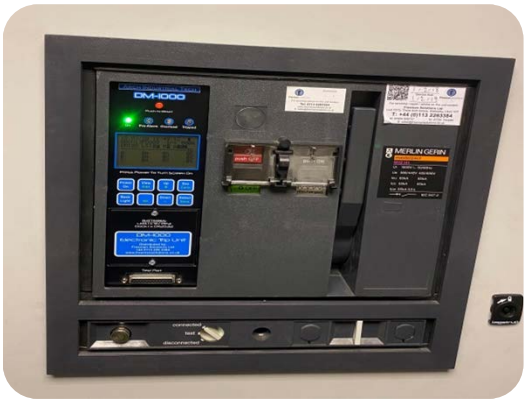
ARCH INDUSTRIAL TECHNOLOGIES LTD

DM-1000

Fully Programmable Electronic Trip Unit for Masterpact® M Type ACBs



Replace your existing STR Trip Unit with confidence using the fully programmable, retrofittable, DM-1000 Electronic Trip Unit.

The DM-1000 ETU replaces the Masterpact® M OEM's STR type trip units which, from the reported experience of many Customers, suffer from non-repairable, spurious, nuisance tripping problems. The DM-1000 is form-fit manufactured to make retro-fitting the trip unit device as easy and as fast as possible and utilises the existing current sensor connections of the Masterpact® Air Circuit Breaker (ACB).

This UK designed and manufactured unit benefits from the advances in recent modern electronics technology allied with British electrical switchgear design practices and philosophy, giving high priority to safety, reliability and performance. The design team is led by a Technical Expert who has over 47 years of experience of LV Switchgear Technology design, and is one of the few world experts who are specialists in the design of both ACBs and their Electronic Trip Relays.

"Class Leading Performance – fully functional at only 2% on 3 phase load"

The DM-1000 can be programmed to model any of the five original manufacturer's STR type trip units* found on the Masterpact® M ACB, such as the STR18I, STR18M, STR28D, STR38S & STR58U giving you the same settings and options available on each model as the original, making the replacement of an existing STR type trip unit an easy task without need for setting recalculation or a costly protection study. If you want something different, the DM-1000 can also be programmed to utilise any combination of the settings and options available, making this a very versatile protection unit, which can be used on any Masterpact® M frame (08 – 63), any CT rating (200 – 6300A), any breaking capacity type (N1 / H1 / H2 / L1), poles (3 or 4), fixed or drawout construction, and frequency (50 / 60Hz) system without requirement for changing of rating plugs.

With class leading innovative internal power management & efficiency the DM-1000 is fully functional (monitor, measure, display with ability to trip) from as little as 2% on three phase load, and 8% on single phase load - without need for external 24VDC supply – making it a clear leader amongst the competition. The main benefits of this advancement are that the User can see what current is flowing at far lower values than on other units – as well as being able to set the Ground Fault trip setting down to its lowest setting (0.1 x In) and maintain all its protective functions without an external 24VDC power supply being used.

In addition, the large 21 character x 8 row backlit LCD display can show all four phase currents with their percentage of Ir, and when in overload, the Thermal Content % - as well as date & time, battery status, the ACB's main characteristics, Long Time (LT) Ir value, the Trip Unit "modelled", and all the protective functions and options' ON / OFF status'.

If a fault trip is experienced, the unit displays a time-stamped trip screen with details of the protection type tripped on, and all the phase current values at point of tripping. In fact, the DM-1000 can store hundreds of time-stamped events in its logs covering fault trips, test trips, cascaded setting changes, and servicing.

** Using standard Current Sensors. This excludes the different sensors used on the STR68U which are not compatible with the DM-1000*

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Units Modelled, Protection Types, Settings & Options

Each of the five modelled "STR" types contain all the protection functions, settings and options available to the original units so that the functionality and settings of the unit being replaced can be matched completely.
Available within the firmware (dependent on modelled unit selected) and hardware design are the following protection types:

Trip Units Modelled: DM18I / DM18M / DM28D / DM38S / DM58U

Long Time Protection Settings (Programmable)
LTD Pick Up 0.4 to 1.0 x In
LTD Time Delay 15 – 480s (@1.5 x Ir)

Short Time Protection Settings (Programmable)
STD Pick Up 1.5 to 10.0 x Ir
STD Time Delay 0.0 to 0.4s with I^2t OFF, 0.1 to 0.3 with I^{2t} ON

Instantaneous Protection Settings (Programmable "I" plus DIP switches to set HSI element)
INST Pick Up 1.5 to 28.0 x In
Software based (I) *1.5 to 10.0 x In*
Hardware based "High Speed" (H) *6.0 to Max ACB setting*

Ground Fault Protection Settings (Programmable)
GF Pick Up 0.1 to 1.0 x In (or 1200A max)
GF Time Delay 0.1 to 0.4s with I^2t OFF and 0.1 to 0.4s with I^2t ON

Phase Imbalance Protection Settings (Programmable)
PI Pick Up 0.25 to 0.70 x Ir
PI Time Delay 1 to 90s

Making Current Release / DINF Protection (Hardware based via dip switches on installation)
MCR Pick Up Set to breaker parameters

Protection Functions and Options Available Per Model

PROT		DESCRIPTION	DM18I	DM18M	DM28D	DM38S	DM58U	DM100
L	LTD	Long Time Protection	No	No	Yes	Yes	Yes	Yes
S	STD	Short Time Protection	No	No	No	Yes	Yes	Yes
I	INST	Instantaneous Protection	No	Yes	Yes	Yes	Yes	Yes
G	GF	Ground Fault Protection	No	No	No	Yes	Yes	Yes
P	PI	Phase Imbalance Protection	No	No	No	No	No	Yes
M	MCR	Making Current Release Protection	Yes	Yes	Yes	Yes	Yes	Yes
H	HSI	High Speed Instantaneous Protection	No	Yes	Yes	Yes	Yes	Yes

Options Available Per Model

OPTION		DESCRIPTION	DM18I	DM18M	DM28D	DM38S	DM58U	DM100
A	ALR	Pre-Trip Alarm Contact	No	No	Yes	Yes	Yes	Yes
V	FV	Segregated Fault Trip Alarm Contacts	No	No	No	No	Yes	Yes
R	R	Load Monitoring Contacts	No	No	No	No	Yes	Yes
C	COM*	Modbus Comms over RS-485	No	No	No	No	Yes	Yes
Z	ZSI	Zone Selective Interlocking	No	No	No	No	Yes	Yes

** Only available on the DM-1000C Modbus Comms unit.*

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