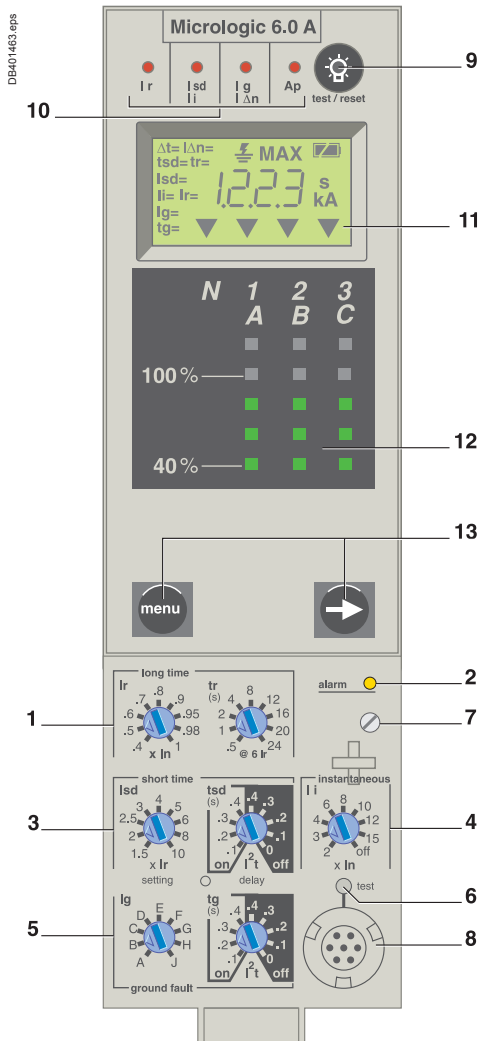


Micrologic A control units protect power circuits. They also offer measurements, display, communication and current maximeters. Version 6 provides earth-fault protection, version 7 provides earth-leakage protection.



- 1 long-time threshold and tripping delay
- 2 overload alarm (LED) at 1,125 Ir
- 3 short-time pick-up and tripping delay
- 4 instantaneous pick-up
- 5 earth-leakage or earth-fault pick-up and tripping delay
- 6 earth-leakage or earth-fault test button
- 7 long-time rating plug screw
- 8 test connector
- 9 lamp test, reset and battery test
- 10 indication of tripping cause
- 11 digital display
- 12 three-phase bargraph and ammeter
- 13 navigation buttons

### "Ammeter" measurements

Micrologic A control units measure the true (rms) value of currents. They provide continuous current measurements from 0.2 to 1.2 In and are accurate to within 1.5 % (including the sensors). A digital LCD screen continuously displays the most heavily loaded phase (Imax) or displays the I1, I2, I3, IN, Ig, IΔn, stored-current (maximeter) and setting values by successively pressing the navigation button. The optional external power supply makes it possible to display currents < 20 % In. Below 0.1 In, measurements are not significant. Between 0.1 and 0.2 In, accuracy changes linearly from 4 % to 1.5 %.

### Communication option

In conjunction with the COM communication option, the control unit transmits the following:

- settings
- all "ammeter" measurements
- tripping causes
- maximeter readings.

### Protection

Protection thresholds and delays are set using the adjustment dials.

#### Overload protection

True rms long-time protection.

Thermal memory: thermal image before and after tripping.

Setting accuracy may be enhanced by limiting the setting range using a different long-time rating plug.

Overload protection can be cancelled using a specific LT rating plug "Off".

#### Short-circuit protection

Short-time (rms) and instantaneous protection.

Selection of I2t type (ON or OFF) for short-time delay.

#### Earth-fault protection

Residual or source ground return earth fault protection.

Selection of I2t type (ON or OFF) for delay.

#### Residual earth-leakage protection (Vigi).

Operation without an external power supply.

⌋ Protected against nuisance tripping.

⌋ DC-component withstand class A up to 10 A.

#### Neutral protection

On three-pole circuit breakers, neutral protection is not possible.

On four-pole circuit breakers, neutral protection may be set using a three-position switch: neutral unprotected (4P 3d), neutral protection at 0.5 Ir (4P 3d + N/2), neutral protection at Ir (4P 4d).

#### Zone selective interlocking (ZSI)

A ZSI terminal block may be used to interconnect a number of control units to provide total discrimination for short-time and earth-fault protection, without a delay before tripping.

### Overload alarm

A yellow alarm LED goes on when the current exceeds the long-time trip threshold.

### Fault indications

LEDs indicate the type of fault:

- overload (long-time protection Ir)
- short-circuit (short-time Isd or instantaneous Ii protection)
- earth fault or earth leakage (Ig or IΔn)
- internal fault (Ap).

### Battery power

The fault indication LEDs remain on until the test/reset button is pressed. Under normal operating conditions, the battery supplying the LEDs has a service life of approximately 10 years.

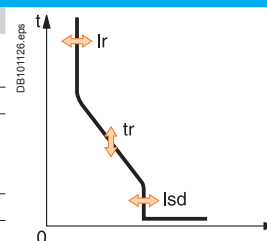
### Test

A mini test kit or a portable test kit may be connected to the test connector on the front to check circuit-breaker operation. For Micrologic 6.0 A and 7.0 A control units, the operation of earth-fault or earth-leakage protection can be checked by pressing the test button located above the test connector.

**Note:** Micrologic A control units come with a transparent lead-seal cover as standard.

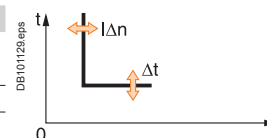
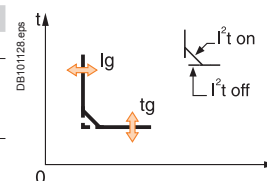
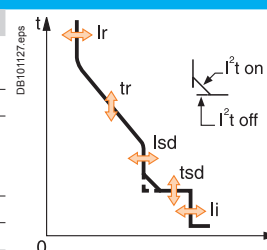
## Protection Micrologic 2.0 A

Long time											
Current setting (A)		0.4	0.5	0.6	0.7	0.8	0.9	0.95	0.98	1	
Tripping between 1.05 and 1.20 x Ir		Other ranges or disable by changing long-time rating plug									
Time setting	tr (s)	0.5	1	2	4	8	12	16	20	24	
Time delay (s)	Accuracy: 0 to -30 %	1.5 x Ir	12.5	25	50	100	200	300	400	500	600
	Accuracy: 0 to -20 %	6 x Ir	0.7 <sup>(1)</sup>	1	2	4	8	12	16	20	24
	Accuracy: 0 to -20 %	7.2 x Ir	0.7 <sup>(2)</sup>	0.69	1.38	2.7	5.5	8.3	11	13.8	16.6
Thermal memory		20 minutes before and after tripping									
(1) 0 to -40 % - (2) 0 to -60 %											
Instantaneous											
Pick-up (A)	Isd = Ir x ...	1.5	2	2.5	3	4	5	6	8	10	
Accuracy: ±10 %											
Time delay		Max resettable time: 20 ms Max break time: 80 ms									



## Protection Micrologic 5.0 / 6.0 / 7.0 A

Long time			Micrologic 5.0 / 6.0 / 7.0 A									
Current setting (A)	$I_r = I_n \times \dots$		0.4	0.5	0.6	0.7	0.8	0.9	0.95	0.98	1	
Tripping between 1.05 and 1.20 x $I_r$			Other ranges or disable by changing long-time rating plug									
Time setting		<b>tr (s)</b>	0.5	1	2	4	8	12	16	20	24	
Time delay (s)	Accuracy: 0 to -30 %	1.5 x $I_r$	12.5	25	50	100	200	300	400	500	600	
	Accuracy: 0 to -20 %	6 x $I_r$	0.7 <sup>(1)</sup>	1	2	4	8	12	16	20	24	
	Accuracy: 0 to -20 %	7.2 x $I_r$	0.7 <sup>(2)</sup>	0.69	1.38	2.7	5.5	8.3	11	13.8	16.6	
Thermal memory			20 minutes before and after tripping									
(1) 0 to -40 % - (2) 0 to -60 %												
Short time												
Pick-up (A)	$I_{sd} = I_r \times \dots$		1.5	2	2.5	3	4	5	6	8	10	
Accuracy: $\pm 10\%$												
Time setting $t_{sd}$ (s)	Settings	$I^2t$ Off	0	0.1	0.2	0.3	0.4					
		$I^2t$ On	-	0.1	0.2	0.3	0.4					
Time delay (ms) at 10 x $I_r$ ( $I^2t$ Off or $I^2t$ On)	<b><math>t_{sd}</math></b> (max resettable time)		20	80	140	230	350					
	<b><math>t_{sd}</math></b> (max break time)		80	140	200	320	500					
Instantaneous												
Pick-up (A)	$I_i = I_n \times \dots$		2	3	4	6	8	10	12	15	off	
Accuracy: $\pm 10\%$												
Time delay			Max resettable time: 20 ms Max break time: 50 ms									
Earth fault			Micrologic 6.0 A									
Pick-up (A)	$I_g = I_n \times \dots$		A	B	C	D	E	F	G	H	J	
Accuracy: $\pm 10\%$	$I_n \leq 400\text{ A}$		0.3	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1	
	$400\text{ A} < I_n < 1250\text{ A}$		0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1	
	$I_n \geq 1250\text{ A}$		500	640	720	800	880	960	1040	1120	1200	
Time setting $t_g$ (s)	Settings	$I^2t$ Off	0	0.1	0.2	0.3	0.4					
		$I^2t$ On	-	0.1	0.2	0.3	0.4					
Time delay (ms) at $I_n$ or 1200 A ( $I^2t$ Off or $I^2t$ On)	<b><math>t_g</math></b> (max resettable time)		20	80	140	230	350					
	<b><math>t_g</math></b> (max break time)		80	140	200	320	500					
Residual earth leakage (Vigi)			Micrologic 7.0 A									
Sensitivity (A)	$I_{\Delta n}$		0.5	1	2	3	5	7	10	20	30	
Accuracy: 0 to -20 %												
Time delay $\Delta t$ (ms)	Settings		60	140	230	350	800					
	$\Delta t$ (max resettable time)		60	140	230	350	800					
	$\Delta t$ (max break time)		140	200	320	500	1000					



## Ammeter Micrologic 2.0 / 5.0 / 6.0 / 7.0 A

Type of measurements	Range	Accuracy
Instantaneous currents	I1, I2, I3, IN	0.2 x In to 1.2 x In
	Ig (6.0 A)	±1.5 %
	IΔn (7.0 A)	±10 %
Current maximeters of	I1, I2, I3, IN	0 to 30 A
		±1.5 %

**Note:** all current-based protection functions require no auxiliary source.  
The test / reset button resets maximeters, clears the tripping indication and tests the battery.