

FSET - C

Fusion Substation - Central



MEINS



Custom design based on
customer requirements



Oil collection
tank included



Made in Europe



Transportation &
unloading included

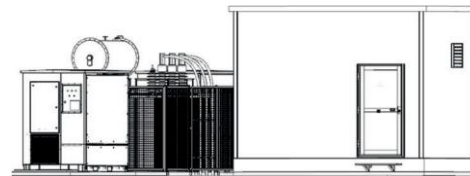
Meins FSET-C is a disruptive technical concept that combines the scope of a traditional 45 / 20 kV substation and a 20 / 0,63 kV power station in a 45 / 0,63 kV plug and play solution that can be rapidly installed on site. It is specially designed for small and medium-sized photovoltaic installation with grid connections of 45 kV, with the main purpose of reducing CAPEX and OPEX costs.

The solution consists of two main structures:

- Precast concrete building housing the 45 kV MV switchgear and auxiliary equipment.
- Concrete skid containing the power transformer and central inverters, including the oil collection tank and a perimeter fence.

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Technical specifications

Transformer	
Transformer type / Cooling	ONAN
AC power	Tailored -> Up to 10 MVA (30 °C)
Vector group	Ynd1d11
Primary rated voltage / (Um / U AC / U LI)	45 kV (52 – 95 – 250kV)
Secondary rated voltage / (Um / U AC / U LI)	630/690-630/690 V (3,6-10-20 kV) *Depending on the inverter model selected
Frequency	50 Hz
Tap changer	DETC / $\pm 2,5 \pm 5 \pm 7,5 \pm 10 \%$
No-load losses	UE548/2014 TIER 2
Load losses	UE548/2014 TIER 2
Ucc % (HV/LV1-LV2 / HV-LV1 / HV-LV2)	-% / -% / -%
Winding material	Al / Al
Others	Thermometer, PT 100 bushing, Buchholz relay, level sensor, overpressure valve, filling and drainage valve, grounding terminal, lifting lugs
MV switchgear	
Insulation type	SF6
Rated voltage / (Um / U AC/ U LI)	45 kV (52 – 95 – 250kV)
Rated current	630 A
Maximum short circuit current	25 kA / 1s
Configuration	Tailored: according to customer needs
Transformer protection device	P5F30 or similar (ANSI 50, 51, 50N, 51N, 27, 59, 81U/O, 86, 87T)
Others	Voltage presence device, motorized CB, closing coil, 1st & 2nd trip coil + undervoltage, bushing type Pfisterer, grounding terminals, grid analyzer
Inverter (2x)	
Model	According to customer needs
Auxiliary transformer & Auxiliary panel	
Auxiliary transformer	25 kVA, 3F/3F+N, Dyn11, 800 V / 400 V, Ucc: 3,5%
Protections	According to SLD
Other features	PLC for signal monitoring, SPD II, Unmanaged ethernet switch Optional: OF manager switch + patch panel + pigtail
Miscellaneous	
Miscellaneous	UPS 3KVA 60', ventilation and heating system + fire an anti-intrusism detecting system, security tools, perimeter fence (optional), transformer oil retention tank with carbon filter (optional), outdoor lightning with motion sensor
General	
Structure material	Reinforced and vibrated concrete
Dimensions (L x H x W)	Switchgear enclosure: 4860 x 3670 x 3100 mm / Transformer skid (Optional): 4650 x 1050 x 2950 mm
Weight	Switchgear enclosure: 25 Tn / Transformer skid (Optional): 35 Tn
Operating temperature	-15 °C ~ 60°C (-13 °F ~ 140 °F)
Protection rating	IP54 / C5 metalworks / C4H transformer / C3 MT switchgears
Humidity range	0% ~ 95%
Maximum operating altitude	2000 m (higher altitude available as optional)
Standards	IEC 60076, IEC 61439-1, IEC 62271-200, IEC 62271-202, MIE-RAT, ITC-BT, ITC-LAT