Maintenance report

Transformer Compact Station

Project name: **Customer:**

Address, location of the plant:

Serial number of the Transformer Compact Station:

Fabrication version of the Transformer Compact Station,
if available:

Content of the maintenance report

In conjunction with the other documentation of the Transformer Compact Station, the maintenance report assures faultless operation of the device. Maintenance work does not automatically guarantee electrical safety.

The maintenance report contains all necessary maintenance intervals of the Transformer Compact Station.

Storage of the maintenance report

- After maintenance work, keep the maintenance report at hand near the Transformer Compact Station.

Maintenance instructions

- Perform all work as described in the maintenance manual. Observe all safety precautions.

Appendices

No.	Appendix

1 Maintenance Schedule

1.1 Maintenance Intervals

Logging damage

Any damage found during maintenance must be logged and reported to SMA Solar Technology AG.

Shorter maintenance intervals

The maintenance intervals can be shorter depending on local conditions. Reasons for shorter maintenance intervals include:

- High stress through pollution, e. g. when installed in agricultural businesses
- Vibrations, e.g. when installed in the vicinity of a railway line
- High, low or strongly fluctuating ambient temperatures, e.g. in desert locations
- High humidity

Determining components

The Transformer Compact Station can contain components from different manufacturers for which the maintenance activities and the maintenance intervals differ. Prior to any maintenance work, check which components have been used.

The following table lists the components of various manufacturers, their maintenance intervals, and the maintenance activities to be carried out.

1.2 Overview of Maintenance-Relevant Components

Maintenance of the Transformer Compact Station depends on the country option and the components used. In the following table, depending on the country option, you can determine:

- for which component maintenance must be carried out,
- for which component maintenance must be carried out if option is present.

Component	Country option							
	Concrete station				Steel station			
	TCS-DE (V.2)/CZ/ES/ BG/RO/UK	TCS-DE (V.1)	TCS-FR	TCS-IT	TCS-EX	TCS-AU/ZA/IN	TCS-DE	TCS-GR
Concrete station	x	x	x	x	–	–	–	–
Steel station	–	–	–	–	x	x	x	x
Enclosure openings	x	x	x	x	–	–	–	–
LV/HRC fuse switch-disconnector	x	x	–	x	x	x	x	x
AC circuit breaker	o	o	x	o	o	o	o	o
Low-voltage meter (GSE)	–	–	–	x	–	–	–	–
Transformer for auxiliary power supply	o	o	o	o	o	o	o	o
Interlocking	–	–	x	o	–	–	–	–

Component	Country option							
	Concrete station				Steel station			
	TCS-DE (V.2)/CZ/ES/ BG/RO/UK	TCS-DE (V.1)	TCS-FR	TCS-IT	TCS-EX	TCS-AU/ZA/IN	TCS-DE	TCS-GR
Station sub-distribution	x	x	x	x	x	x	x	x
MV transformer	x	x	x	x	x	x	x	x
Contact thermometer of medium-voltage transformer	o	o	o	o	o	o	o	o
Medium-voltage transformer protection device	o	o	o	o	o	o	o	o
MV transformer fan	–	o	–	o	o	–	o	x
Medium-voltage switchgear	o	o	o	o	o	o	o	o

x Maintenance must be carried out

o Maintenance must be carried out if option exists

– Maintenance not required

2 Checklist

Interval	Component	No.	Maintenance work	Carried out
If required	Concrete station	1.	Clean air inlets and outlets	☐
	Steel station	2.	Clean air inlets and outlets	☐
	Station sub-distribution	3.	Test residual-current device before using the socket	☐
		4.	Check lighting	☐
	MV transformer	5.	Check sealing joints of the transformer and tighten screws slightly, if necessary	☐
		6.	Clean insulators	☐
		7.	Remove any rust stains and repaint	☐
		8.	Drain and refill oil	☐
		9.	Take oil samples	☐
	MV switchgear*	10.	Clean interior	☐
		11.	Clean enclosure	☐
		12.	Clean surfaces	☐
		13.	Check screw connections	☐
		14.	Check cable connections	☐
		15.	Check fuses or circuit breakers	☐
		16.	Check measuring instruments	☐
	MV transformer protection device from Automation 2000	17.	Take oil samples	☐
		18.	Carry out an overpressure test	☐
		19.	Carry out a gas discharge	☐
		20.	Test thermostat	☐
	Low-voltage meter (GSE) from Landis+Gyr AG**	21.	Change battery	☐
Interval depends on national regulations and standards	Low-voltage meter (GSE) from Landis+Gyr AG	22.	Check optical test output	☐
		23.	Carry out creep test	☐
		24.	Check active power measurement	☐
		25.	Check reactive power measurement	☐

Interval	Component	No.	Maintenance work	Carried out
1 year	MV transformer	26.	Check oil level	☐
		27.	Check oil temperature	☐
		28.	Check transformer for oil leaks	☐
		29.	You should switch the overvoltage converter to a voltage-free state at least once per year with 10 switching cycles in each case across the entire range. This will prevent oil and carbon deposits from accumulating on the converter contacts.	☐
		30.	Check the paint and the tightness of transformers not currently in operation	☐
		31.	Check for leaks, rust stains and damage	☐
		32.	Check ducts, protective devices, and control elements for pollution	☐
		33.	Check for local warming as a result of transition resistance at the overvoltage and undervoltage connections	☐
		34.	Check the ambient temperature and the room ventilation	☐
		35.	Check the transformer for operating noise	☐
		36.	Check the transformer protective devices/contact thermometers and accessories • Functionality • Set and check the contacts • Cabling	☐
		37.	Check the test device	☐

Interval	Component	No.	Maintenance work	Carried out
1 year	Concrete station	38.	Carry out leakage tests • Enclosure openings • Covers • Paint	☐
		39.	Clean air inlets and outlets	☐
		40.	Check doors and locking systems	☐
		41.	Check insulated conduit	☐
		42.	Check exterior for concrete damage	☐
		43.	Check covers	☐
		44.	Check that the cable vault is watertight, if necessary seal with bitumen	☐
		45.	Check support structure for damage, e. g. exposed steel, and apply rust protection if required and cover with layer of cement	☐
		46.	Check that enclosure openings are intact and replace if not tight	☐
	Concrete station / steel station	47.	Check doors and locks	☐
		48.	Carry out function test	☐
		49.	Apply lubricants	☐
		50.	Make repairs to silicone sealing	☐
		51.	Adjust hinges	☐
		52.	Check paint cover on exterior and roof	☐
		53.	Check paint cover on interior walls and on station floor	☐
		54.	Repair damage to paintwork	☐
2 years	Steel station	55.	Check exterior of steel station for corrosion	☐
	LV/HRC fuse switch-disconnector	56.	Check LV/HRC fuses for discolouration	☐
	AC circuit breaker	57.	Check AC circuit breaker for functionality	☐
	Transformer for auxiliary power supply	58.	Check torque of screw connections	☐
	Interlocking	59.	Check Interlocking for functionality	☐
	Transformer fan	60.	Check transformer fan for functionality	☐
5 years	MV switchgear Ringmaster	61.	Check safety system	☐

Interval	Component	No.	Maintenance work	Carried out
6 years	Medium-voltage switchgear Flusarc or FBX	62.	Check existence and condition of accessories (handle, etc.)	☐
		63.	Carry out visual inspection of general condition (cleanliness, no corrosion, etc.)	☐
		64.	Carry out cleaning of external elements with a clean, dry cloth	☐
		65.	Carry out check of compliance of position indicators (OFF and ON)	☐
		66.	Carry out check of mechanical drive function using electronic circuits	☐
		67.	Carry out check of general condition of the electrical connections	☐
6 years / if required	MV transformer	68.	Take oil sample and carry out oil treatment, if necessary	☐
10 years	Low-voltage meter (GSE) from Landis+Gyr AG**	69.	Change battery	☐

* The maintenance intervals for cleaning the Ringmaster medium-voltage switchgear are dependent on the ambient conditions. You can find a definition of the ambient conditions in the documentation of the medium-voltage switchgear.

** If required, after 10 years at the latest.

Your signature confirms that the work listed above has been carried out.

Customer or contractor company*	Last name, first name*	Date	Signature

* (in block letters)