



DTIVA series

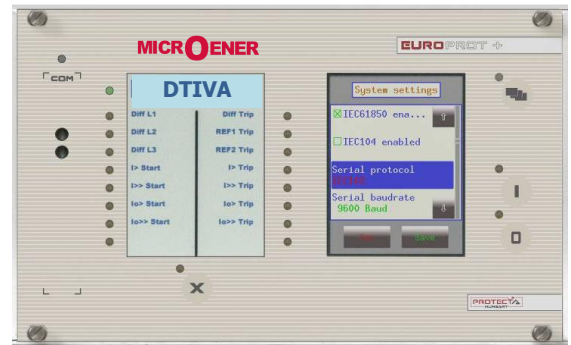
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PROTECTION OF MEDIUM-VOLTAGE INSTALLATIONS

The **DTIVA** series relays are the last generation of digital protection devices in the **PROTECTA** range proposed by **MICROENER**. They are destined for installation mainly in substations, to protect MV equipment.

These systems can be found in the following applications in particular:

- Protection of MV overhead lines
- 2 or 3-vertex line differential protection
- Protection of looped substations
- Transformer protection
- Motor protection
- Vector jump protection
- Capacitor protection



Configuration		E1	E2	E3	E4	E5	E6	E7	E71	E8	E9	E10
IEC	ANSI	/F	/D	/Fr	/L	/Di	/LD	/M	/MM F	/U	/P	C
I >>>	50	X	X	X	X	X	X	X	X			
I >, I >>	51	X	X	X	X	X	X	X	X		X	X
I Dir > >, I Dir >>	67			X	X		X					
Io >>>	50N	X	X	X	X	X	X	X	X			
Io >, Io >>	51N	X	X	X	X	X	X	X	X		X	X
Io Dir > >, Io Dir >>	67N		X	X	X		X	X	X			
3IaL >	87L					X	X					
	87G								X			
Z <	21				X		X					
I _{2h} >	68	X	X	X	X	X	X	X	X			
I ₂ >	46	X	X	X	X	X	X	X	X			
T >	49	X	X	X	X	X	X	X	X			
U >, U >>	59		X	X	X	X	X	X	X	X	X	Op.
U <, U <<	27		X	X	X	X	X	X	X	X	X	Op.
U ₀ >, U ₀ >>	59N		X	X	X	X	X	X	X	X	X	Op.
U ₂ >	47		X	X	X		X	X	X			
U ₁ <	27D							X	X			
f >, f >>	81O			X	X		X		X	X	X	
f <, f <<	81U			X	X		X		X	X	X	
f/dt	81R			X	X		X		X	X	X	
SYNC	25			X	X		X					
0 - > 1	79	X	X	X	X	X	X					
	60				X		X					
	60	X	X	X	X	X	X	X	X		X	X
CBFP	50BF	X	X	X	X	X	X	X	X		X	
3IaB >	48							X	X			
3IaB >	37							X	X			
	66							X	X			
P >	32		X	X	X		X				X	
P <	32		X	X	X		X				X	

FUNCTIONS available depending on configuration

- Max. instantaneous current protection (50)
- Timed max current protection (51)
- Max. directional current protection (67)
- Protection at max. inst. zero-sequence current (50N)
- Max. zero sequence current protection (51N)
- Protection at max. homopolar current dir. differential protection (67N)
- Generator differential protection (87L)
- Minimum impedance protection (87G)
- Inrush current detection and blocking (21)
- Protection against imbalance (46)
- Thermal image (49)
- Overvoltage protection (59)
- Undervoltage protection (27)
- Zero sequence overvoltage protection (59N)
- Protection against voltage unbalance (47)
- Positive frequency undervoltage protection (27D)
- Overfrequency protection (81O)
- Underfrequency protection (81U)
- Frequency hopping monitoring (81R)
- Synchrocheck (25)
- Automatic reset (79)
- Fusion fusible (VTS) imbalance protection (60)
- Circuit-breaker failure function (50BF)
- Engine start supervision (48)
- Undercurrent protection (37)
- Starts per hour (66)
- Min. and max. directional power (32)

TOOLS

- WEB browser (EOB and Ethernet)
- Configuration tool: EuroCAP software
- Analysis of disturbance files

DTIVA	Version	Configuration
/F	E1	This configuration enables protection of overhead lines and cables on aerial networks. The functions implemented are mainly amperometric and are completed by the automatic recloser function.
/D	E2	This configuration protects overhead lines and cables in networks with compensated or resistively earthed neutral conductors. The functions implemented are both amperometric and voltmetric, and are completed by an automatic reclosing function. Voltage measurement enables the installation of a homopolar directional element, power calculation and overvoltage and undervoltage functions.
/Fr	E3	This configuration is designed to meet the complex protection needs of overhead lines and cables on compensated or resistance-grounded networks. Features include current and voltage-based applications. The automatic reclosing function includes verification of voltage synchronization. Frequency protection functions are included.
/L	E4	This configuration is designed to meet the needs of complex overhead line protection on compensated or resistance-grounded networks. The feature set includes all current- and voltage-based applications, including distance protection. The automatic reclosing function includes synchronization checking. Frequency protection functions are included.
/Di	E5	This configuration is designed to meet the needs of complex overhead line and cable protection on compensated or resistance-grounded networks. The feature set includes all current- and voltage-based applications. The automatic recloser function and the line differential protection function complete this configuration.
/LD	E6	This configuration is designed to meet the needs of complex line and cable protection on compensated or resistance-grounded networks. The feature set includes all current- and voltage-based applications, including distance protection. Line differential protection, automatic reclosing and frequency protection functions complete this configuration.
/M	E7	This configuration is designed to meet the needs of medium-voltage motor protection.
/U	E8	This configuration is designed to monitor voltages. Based on these measurements, overvoltage and undervoltage functions are performed. The configuration is completed by frequency functions.
/P	E9	This configuration is designed for use on networks equipped with a self-generating source. Vector jump protection and functions based on voltage and current measurements, such as wattmetric functions, are made of this model.
/C	E10	This configuration is destined to protect power capacitors, based on current imbalance measurement.

New features for last-generation relays

- Separate protection and communication/HMI functions managed by two independent processors
- Linux application for communication/HMI functions
- Quick start-up of protection functions
- output relays
- Trip circuit supervision for each trip contact
- IP connector for Ethernet communication without galvanic connection
- Redundant Ethernet ports
- Adaptation of nominal input voltage and current parameters (no HW modification required)
- Advanced HMI functions via color touchscreen and integrated WEB server

Communication

- Local HMI
 - 3.5" QVGA (320 x 240) 65536 color display (optional 5.7") display
- Contactless front panel
 - Combined Ethernet and serial connector for laptop communication
- Ethernet standard
 - Point-to-point communication via contactless front panel connection
 - RJ45 twisted-pair connection to Ethernet
 - Optical to Ethernet connection
 - Optional RJ45 port on front panel
- Protocols
 - Serial port: IEC 60870-5-101/103, Modbus RTU, DNP3, ABB-SPA
 - Networks: IEC 60870-5-104, DNP3, Modbus-TCP
 - 100Base-FX and 10/100Base-TX (RJ45) networks
- IEC 61850
 - IEC 61850 compatibility (native)
 - Factory default data sets
 - GSE control blocks for GOOSE publication
- Time synchronization
 - SNTP server
 - Irig B


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Les cotes, schémas et spécifications n'engagent Microener qu'après confirmation

All these products are manufactured by PROTECTA.