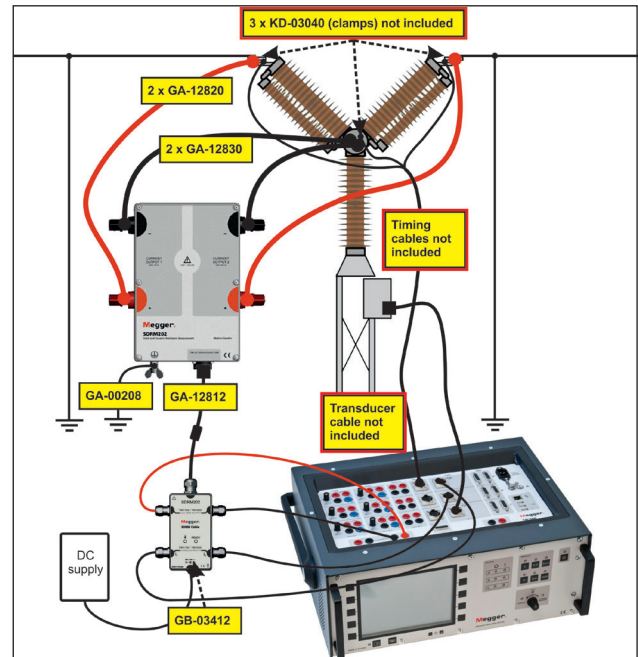
For more information about optional accessories please contact Megger

Connecting and mounting guidance

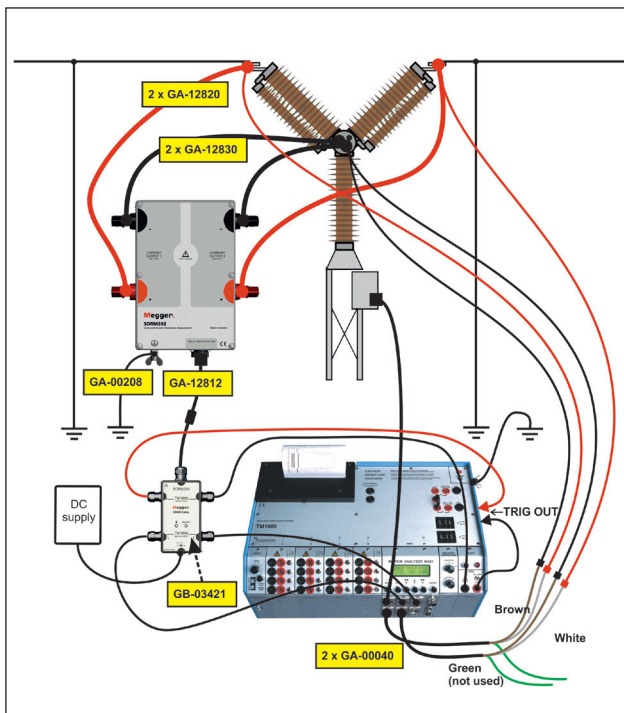
SDRM Hook-up examples and cable designations



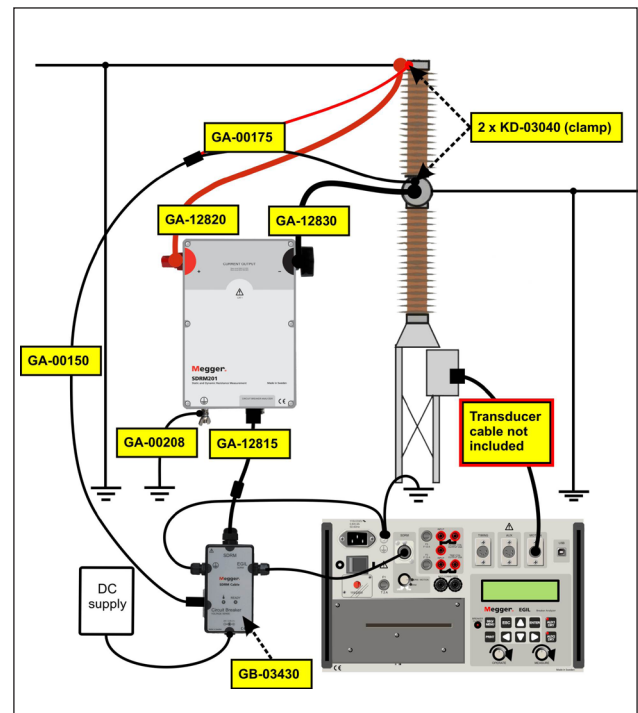
Timing cable is included with the TM1800 timing module. Transducer cable is selected together with the the type of transducer used.



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.

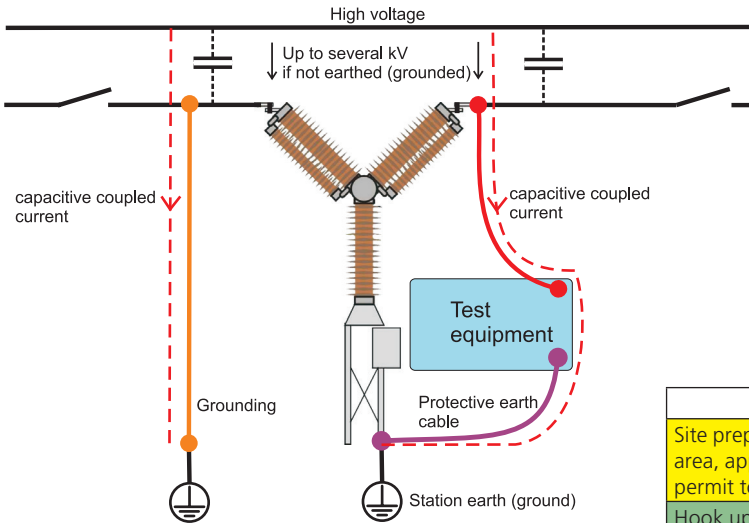


Transducer cable is selected together with the the type of transducer used.

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.

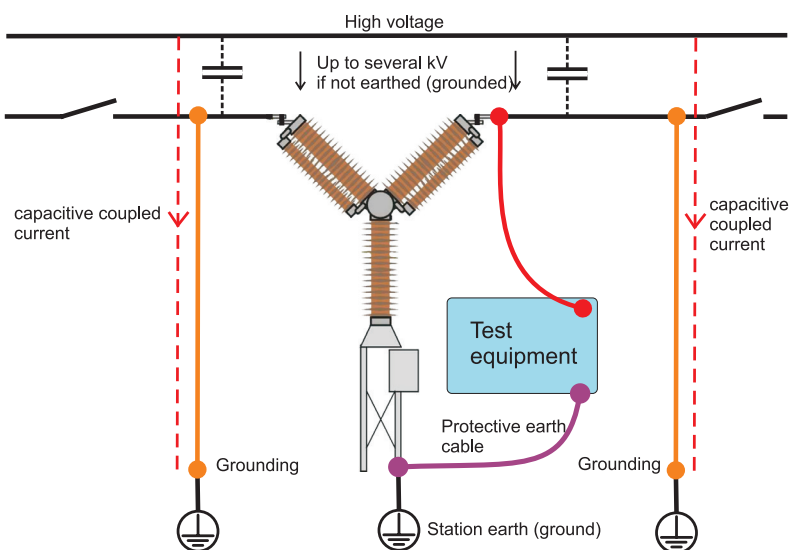
One side grounded



Conventional vs. DualGround

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)

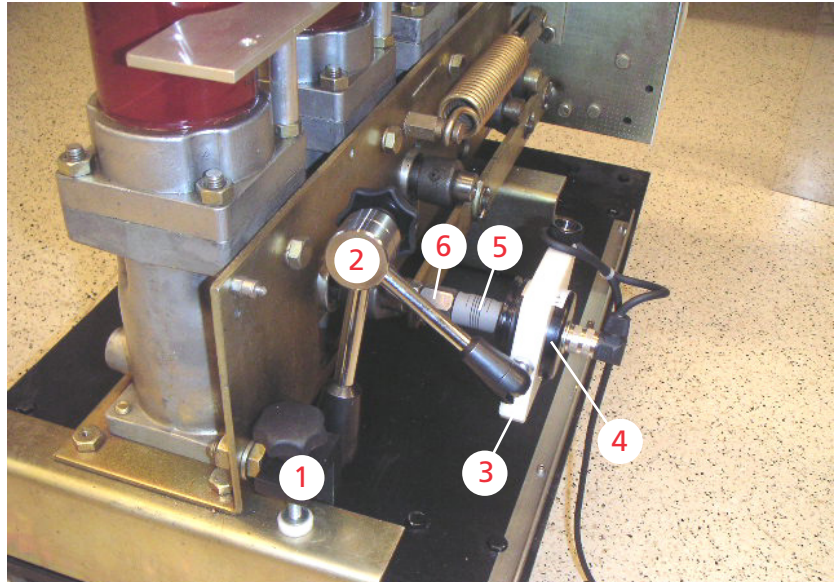
Both sides grounded



Transducer mounting examples

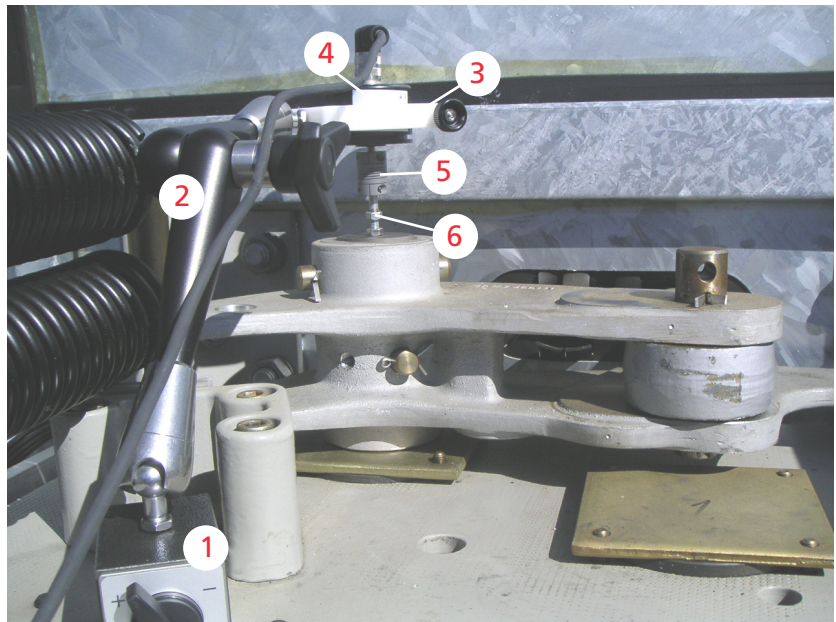
Analog transducer mounted on a distribution circuit breaker

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.

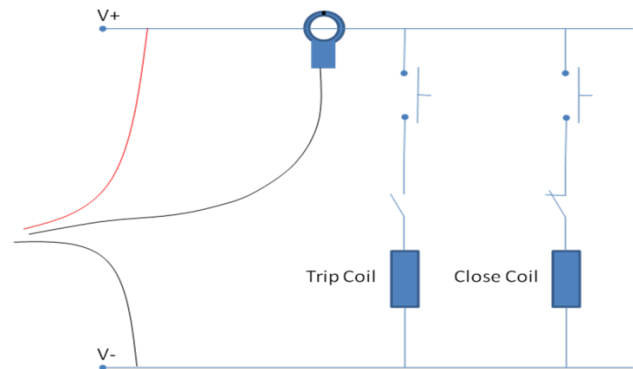


Figure 1. Point for measuring coil current and control voltage.

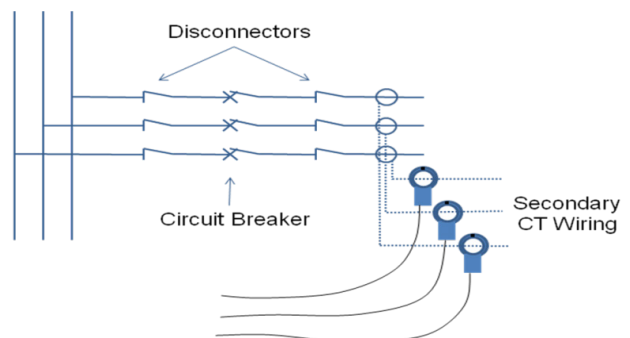


Figure 2. Points for measuring the line currents. Since the CB is in service, the conventional way with leads across the CB cannot be used. Instead, three current clamps are used on the secondary side of the current transformer for each phase.

For ordering information, see "First trip kit" on page 9.

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