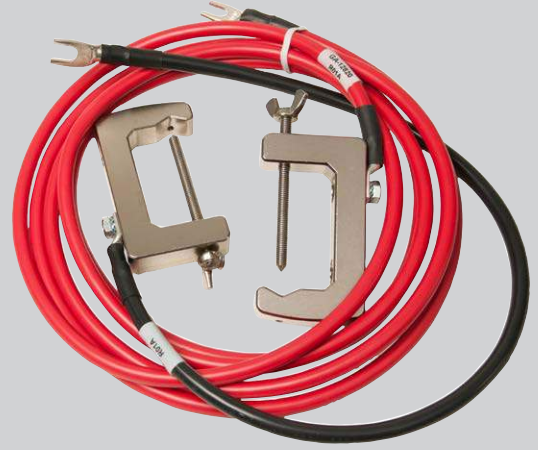
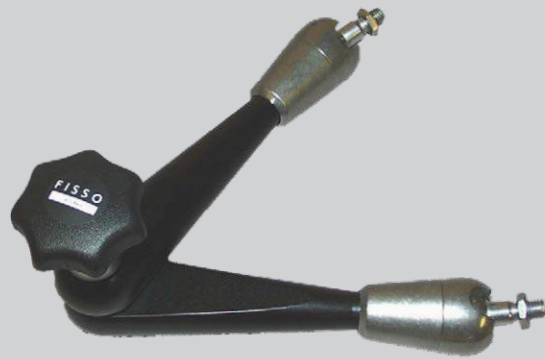
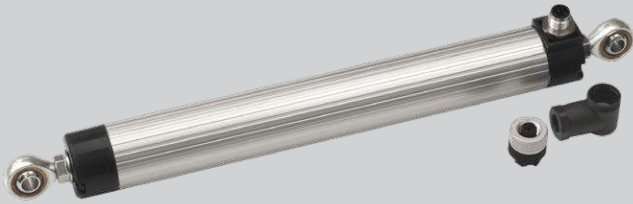


Circuit breaker testing accessories

Megger®



Circuit breaker testing accessories

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Cables

Item	Description	TM1800	TM1700	TM1600	EGIL	Art. No.
Cables						
Analogue Input XLR/Banana		X	X	X	X	GA-00040
Cable Analogue XLR/open ends		X	X	X	X	GA-00041
Extension cable Analogue Input		X	X	X	X	GA-00042
Transducer cable, XLR / IP / TS		X	X	X	X	GA-00044
Transducer cable, XLR / TLH / LWH		X	X	X	X	GA-00049
Transducer cable XLR / LWG		X	X	X	X	GA-00050

Cables

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

Cables

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


Cables

Item	Description	TM1800	TM1700	TM1600	EGIL	Art. No.
Adapter for Vanguard digital transducer 	For Vanguard digital transducer	X	X			GA-00869
Cable Timing AUX 	Including: 4 Adapter for terminal block 4 Cable lug adapter 1 Cable, 5 m, (16.4 ft)	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
Digital transducer cable for EIL rotary and touchless linear 	For Baumer EIL rotary transducer and SIKO touchless linear transducer, D-SUB 15 / M12 20 m (66 ft) 10 m (33 ft)	X	X			GA-00887 GA-00889
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

Cables

Item	Description	TM1800	TM1700	TM1600	EGIL	Art. No.
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
	GA-00999					
	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 kit Control						
	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
HV Timing cable kit						
	For Timing M/R modules, XLR3 male / XLR3 female 5 Cable, 10 m (32.8 ft) GA-00851	X	X			GA-90005


Cables

Item	Description	TM1800	TM1700	TM1600	EGIL	Art. No.
Connection kit for Control cables 	Including: 5 Test clip 5 Adapter for terminal block 5 Cable lug adapter 1 Plastic box	X	X	X	X	GA-90010

DCM – DualGround

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




Software

Item	Description	TM1800	TM1700	TM1600	EGIL	Art. No.
Software						
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 from R04 and lower to latest version, including Test Plan Editor (TPE)		X	X	X	X	CG-8040X

Application kits

Item	Description	TM1800	TM1700	TM1600	EGIL	Art. No.
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, disconnecter and ground switches. Eliminates the need of reconnections between tests since all connections can be made initially.				XB-39265


Application kits

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

Static and dynamic resistance measurement

Item	Description	TM1800	TM1700	TM1600	EGIL	Art. No.	
SDRM202 Cable	 <p>GB-03412</p>	Including: SDRM Cable for TM1700/1800 GB-03412 Accessory bag GD-31040	X	X		CG-90205	
3-phase SDRM Cable		For 3-Phase measurement at two breaks/phase Including: 3-phase SDRM Cable GB-03460 Power supply HC-04212 Accessory bag GD-31040	X	X		CG-90235	
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 3 m (9.8 ft) Cable, black, 0.5 m (1.6 ft)	X	X	X	X	GA-12820 GA-12830





Transducers

Item	Description	TM1800	TM1700	TM1600	EGIL	Art. No.
Transducers						
Linear						
Analog						
<i>TLH-150</i>	150 mm (5.9") travel ¹⁾	X	X	X	X	XB-30016
<i>TLH-225</i>	225 mm (8.8") travel ¹⁾	X	X	X	X	XB-30017
<i>TLH-500</i>	500 mm (19.7") travel ¹⁾	X	X	X	X	XB-30020
<i>TLH-750</i>	750 mm (29.5") travel ¹⁾	X	X	X	X	XB-30022
<i>TLH-1000</i>	1000 mm (39.4") travel ¹⁾	X	X	X	X	XB-30023
	¹⁾ Including cable, 0.5 m (20")					GA-00049
<i>LWG 150</i>	150 mm (5.9") travel ²⁾	X	X	X	X	XB-30116
<i>LWG 225</i>	225 mm (8.8") travel ²⁾	X	X	X	X	XB-30117
<i>LWG 500</i>	500 mm (19.7") travel ²⁾	X	X	X	X	XB-30120
	²⁾ Including cable, 0.5 m (20")					GA-00050
<i>TS 150</i>	150 mm (5.9") travel ³⁾	X	X	X	X	XB-30030
<i>TS 50</i>	50 mm (1.9") travel ³⁾	X	X	X	X	XB-30031
<i>TS 25</i>	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.						
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 CB-39021					
		X	X			XB-39230






Transducers

Item	Description	TM1800	TM1700	TM1600	EGIL	Art. No.
Rotary						
Analog						
Transducer kit	 <p data-bbox="700 474 884 600">Novotechnik IP6501 Including: Cable, 1 m (39"), Flex coupling, 6 mm Hexagon wrench</p>	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

Transducer mounting kits

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)	X	X	X	X	XB-39065
<i>Transducer kit 500/600 mm</i>						
	Typically suited for bulk oil circuit breakers. Including: Transducer TLH-500 Transducer adapter cable 0.5 m (GA-00049) L-shaped mounting bracket Pull rod 850 mm with UNF 10/32 threads Transducer/rod clamp Welding clamp Transport case Single phase, Analog, Linear, 500 mm (19.7")	X	X	X	X	XB-40101
	Same as above but with transducer TLH-600. Single phase, Analog, Linear, 600 mm (23.6")	X	X	X	X	XB-40102
<i>Transducer kit 300 mm</i>						
	Typically suited for SF6 dead tank and bulk oil circuit breakers. Including: Transducer TLH-300 Transducer adapter cable 0.5 m (GA-00049) L-shaped mounting bracket Pull rods 250 mm and 500 mm with UNF 10/32 and UNC 1/4 20 threads Transducer/rod clamp Welding clamp Transport case Single phase, Analog, Linear, 300 mm (11.8")	X	X	X	X	XB-40103
	Same as above but with three of each item. 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

Transducer mounting kits

Item	Description	TM1800	TM1700	TM1600	EGIL	Art. No.
Universal transducer mounting kit 	For linear and rotary transducers Including: 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					
Universal adapter for rotary transducer 	Universal adapter to breaker and drive types HPL, LTB, BLG, 8DN9, 8DN8, 3AP1FG, 3AQ, 3DP3, 3AP1FI	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, XB-51010 Universal adapter for rotary transducer XB-51060	X	X	X	X	XB-61010

Transducer mounting kits

Item	Description	TM1800	TM1700	TM1600	EGIL	Art. No.
VD4 Adapter (ABB)						GB-39030
HPL/BLG Kit (ABB)						
ELF-HKA/AHMA Kit (ABB)						
ELF-HKA/AHMA Kit (ABB)						
HMB Kit (ABB)						

Fits with TS-transducer, Stainless steel

Including:
 Mounting kit XB-51010
 Universal adapter for rotary transducer XB-51060

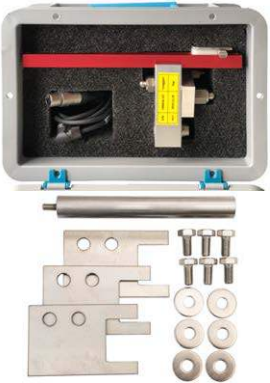


3-Phase Diagnostic Set for ABB drive mechanism type AHMA 4/8
Including:
 3 Transducers
 3 Adapter cable GA-00044
 Mounting details
 Transport case

1-Phase Diagnostic Set for ABB drive mechanism type AHMA 4/8
Including:
 1 Transducers
 1 Adapter cable GA-00044
 Mounting details
 Transport case

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

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Transducer mounting kits

Item	Description	TM1800	TM1700	TM1600	EGIL	Art. No.
<p>HMB Kit (ABB)</p> 	<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	X	XB-61060
<p>GL314-GL318 (GE)</p> 	<p>3-phase diagnostic set for below listed breakers from GE: GL314(X) GL315(X)[D] GL316(X)[D], GL317(X)[D] GL318(X)[D] All with FK3-XX mechanism Including: 3 Digital transducers 3 Digital transducer cables, 10 m (33 ft) 3 Flexible arms, XB-39021 3 Clamping bases, XB-39014 1 Transport case Assembling tools</p>	X	X	X	X	XB-39270
Ready-to-use kits – Rotary						
Analog						
<p>1-phase kit</p> 	<p>Incl. transducer XB-31010, mounting kit XB-51010</p>	X	X	X	X	XB-71010
<p>3-phase kit</p>	<p>Incl. 3 x 1-phase kits XB-71010</p>	X	X	X		XB-71013

Transducer mounting kits

Item	Description	TM1800	TM1700	TM1600	EGIL	Art. No.
Digital						
1-phase kit						
	Including: 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
3-phase kit	Including: 3 x 1-phase kits XB-71020	X	X			XB-71023
	Including: 3 x 1-phase kits XB-71022	X	X			XB-71025
Transducer mounting accessories						
Holder for transducer						
	Holder for dig. rotary Baumer EIL and linear LWG, Ø 36 mm	X	X			XB-39005
Switch magnetic base						
	For easy attachment of transducer mounting arrangements. Equipped with threaded hole suited for a "Flexible arm".	X	X	X	X	XB-39013
Clamping base						
	Clamp suited for a "Flexible arm" Jaw opening max 40 mm	X	X	X	X	XB-39014
Flexible arm						
	M8 bolt threads at the ends of the arms	X	X	X	X	XB-39021
Holder for transducer						
	Holder for rotary transducers: Novotechnik IP6501 analog and Baumer BDH digital, Ø 55 mm	X	X	X	X	XB-39022



Transducer mounting kits

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 Novotechnik IP6501)</p>	X	X	X	X	XB-39030
Flex coupling	 <p>For shaft diam. 10 / 6 mm (for Baumer BDH and EIL)</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			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	40-08320
						
	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 adapter</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>Breaker Simulator</i> <i>BR5503</i>						
	Breaker simulator incl. power supply 24V/1 A. For product training and demo purpose. Runs together with all Megger circuit breaker analyzers. Pedagogic design 1 break / phase, Main and PIR contacts Two Auxiliary contacts Analog and Digital motion outputs Breaker status indication Realistic coil currents Connection guide included	X	X	X	X	BL-97390
<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

Other

Item	Description	TM1800	TM1700	TM1600	EGIL	Art. No.
Thermopaper, for Fujitsu	 114 mm, 30 m			X	X	GC-00030
	Box/24 pcs			X	X	GC-00032
Thermopaper	 114 mm, Ø 40 mm	X				GC-00040
Soft case	 Made from sturdy nylon fabric	X	X			GD-00340
Cable and accessories bag,	 With backpack straps and hand straps. Variable height through zipper solution. Dimensions 580x355x165/228 mm (23" x 14" x 6,5"/9")	X	X	X	X	GD-30225
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	X	X	X	X	KD-03040
Clamps	 Multipurpose kelvin clamp for timing and low resistance measurement, black, 4 mm banana socket.	X	X	X	X	XB-39300
	 Multipurpose kelvin clamp for timing and low resistance measurement, red, 4 mm banana socket.	X	X	X	X	XB-39302
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

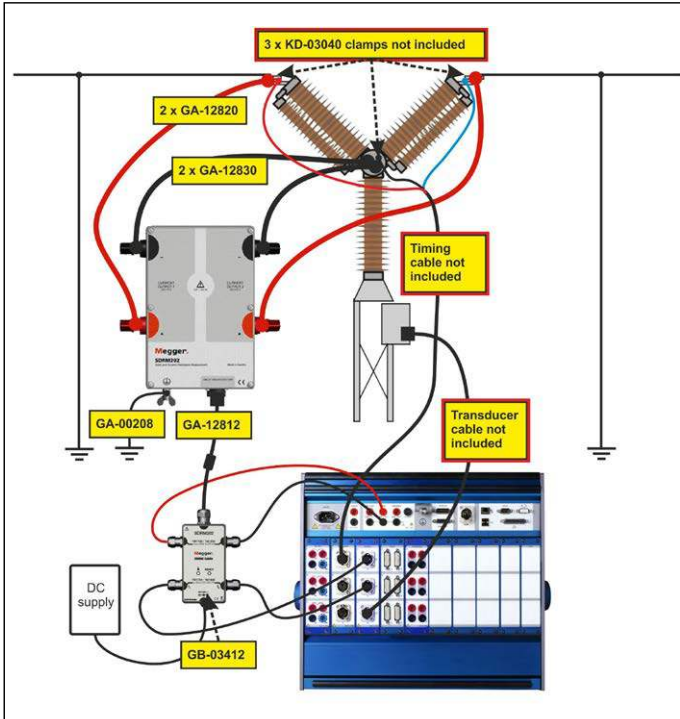
Item	Description	TM1800	TM1700	TM1600	EGIL	Art. No.
Ferrite I-shape slim						
Ferrite kit with I-shape slim ferrites		Width: 25 mm	X	X		XB-40030
	Accessory for timing of GIS circuit breakers using TM1800 with DualGround™					
	Including:					
	C-shape ferrite 7 XB-40010					
	I-shape slim ferrite (w. 25mm) 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

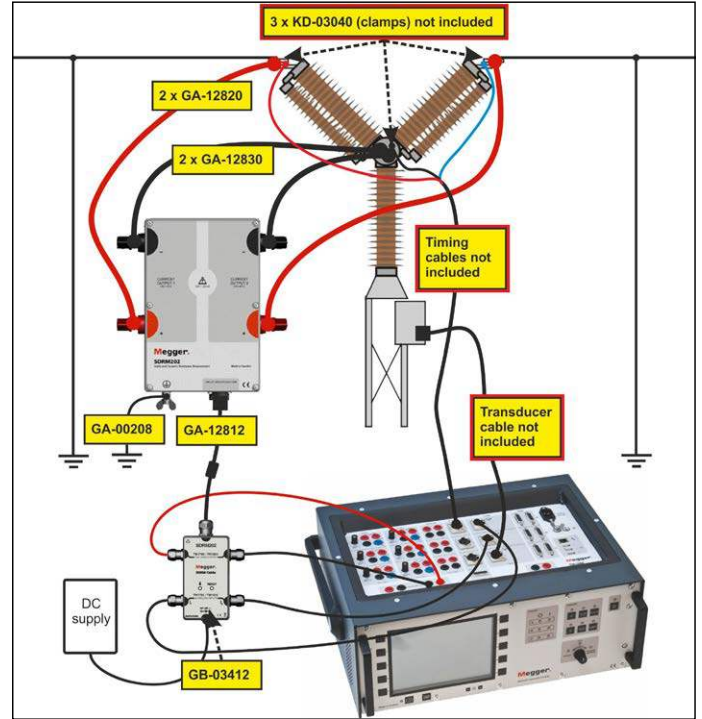
SDRM Hook-up examples and cable designations

Connecting and mounting guidance

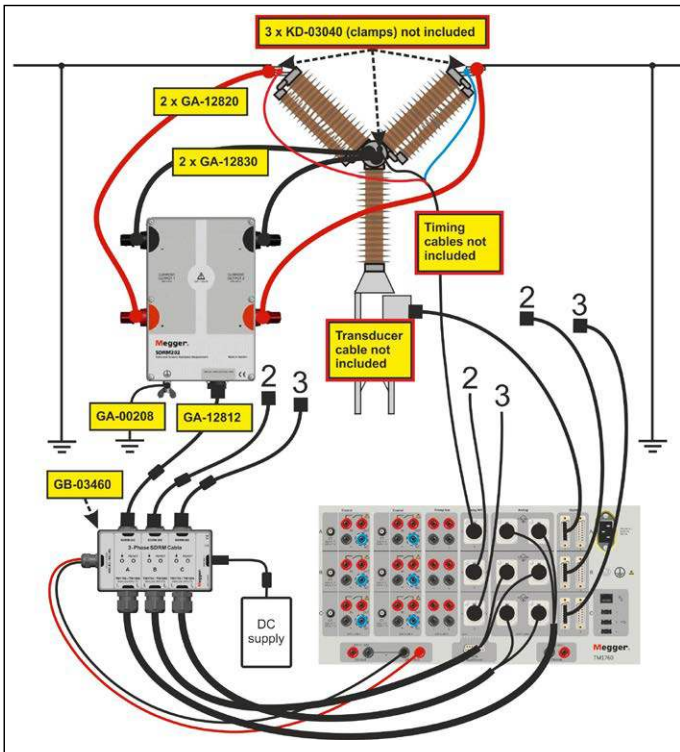
SDRM Hook-up examples and cable designations



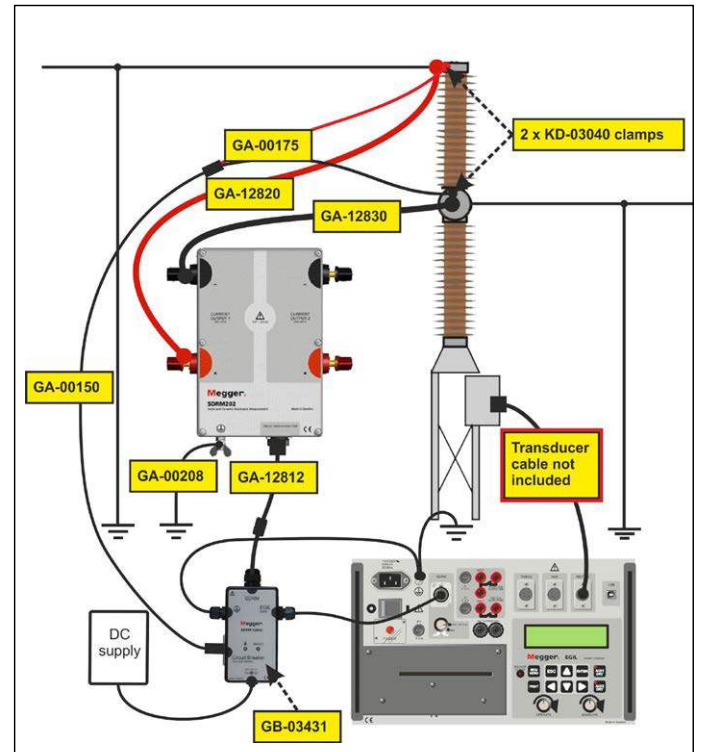
Timing cable is included with the TM1800 timing module. Transducer cable is selected together with the the type of transducer used.



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



The picture shows how a 3-phase SDRM Cable (GB-03460) is connected to one of the phases. Numbers "2" and "3" are correspondingly connected to phases 2 and 3.



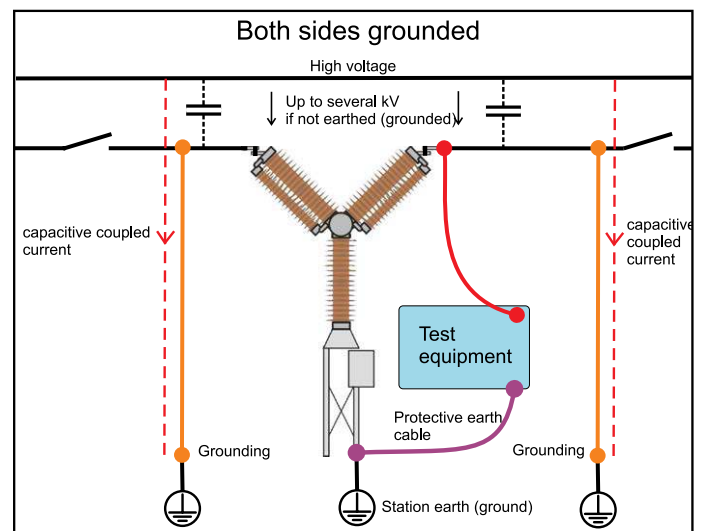
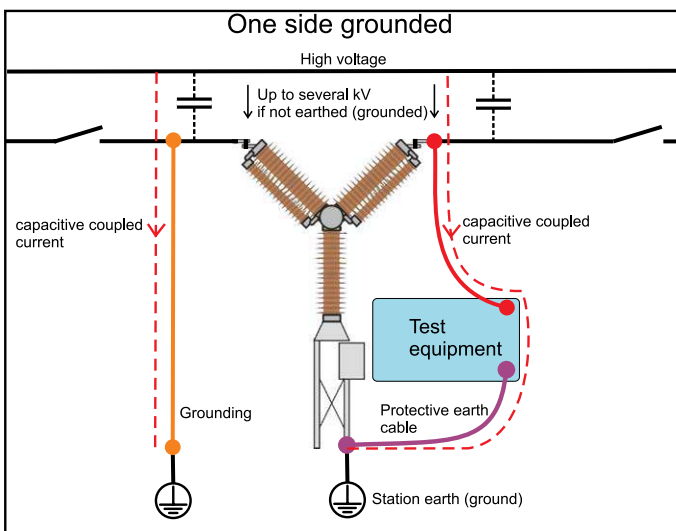
Transducer cable is selected together with the the type of transducer used.

DualGround - safe testing

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 sub-station and focus shall be on the test rather than the equipment.

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)

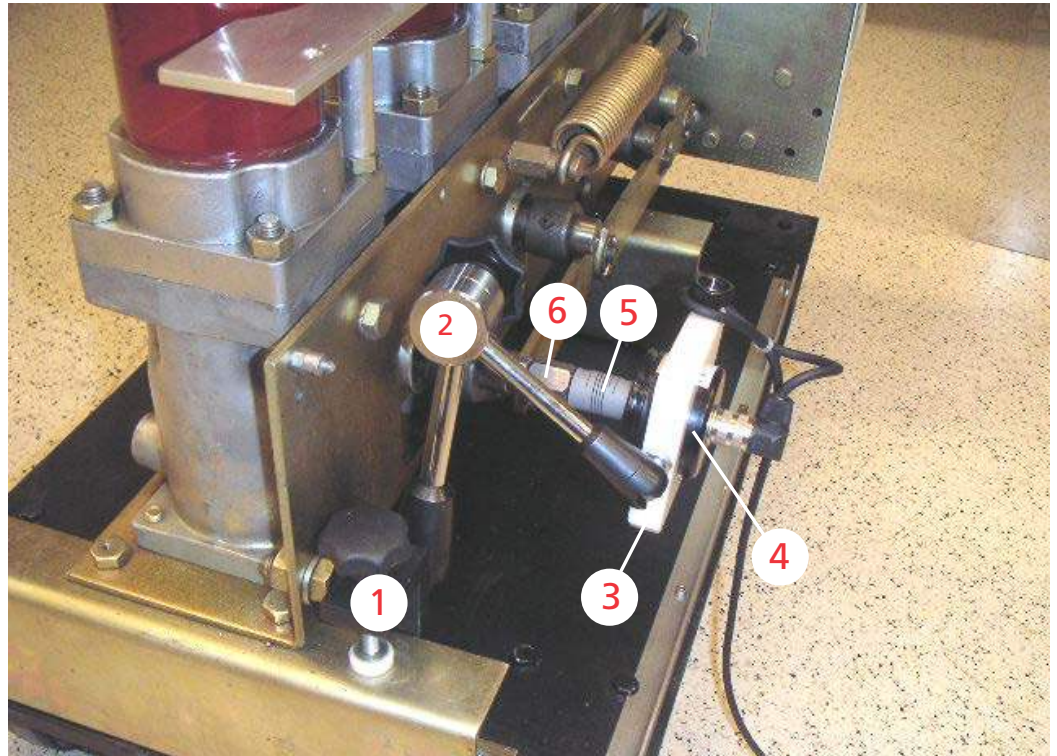


Transducer mounting examples

Transducer mounting examples

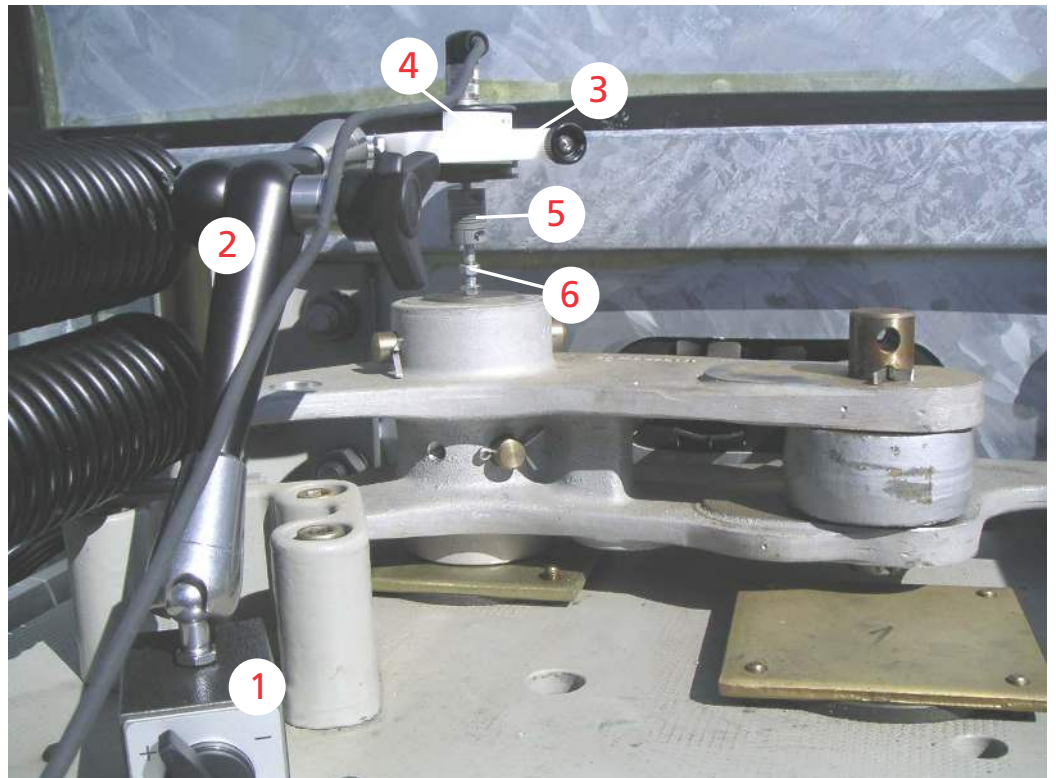
Analog transducer mounted on a distribution circuit breaker

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

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.

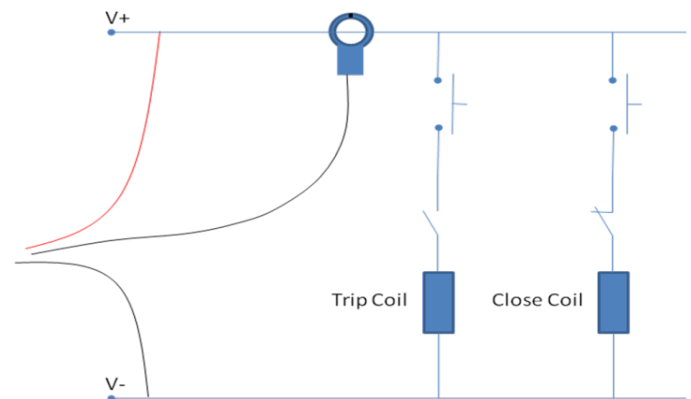


Figure 1. Point for measuring coil current and control voltage.

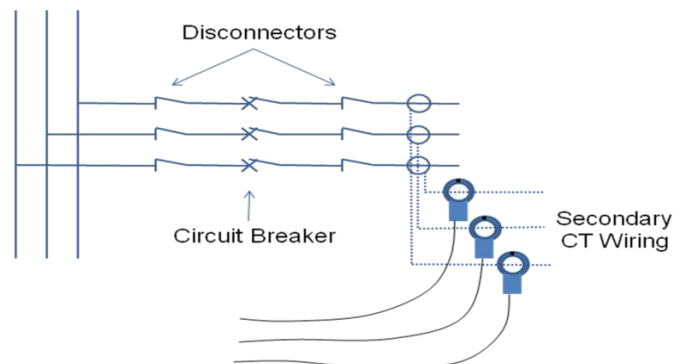


Figure 2. Points for measuring the line currents. Since the CB is in service, the conventional way with leads across the CB cannot be used. Instead, three current clamps are used on the secondary side of the current transformer for each phase.

For ordering information, see "First trip kit" on page 11.



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