

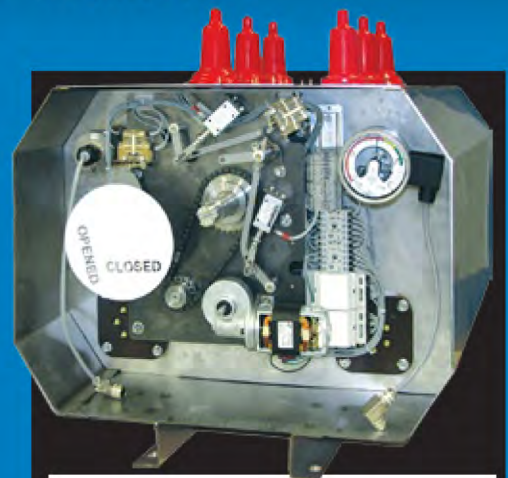


# SU-3G Urban Submersible **Fast Switch**

standard 30" manhole



**RV 54**



Manufacturer:	Mevoco
Model:	RV 54
Manufacturing date:	Feb-2008
Serial number:	265-420-056
Rated voltage:	15.5 kV
BIL rating:	95 kV
Continuous current:	900 Amp
Load interrupting current:	900 Amp
Momentary current:	40 kA sym
Close&Latch:	40 kA sym 63 kA asym 104 kA Peak
Total weight:	262.5 lbs
Insulating medium:	SF <sub>6</sub> -low press. Sealed for life
Ambient operating temp.	-30°C to +50°C
Norm:	IEC62271-200 ANSI/IEEE Std C 37.74-2003

**15kV, 900 AMPS, 40kA , 3.0 CYCLES**



# SU-3G Urban Submersible **Fast Switch**

**Low pressure double sealed for life SF6 Load Break Switch.  
Internal Electrically operated stored energy drive mechanism.  
3 cycle operation in both close and open directions.  
Compact - Fits down a **standard 30" manhole.****

The **SU-3G** Fast Switch was developed under an R&D contract with Con Edison of New York.

The **SU-3G** specifications emerged from one of the worlds most electrically dense, environmentally challenging, utility vault conditions.

The **SU-3G** Submersible Fast Switch is the perfect below grade (or flooding area) choice for network feeder sectionalizing and alternate source pick up. The extended electrical capabilities of the **SU-3G** attain ratings of 900 amps continuous, 900 amp load break, 40kAIC symmetric close and latch with a peak of 104kAIC.

The built in self powered electrically operated stored energy mechanism provides an operating time of 3 cycles both close and open. Two switches operating in coordinated tandem can transfer power within one cycle. **The SU-3G is truly a Fast Switch.**

**Distribution engineering** should find this to be an excellent opportunity to improve Capital Utilization, Increase Power Density, Increase Operating Flexibility, Maintain Reliability and Customer Service, and save a quantifiable amount of cost and space in one of the world's most precious underground environments - "Urban Utility Vaults".

By employing the latest materials technologies and manufacturing capabilities the **SU-3G** Urban Submersible fast switch is miserly in its space requirements yet maintains the highest electrical ratings.

Its electrical operator and optionally available on-line monitoring functions allow Utilities to see the entire System Environment surrounding the **SU-3G**. With the optional ability to see and report in real time three (3) currents, up to six (6) voltages and position status locally and remotely the **SU-3G** allows for complete System Automation, System Reconfiguration and if properly engineered - the topology can be "self healing".

## 15kV, 900 AMPS, 40kA , 3.0 CYCLES

Interrupts 50 Amp cable charging  
Interrupts 21 Amp magnetizing current

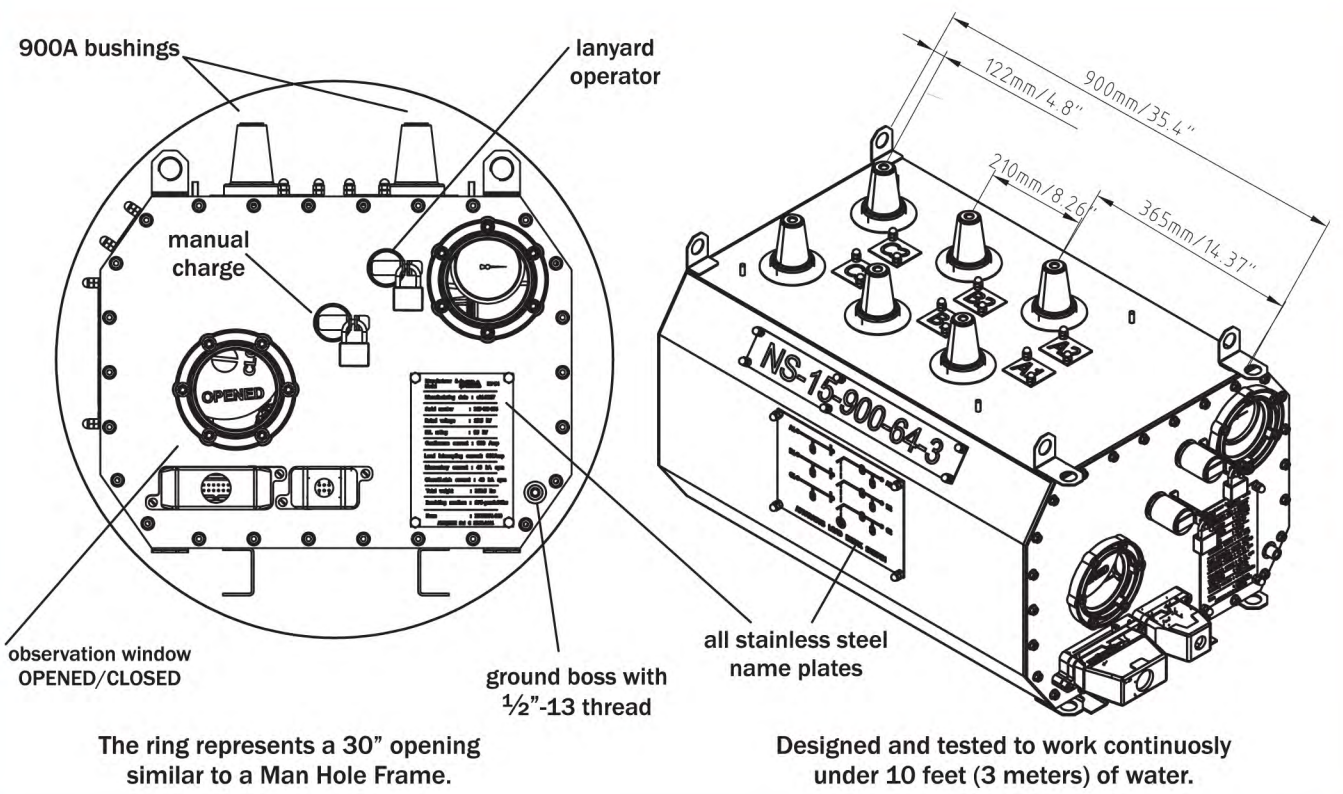
The SU-3G is encased in a robotically welded stainless steel enclosure, coated in a multi-layered Amerilock epoxy paint system.

The compartmentalized gas and water tight enclosure design electrically isolates the switch and control sections in a solidly grounded stainless steel enclosure.

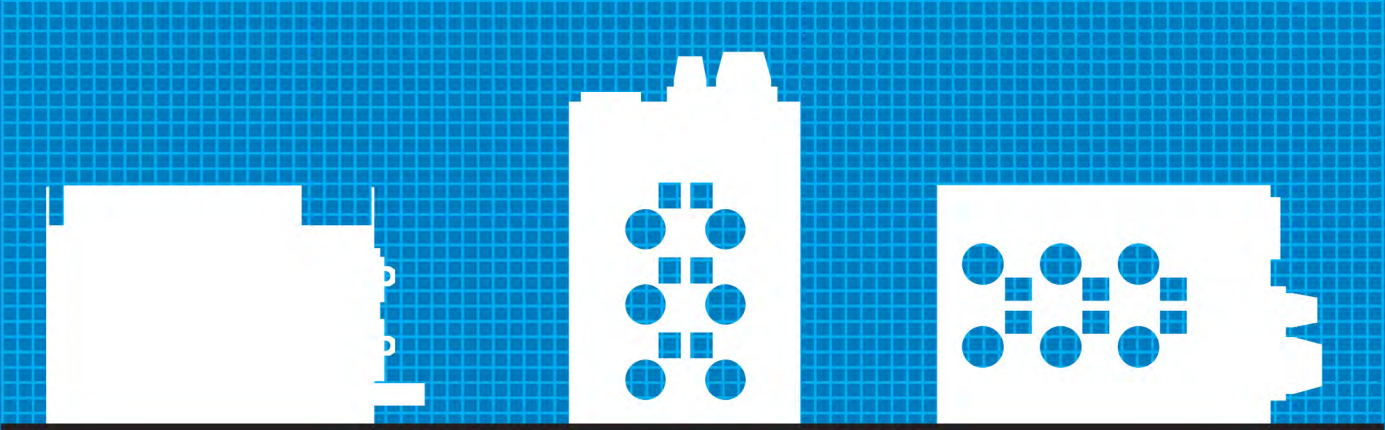
Double sealed for life, SU-3G's are 100% vacuum chamber pressure tested.







The **SU-3G** can be mounted in any plane to enhance cabling, space and safety of personel's movement

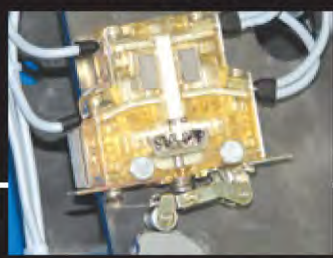


The SU-3G has both pressure and density monitoring with local and dual remote indication.

The extremely rugged SU-3G fast mechanism is designed to require a minimum of attention.

The SU-3G provides multi layered protection via employment of redundant heavy duty 20 amp auxiliary contacts.

Two sets of 50VA open delta PT's provides three phase synchronizing voltage as well as self produced redundant control power.





# Environmental, Health and Safety

- Double "Sealed for Life" low pressure (1.5 Bar) SF6 design.
- Only 3.3 lbs of Sf6 completely purge and reclaimable at end of service life.
- Robotically welded stainless steel enclosure.
- Tested for 6 days under 10 feet of water for 2,000 motor charge and associated switch operations.
- Redundant SF6 low pressure AND SF6 low density alarm contacts.
- Large local SF6 pressure metering indicator face behind observation window for in-vault personel.
- Large semaphore switch position indicator behind observation window for in-vault personel.
- Local padlockable "out of hole" lanyard operation lever (for District Operator lock-out / tag-out).
- Local Electrical operation via optional handheld pendant operator.
- Internally mounted CT resistors prevent inadvertent open circuit CT conditions.

## Cutting Edge Technology Fast and Powerful

The SU-3G will close or open in less than 3 cycles and electrically recharge within 15 seconds there after.

The SU-3G was KEMA tested to close and latch on a 104KA peak fault. Exceeding all standards, the SU-3G test sample closed in on 5 such faults within a 30 minute period.



Phase		1	2	3
Make time	ms	39,1	39,1	40,1
Pre-arcing time	ms	0,312	0,320	-0,616



Phase		1	2	3
Applied voltage	kV		15,5	
Peak value of current	kA	106	-104	-61,2

### Rugged and Self Sufficient

- 3mm robotically welded stainless steel enclosure
- Water tight to a depth of 10 feet
- Harting submersible connectors
- Sealed for life low pressure SF6 design
- 900 amp Std, IEEE 386 bushings
- Produces its own control power

### Communicative

- Four (4) open delta 50VA Pt's built in for 3 phase voltage on both sides of switch
- 3-CT's
- Auxiliary position contacts • 20 Amps
- Pressure switch
- Density switch with local indication

### Flexible

- Internal Electrically operated self powered stored energy fast mechanism
- Local "out of hole" mechanical operation
- Local "out of hole" electrical operation with pendant operator (optional)
- Umbilically coupled control cabinet with metering - protection - for advanced self healing SCADA software (optional)



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# SU-3G Urban Submersible **Fast Switch**

**The Highest  
Industrial  
Quality**



## **Street Smart**



Dual clamping shock mountings absorb all vibrations due to normal switch operations, faults, traffic, sub-ways, potential nearby construction.

## **Finest Sub-components**



Double circumferential spring tensioned "O" rings seal precision milled main operating shaft.

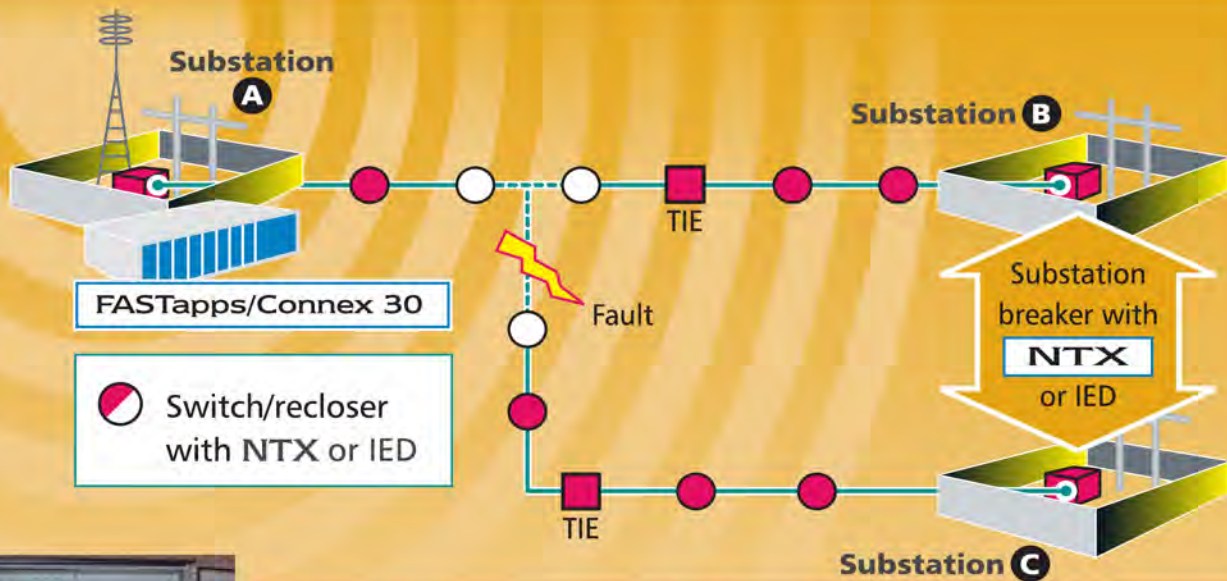
## **Advanced Quality Manufacturing**



Custom designed machinery control perimeter torque as cover "O" rings are compressed.



**Optional Control Power Cabinet with available  
metering - protection - control - communication  
for self healing SCADA**



The SU-3G Urban Submersible **Fast Switch** can be ordered with an Advanced Control Systems (ACS) NTX to automate the switch for remote monitoring and control, providing a highspeed, certified DNP3, Level 2 compliant communications interface. Coupled with the optional ACS AC analog input module (AIM), which provides the essential 3phase power calculations, fault detection and fault direction measurements, the NTX is an economical solution for feeder automation- including field-based fault detection, isolation and restoration.

With this fault detection monitor and control, your distribution automation system can isolate and plot alternate distribution paths around faulty circuits. Trouble-spots display at the control center giving operators precise location information for dispatching service personnel.

Whether using the FASTapps™ technology (developed by ACS) at the substation or conventional FDIR from centralized masters, the NTX and AIM provides the necessary interfaces for SCADA automation ready SU-3G Fast Switches. The result is shorter service interruptions, affecting smaller areas.

**The SU-3G Fast Switch has many available options, including: “out of the hole” operating pendent and the SU-3G control cabinet with optional battery back up, communications, SCADA interface, and more.**

DW540316

**MEVOCO**  
MEDIUM VOLTAGE COMPONENTS

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