



SERVICE AND RETROFIT REPLACEMENT OF MOTOR-DRIVE UNITS.

TRANSFORMER CONTROL





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THIS PROPERTY BELONGS TO
NATIONAL BUREAU OF MALAYSIA

1375266

MR

Warning symbols and technical specifications.

IMPROVING RELIABILITY – REPLACING OLD DRIVES WITH TAPMOTION® ED.

Is your on-load tap-changer functioning perfectly but your motor-drive unit problematic? Is your motor-drive unit getting on a bit, often requires maintenance, and spare parts are getting harder to find? Or would you like to integrate a voltage regulator or monitoring system and so need a more intelligent drive?

The TAPMOTION® ED motor-drive unit is the ideal solution for all these tasks. We offer various adapter and console solutions for replacing any motor-drive unit, be it an old MA2, 3 or 4 MR drive or third-party drives from ACEC, Alsthom, Elin, Elprom, or Trafo Union.

Of course, we also replace the drives in de-energized tap-changers and arc suppression coils. Once the work is complete, you have a maintenance-free motor-drive unit in proven MR quality, offering maximum reliability.

Combining the essential with the useful. We do more than just maintain on-load tap-changers.

When replacing the motor-drive unit, why not also undertake on-load tap-changer maintenance? You could also change other transformer components at the same time. And why not take important diagnosis measurements too? If the MR service specialists are already on site, they can easily take on other work.

Here are just a few examples of what we can do:

- On-load tap-changer function check, e.g. with TAPSCAN® DRM, or vibro-acoustic measurements
- Maintenance or replacement of on-load tap-changers
- Modernization of voltage regulators, e.g. with modern protocols
- Installation of monitoring systems, as well as ISM® (Integrated Smart Module) in the motor-drive unit
- Measurement and diagnosis of high-voltage bushings
- Diagnosis measurements on the transformer; oil sampling including diagnosis
- Fitting the transformer with zero-maintenance components, e.g. maintenance-free dehydrating breathers, pressure relief devices, or display units

If work is undertaken on a large scale, we will of course handle the complete project, including documentation.



REPLACEMENT BY EXPERTS.

Good preparation and experienced service experts are key to a smooth replacement. Adaptation work is often needed on site, especially with older drives. We have already successfully completed hundreds of replacement projects. This experience helps us always find the best solution for you.

After gathering all the necessary data, our specialists provide a quotation. Photographs of the old drive are very useful and let us see how much space is available.

If well prepared, replacement is a fast action. Here is a typical process. The photos below show a motor-drive unit manufactured by Trafo Union (TU) being replaced.



MR drives

MA2, MA3, MA4,
MA7, MA9, ...

Serial number from
the nameplate

Drives of other manufacturers

EM1, MA-E, MA-S, MAC,
MLG, MZ, ...

Data acquisition, including
photos; dimensions, course of
shafts and cables, techn. data

Disconnection and removal of the old drive, including shafts

Fitting of bracket and/or adapter if needed

Mounting of new motor-drive unit with shafts

Connection of new motor-drive unit; adaption of cables if necessary

Commissioning including operational tests and transformer ratio test

OVERVIEW OF THIRD-PARTY MAKES.

We replace all old motor-drive units, regardless of manufacturer. We also provide a wide range of adapter solutions. In some cases, there is even a standard solution, i.e. a motor-drive unit with a reduced scope of function. Our technical order processing department will happily clarify whether this variant is suitable for your application.

Manufacturer (selection)	Types (selection)
ACEC	MP10, MP20
AEG	MA I, MA II
Alsthom	MAC17, MAC27
ASEA	BUB 1; BUCSx, BUE-x, BUF-x
Elin	MLG 3, MLR 3, MLG 5, MLG 51
Elprom*	MZ-2, MZ-4x
ELTA	NS-3z
Rade Končar	2ZMT27
Siemens/Trafo Union	MA-E/x, MA-Sx; MD-S; MD-x
TRO	EM1, MA8
Under license (Electroputere, Fuji, Ganz, G.E.E., Hyosung, Mitsubishi, TUSA, ...)	MA2, MA3, MA4, MA7/8, MA9

*'Life Time Extension' variant with reduced function on request

Naturally, we also replace motor-drive units for bolt-on tap-changers, especially in North America. The tried and tested MD II and the extended MD III variants are suitable for this.

Arc suppression coil (Petersen coil) with AEG motor-drive unit before replacement.



GOOD WORK. OUTSTANDING REFERENCES.

When replacing on site, we find the optimum solution to every problem. No matter whether coupling sleeves need adapting or terminals need replacing – good preparation, appropriate tools, and the right spare parts guarantee a successful job. Here is a small selection of our projects:



*REFERENCE: Latvia
Customer: Latvenergo
Replacement of old Elprom MZ motor-drive unit with TAPMOTION® ED, in collaboration with Energo Remonts (ERR). A Bulgarian RS4 on-load tap-changer was replaced with an OILTAP® MSE III 340Y at the same time.*



*REFERENCE: Germany
Customers: Various 110 kV network operators
Replacement of old motor-drive units with TAPMOTION® ED by MR service technicians, including installation of the (universal) adapters.*



*REFERENCE: Malaysia
Customer: HV network operator
Replacement of an Indian on-load tap-changer and motor-drive unit on a 30 MVA, 132/11 kV transformer by Reinhausen Asia Pacific, acting as general contractor. Carried out in 2013 within 5 days.*

NUMBERS THAT SPEAK FOR THEMSELVES.

What makes our service so special? Impressive facts.

150
certified
service engineers

4000
service deploy-
ments a year

24
hours
a day

15
service centers
around the globe

7
days
a week

5
continents –
5 training centers

Expert service from service experts

- Replacement of all makes, MR or third-party manufacturers
- Over 150 certified service engineers worldwide
- Replacement by trained and certified MR experts
- 24-month warranty for all work undertaken by MR



Quality as standard

- The TAPMOTION® ED motor-drive unit offers maximum reliability and zero maintenance; more than 100,000 installed drives prove how popular it is
- Well-thought-out ventilation and heating concept (anti-condensation heater)
- Various special items are possible, be it a TAPCON® ISM® voltage regulator or monitoring solutions ranging from the ISM® (Integrated Smart Module) data collector to the TAPGUARD® or TRAFUGUARD®

Replacement work made simple

- Adapter solutions for motor-drive units from AEG, Elprom, Siemens/Trafo Union, and TRO simplify the replacement process
- Various universal brackets available
- Displacement gear units, intermediate and bevel gears make all conceivable ratios possible

A good overview

- Combination of services including maintenance work on the on-load tap-changer or transformer
- Rapid on-load tap-changer diagnosis via vibro-acoustic measurement or TAPSCAN® DRM
- Fitting the transformer with zero-maintenance components, e.g. indicator devices

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THE POWER BEHIND POWER.

