SIEMENS

Harmony, Symphony, Sonata *syngo* MR

[redacted]MR

Service Instructions MR013/04/I

Title: Optional 80K shield temp alarm adapter

Reason for update:

☒ Infrequent Service

Urgency:	☐ Immediate	☒ Within	12 months
Update material required?	☒ Yes	☐ No	
Materials free of charge?	☒ Yes	☐ No	
Return of parts?	☐ Yes	☒ No	
Estimated completion time:	30 min.	Number of CSE's:1	
Customer application training?	☐ Yes	☒ No	

Systems/Products affected/System identifying IVK

Name	Material No.	Serial No.
see page 3		

Components affected/to be modified

Name	Material No.	Serial No.	Component status Affected
Elect. cabinets for Harmony/Symphony	42 96 765	n.a.	n.a.

Remark: n.a.

Chg. Ref. No.: 120589
Name: W.Kühnast
Dept.: CSPS 23

Document Revision Level

This document corresponds to the version/revision level effective at the time of system delivery. Revisions to hardcopy documentation are not automatically distributed.

Please contact your local Siemens office to order current revision levels.

Disclaimer

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Reason for the Update

Some magnet systems in the field are running close to the shield temperature warning thresholds, even though the cold head has no obvious problems.

The customer either permanently or sporadically receives irritating temperature warnings.

These slightly higher shield temperatures can be caused by tolerances in the magnet thermal insulation or shielding, and usually do not affect the boil-off rate of the magnet.

Prerequisites

n.a.

Special Tools / Documents

n.a.

Systems/Products Affected

There are only a few isolated cases known, where this problem occurs.

This SI must only be performed when the system has been fully evaluated and other factors such as the refrigeration system have been eliminated as a possible reason the shield temperature alarm is being tripped.

The use of the lead adapter requires special release via CS HSC 23 (the attached checklist must be completed and sent as a prerequisite for that release)

NOTE	**The use of this adapter is not appropriate on systems that actually have a problem and where the temperature is above the alarm threshold (> 80K) !!!**

Upgrade HARMONY *syngo* MR	**71 06 714**	10505	**Upgrade Symphony *syngo* MR**	**71 06 557**	14248
		10513			14254
		10550			14256
		10572			14269
		10575			14314
		10586			14319
		10590			14320
		10597			14327
		10600			14330
HARMONY *syngo* MR	**71 04 693**	11051			14361
		11082			14365
		11118			14375
Upgrade Symphony *syngo* MR	**71 06 557**	14002			14382
		14006	**SYMPHONY-SONATA-Upgrade**	**71 04 735**	21609
		14014			21910
		14033			21920
		14110			21929
		14154	**SYMPHONY *syngo* MR**	**71 04 594**	22037
		14168			22197
		14173			22304
		14183			22310
		14194			22317
		14208			22369
		14233			23269

Tab. 1 List of systems which are potentially affected (generated by an RDIAG report)

Ordering Information

The following update kit has to be ordered from CSML (SAP Distribution Channel, factory 2050):

1 **Update Kit 74 62 091 (OMT-no.: 617-175)**

List the system Serial Number on the order!

Contents of the Update Kit

Update kit **74 62 091** contains the following parts:

Pos.	Quan.	Material No.	Name
1	1	617-175	Shield temp adapter
2	1	MR-000.898.12.01	Update Instruction
3	1	n.a.	Label

Tab. 2

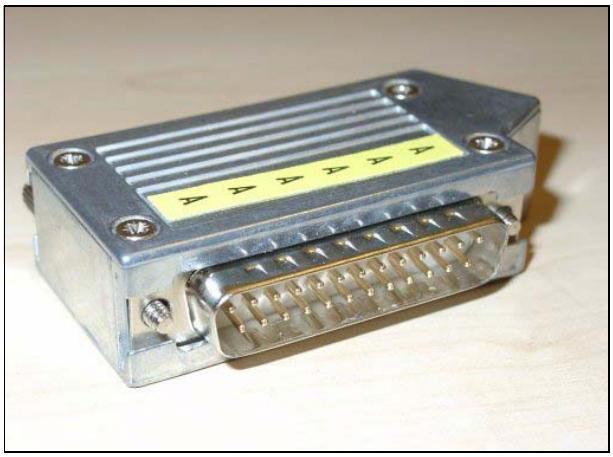

Fig. 1 Bottom view of shield temp adapter

Fig. 2 Top view of shield temp adapter

Return of Parts

n.a.

Work Steps

NOTE	**This SI must only be performed when the system has been fully evaluated and other factors such as the refrigeration system have been eliminated as a possible reason the shield temperature alarm is being tripped.**

- Report the technical details requested in the attached checklist (Checklist for SI MR013/04/I on page 8) and send it to CSHSC 23 for release of the kit.

NOTE	**The cable adapter 617-175 has been designed to reduce the voltage output from the 80k shield measurement in order to produce a lower input to the alarm trip on the control crate unit.** **The 25 way adapter cable has a 150 ohm resistor fitted inside , across the wire going between pins 20 (Fig. 3). The male and female plug and socket are wired pin for pin except on pin 20 which has the 150 ohm resistor in line.** **This resistor will reduce the 80k shield temperature reading on the control crate by 12 - 15k.**

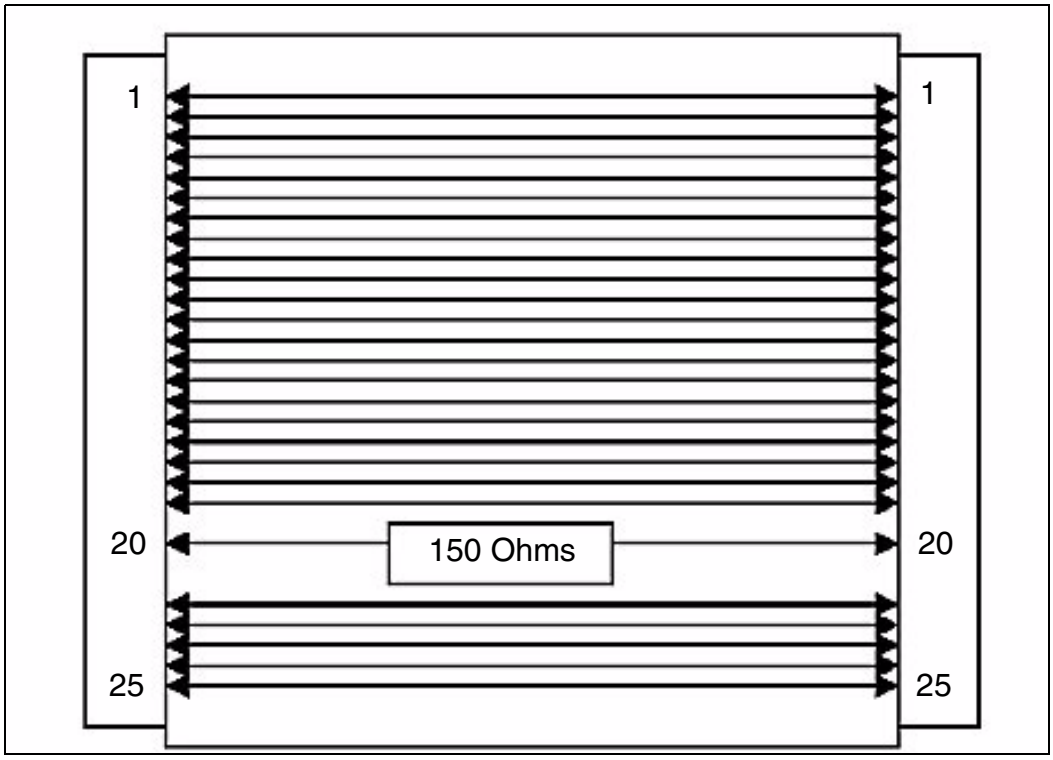

Fig. 3 Cable adapter 617-175 wiring schematic

⚠CAUTION	**While connecting the adapter, there is a minor risk of creating a short circuit in the Magnet Stop circuitry.** **If not observed, a Quench can occur.** **It is recommended to remove connector "B" at the magnet service turret to minimize the risk of quenching.**

- Remove connector "B" at the magnet service turret.

⚠WARNING	**Magnet supervision cable removed from magnet service turret connector "B" and from X2 connector on top of the CCA cabinet.** **Magnet emergency run-down function via the Magnet Stop buttons is disabled, Magnet cannot be run down in case of an emergency situation, which may lead to death or to serious physical injury!!!** **Close the RF cabin door and make sure nobody can enter the examination room while performing this UI.**

- Remove magnet supervision cable (618-452-13T) from X2 connector on top of the CCA cabinet.
  - ➪ An alarm will come up at the alarm box, please acknowledge.Connect the male plug of the temp adapter to the X2 socket located on the top of the K2201 cabinet (Fig. 4).
  - ➪ Make sure the locking screws are tightened.
- Reconnect the magnet supervision cable (618-452-13T) from the filter panel to the female socket of the temp adapter.
- Reconnect connector "B" at magnet service turret.
- Fit label inside the CCA cabinet as shown in Fig. 5.

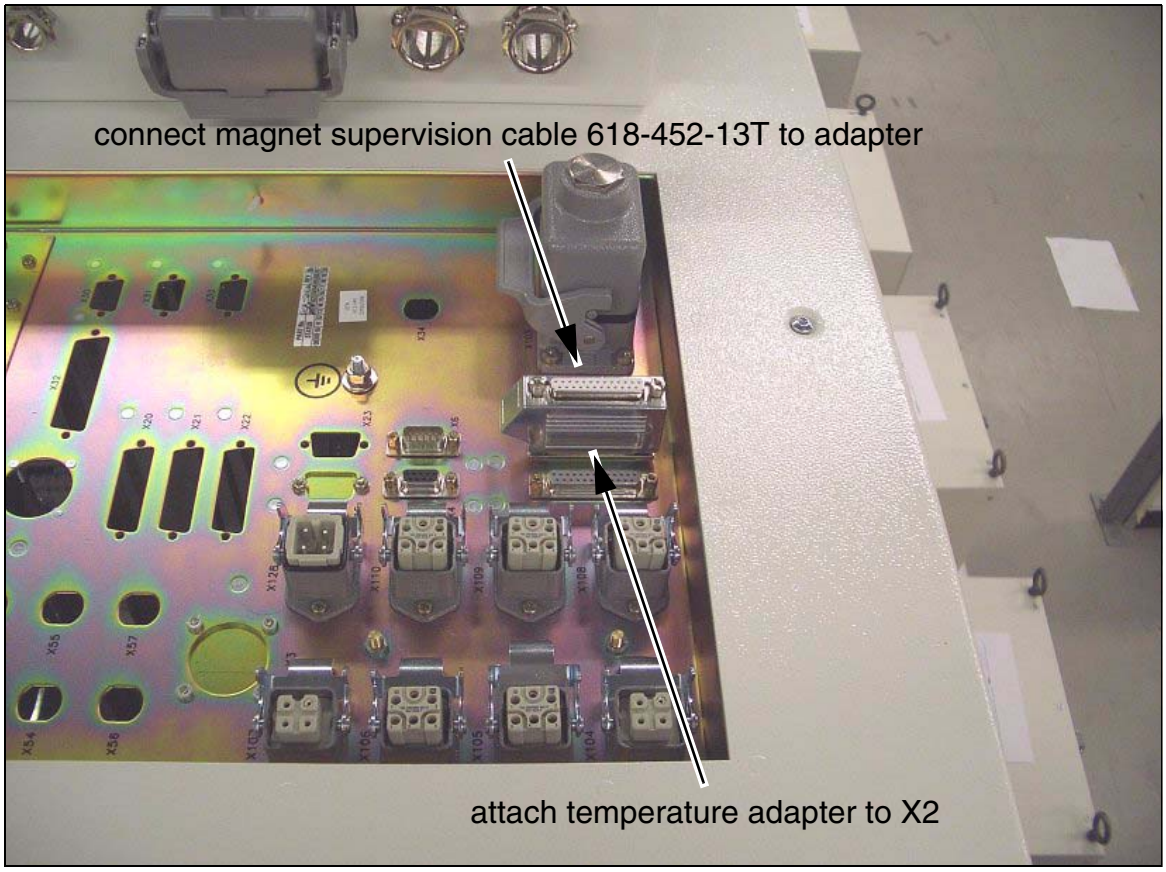

Fig. 4 Temp adapter 617-175 plugged on CCA cabinet

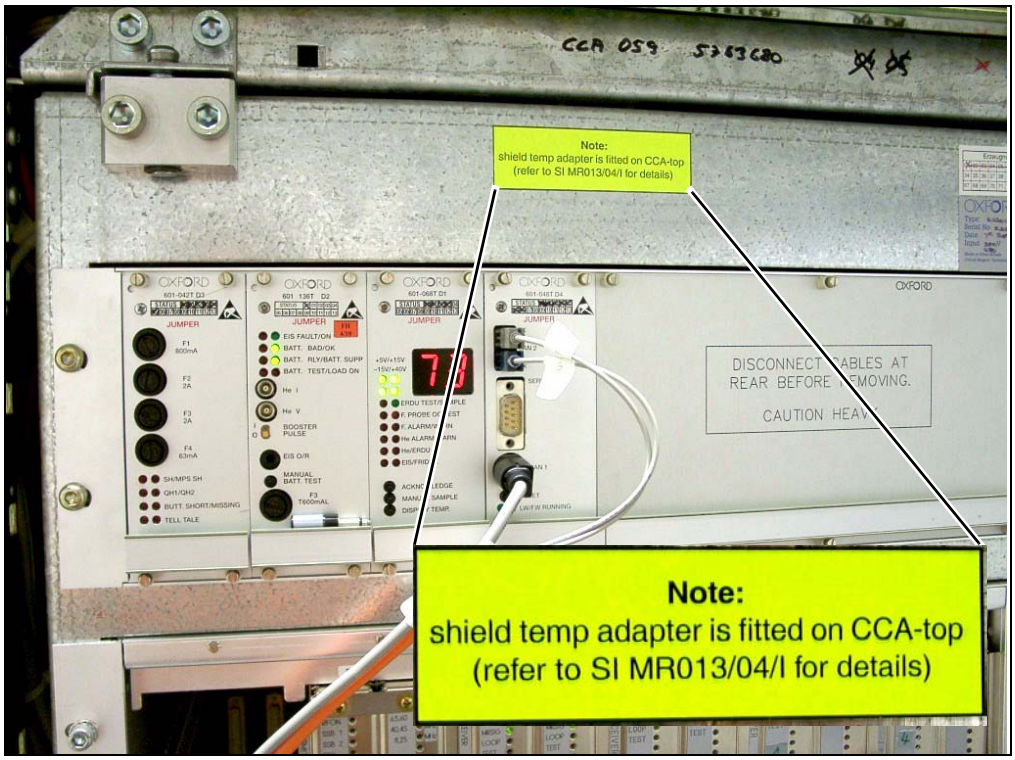

Fig. 5 Label fitted on front of the CCA cabinet (above the Magnet Supervision)

Checklist for SI MR013/04/I

Send to FAX-no.: +49 9131 84-4281 if you are in doubt whether this SI is appropriate or not

Customer (name/city)	
System serial number	
Magnet serial number	
Name of reporting CSE	
Phone/FAX no. of CSE	

Tab. 3 Customer / system data

Shield temperature measurement

(refer to TSG, Chapter "Magnet", "Measuring the shield temperaturte" for details)

Measuring point	Voltage (in mV)	Temperature (in K)
1 (pin 1 to 9) - 20 K bore		
2 (pin 3 to 9) - 80 K bore		
3 (pin 5 to 9) - 20 K cold head		
4 (pin 6 to 9) - 80 K cold head		

Tab. 4 Measurement of the shield temperatures

1. When did the alarm come up the first time? _____
2. Alarm is permanently ☐ / sporadically ☐ active
3. When was the last displacer replacement?_____
4. When was the last adsorber replacement?_____
5. Working hours of the compressor: _____
6. Dynamic pressure of the compressor: _____
7. Is the cooling water supply o.k. and stable? Yes ☐ No ☐
8. Is the compressor / cold head working fine? Yes ☐ No ☐
9. Boil-off rate o.k. (indifferent since temperature problem started) ? Yes ☐ No ☐

➪ If Measuring point 4 of the Shield temperatures (refer to Tab. 4) is less than 10 K above the threshold of 75 K (85 K max.), the temperature did not change significantly after the last coldhead service, the boil-off rate is normal and out of your experience everything seems to be fine with the refrigeration system, the SI can be performed in order to get rid of the alarm.

➪ If you are in doubt whether or not to perform this SI, please contact HSC 23 or SMT for further hints. Therefore the checklist must be sent in.

Final Check

- Check that no alarm is present at the alarm box
- Make a shield temperature measurement to prove the proper function of the adapter (Perform a "*Reboot MR Scanner"* to get an updated temperature value).

Customer Information

n.a.

Final Work Steps

- Fill out, and if needed, make a copy of the attached "Completion Protocol/ Update Completion Form" and file it in the corresponding System Binder/User Handbook.
- Updates that have already been completed prior to publication of this SI must also be reported.
- The update is reported as follows:
  - The modification reply report has to be prepared by authorized personnel using an application on the Intranet.)

Changes to Previous Version

1. A Label was added to the kit.
2. The serial number range of the affected systems was changed.
3. The resistance of the adapter was changed from 470 Ohms to 150 Ohms.

Completion Protocol / Update Completion Form

The update with the number **MR013/04/I** has been completed.

Material number: .....

Serial number: .....

Customer: ..... Functional Location: .....

Customer No.: .....

Name (CSE): ..... Telephone: .....

Country: ..... Location: .....

Date: ..... Signature: .....

Remark: .....

.....

NOTE **After completing the update, make a copy of this page, fill it out and file it in the corresponding System Binder/User Handbook.**