



# Instruction Manual

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## **IMPORTANT CUSTOMER NOTICE**

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## Energy Maintenance Technologies Ltd Asset Protection Specialists

### Introduction

**Energy Maintenance Technologies Limited** supply a range of Instrumentation, consumables and related services to the Electricity Supply Industry (ESI) to maintenance and support personnel, whose role is to protect, preserve and enhance the life of people, plant and equipment assets within their responsibility.

The people at EMT Limited are driven to source the very best technologies coupled with the best service and support to meet our client needs. With over 35 years experience of supplying asset management solutions to the electricity market, we feel that we are very well qualified to provide help and assistance with all of your asset protection needs.

Present and future plant requires high quality and purity insulating oils and SF6 gas at the point of use. With increasing voltage and temperature stresses of modern plant as well as more demanding environmental regulations, it is imperative that insulating medium inside your plant is properly maintained and serviced at regular intervals.

At EMT, we can help you get the most from your valuable asset by discussing your issues and providing appropriate cost effective solutions to meet your needs. Whether your requirement is portable or fixed, we have a wealth of experience and knowledge gained through partnerships with industry professionals. We are confident that we can help you achieve your asset management objectives.

Our ASSERO range of Oil and SF6 testing products are world leading technologies, developed with industry professionals from around the world with many years of experience in this field so that you, our customers, can make a more informed choice.

Our team of experienced professionals have spent many years developing answers to the problems faced within this industry and we are confident that we will have a solution that suits your needs.

Our partners are also world leaders in their respective fields and we are proud to promote our products to you, our customers.



Neil Kane

Managing Director

[www.emt.uk.com](http://www.emt.uk.com)



## SAFETY INFORMATION

Caution and warning statements could be used throughout this book to draw your attention to important information.



### **Warning!**

This statement appears with information that is important to protect people and equipment from damage. Pay very close attention to all warnings that apply to your application.



### **Caution!**

This statement appears with information that is important for protecting your equipment and performance. Read and follow all cautions that apply to your application.

## RECEIPT OF YOUR INSTRUMENT

When receiving the instrument, carefully check the outside packing carton for damage that may have incurred during shipment. If the carton is damaged, notify the local carrier and submit a report to the factory or distributor. Remove the packing slip and check that all ordered components are present and match your specifications (as ordered). Do not return any equipment to the factory without first contacting TechnicalSupportCenter.

## DEFINITIONS USED IN THIS MANUAL

The following terms are used frequently in this manual. They are presented here with their definitions for your information.

Flowratesetpoint—the command or control signal supplied to the mass flow controller, MFC, is called its setpoint. The controller will maintain the flow at this value. The flowrate will be used for the automatic filling process.

Flushratesetpoint—the command or control signal supplied to the mass flow controller, MFC, is called its setpoint. The controller will maintain the flow at this value. The flushrate will be used for the manual flush option.

P.target—Target pressure, the desired pressure to which the switchgear will be filled.

P.begin—Begin pressure, the pressure measured before filling/topping up.

P.currentl—The real time pressure.

End Pressure—End pressure, the pressure after TopUp routine finished.

Time Finish Buzzer—Time in seconds the TopUp finished buzzer will sound.

Time Equalizer—Time in seconds the system waits for the pressure to equalize.

Offset—Value added by target pressure after each equalizing

MFC—Mass Flow Controller.

IPL—MFC Inlet Pressure Low.

Tot—Totalizer, the amount of SF6, in f.i. Kg, used for filling/topping up.

GPRS—General Packet Radio Service

IO Modules—Input/Output analog signal modules

HMI—Human machine interface

## Chapter 1: Introduction

The SF6Smartfill unit is designed to automatically fill and/or top up leaking SF6 Switchgears to their operating pressure range. Leaking SF6 (sulfur hexafluoride) gas switchgears are problems which a lot of companies worldwide have to cope with.

SF6 is an expensive commodity and critical asset which can have a major environmental and detrimental effect if released into the atmosphere.

EU regulation, EC842 has been introduced to control and limit SF6 leakage plus keep accurate records of SF6 inventory and usage. Therefore, concise measurement and control of SF6 usage is essential.

The SF6Smartfill provides full traceability of the used SF6 gas by records exactly how much SF6 gas has been used during both filling and topping up operations.

The key features of the SF6Smartfill offer a major improvement compared to existing SF6 Gas maintenance handling procedures currently being utilized throughout the world.

### **Welcome to the future of automated filling/topping up Circuit Breakers and associated Switchgears with SF6 gas**

Visit our website [www.emt.uk.com](http://www.emt.uk.com) any time for more information about our SF6 product range.

The SF6Smartfill instrument offers a variety of features for ease of operation.

- ✓ **Once setup, fully automated (unattended) operation.**
- ✓ **Portable.**
- ✓ **Battery operated at least 3 hours.**
- ✓ **When finished it shows the end pressure and total SF6 gas utilized.**
- ✓ **Datalog, different parameters are stored after finished filling.**
- ✓ **USB connectivity**
- ✓ **Wifi connectivity for remote operation**
- ✓ **Traffic Light, for indication during fill/top-up**
- ✓ **GPRS/Mifi (Mifi = Mobile WiFi)**
- ✓ **Easy to use.**
- ✓ **And much more...visit...www.emt.uk.com.**

**FOR MORE INFORMATION CONTACT EMT @ WWW.EMT.UK.COM**