

Approved per signature page

SERVICE MODULE
THERMAL MODE CONTROL SYSTEM
[COTP]
SM

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Revision Log

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APPENDIX. [COTP] Backup Modes

INTRODUCTION

These COTP crew procedures contain information for the crew about procedures and rules for Active Thermal Control, Air Conditioning and Ventilation Systems operations

COTP (Backup Modes) book contains procedures about COTP, performed by the crew **on MCC-M GO** if it is not possible to perform them by **MCC-M** during:

- maintenance support
- test performance
- change of operating modes and configuration of thermal control system pumps

These crew procedures are intended for trained crew members who have completed the full training course and simulations, and also per results of full-scale tests

These crew procedures may be updated pending ISS assembly, systems modification and procedure validation at simulators and training facilities

These crew procedures are developed per БСC software release 4.30.14 and RS Laptop software dated 07.03.00

ACRONYMS AND ABBREVIATIONS

алг	- algorithm
б/и	- crew procedures
БВ	- switch panel
БВК	- command output unit
БИТС	- onboard measurement telemetry subsystem
БКС	- onboard cable network
БРУС	- fan speed control unit
ВАП	- equipment fan
ВВПрК	- transfer tunnel air duct fan
ВВПрО	- transfer compartment duct fan
ВГЖТ	- gas-liquid heat exchanger fan
ВД	- air duct
ВК	- personal fan
ВКЮ	- crew quarters fan
ВН	- cabin air heater
ВОЛ	- Lira equipment fan
ВПО	- instrument area fan
ВПрК	- transfer chamber fan
ВПрО	- transfer compartment fan
ВСУ	- toilet cabin fan
ВСЭП	- СЭП equipment fan
ВТ	- heat exchanger fan
ВТК	- heat exchanger-condenser fan
ГЖТ	- gas-liquid heat exchanger
ДнаЗ-М	- report to MCC-M
ДпоУЗ-М	- √MCC-M
ДТ	- temperature sensor
загл	- cap, plug
ЗИП	- spares kit
ИнПУ	- integrated control panel
кбл	- cable
кл	- valve
клав	- pushbutton
кн	- pb
КОБ	- SM internal thermal loop

КОХ	- SM external thermal loop
КРЛ	- command radio link
КУ	- compressor [CKB]
МЗ	- air conditioner fan
МОК	- condensate line
Н/С	- off-nominal situation
НОК	- condensate pump
НЭП	- Science Power Platform
Откл	- deactivate, deactivated (if there is no label)
п	- procedure
перекл	- switch
ПДНК	- external loop refill panel
ПК	- valve panel
ПКР	- accumulator panel
ПоУЗ-М	- on MCC-M GO
ППС	- system power panel
ПрК	- transfer chamber
ПСС	- caution and warning panel
ПУВН	- cabin air heaters control panel
ПФ	- dust filter
ПхО	- transfer compartment
РБС	- power outlet
РВ	- ventilation grill
РРЖ	- flow control valve
рзм	- cnctr, connector
рис	- Figure
РН	- manual pump
РО	- working compartment
РП	- flow regulator
РПК	- cabin flow rate indicator
РРЖ	- flow control valve
с/с	- ground pass, comm pass
СБК	- condensate container
СВ	- ventilation subsystem
СвД	- light emitting diode, LED
СД	- pressure alarm, pressure indicator
СКВ	- air conditioner
СМ	- Service Module
см	- reference, see
СО	- Docking Compartment
СОГС	- atmosphere revitalization subsystem
СОТР	- thermal mode control system
СПН	- replaceable pump panel
СРВ-К2М	- condensate water processor
СТР	- active thermal control system
СУ	- docking assembly
т/н	- coolant
ТК	- Soyuz transport vehicle
ТКГ	- Progress cargo vehicle
ТМИ	- Telemetry
ФГБ	- Functional Cargo Block (FGB)
ФС	- screen filter
ЦУП-М	- Mission Control Center-Moscow, MCC-M
ЦУП-Х	- Mission Control Center-Houston, MCC-H
ЭК	- solenoid valve
ЭН	- КОБ electrical heater

SYMBOLS

	- illuminated
	- blinking
	- not illuminated
	- sw BT1 → On (i.e. up relative to label on panel)
	- sw BT1 → Off (i.e. down relative to label on panel)
	- i.e. right relative to label on panel
	- i.e. left relative to label on panel
	- mouse left click
	- rotate clockwise
	- rotate counterclockwise
	- rotate clockwise to stop
	- rotate counterclockwise to stop
	- adjust by rotating
	- place physical device in designated state
	- control panel status
	- disconnect
	- connect
	- press pushbutton
	- press pushbutton to lock
	- check (in case of discrepancy, attempt a corrective action one time only)
	- verify
	- continuously monitor
	- verify aurally
	- tactile verification
ЗВУК	- acknowledge audio alarm
15:46:28	- 15 hours 46 minutes 28 seconds
	- repeat steps

	BK1 is running	*****	- an anticipated off-nominal situation, if the condition left of the asterisks on the same line is not met, perform action(s) enclosed by asterisk lines
	Use the other [BK] or		
	ON MCC-M GO Replace fan		

	BT1 — (3 --- 5 B)	***** Perform 2.5.2	- off-nominal situation, if the condition left of the asterisks on the same line is not met, perform 2.5.2
	CKB1 работает	***** Report to MCC-M	- an anticipated off-nominal situation, if the condition left of the asterisks on the same line is not met, stop performing procedure and √MCC-M
ПУВН	ПУЛЬТ ВКЛ	СвД Д1	- press pb PANEL PWR, in this case LED Д1
НОК1 (НОК2)	—		- advisory annunciation (not mandatory for monitoring)

COMMAND ISSUE VIA RS LAPTOP

RS Laptop CM:COTP:Commands
 cmd T_OFSNOK (Сброс сигн.НОК)
 Execute

- Open the specified display
- Select the command by its unique ID
- Issue the command with execution confirmation

PROCEDURE RUN VIA RS LAPTOP

RS Laptop CM:COTP:CTP_proc
 proc FT_11 (Задание контура КОХ)
 param 1__

 param n __
 Execute

- Open the specified display
- Select the command by its unique ID
- Type parameter #1 value in the parameter input field
- Type parameter #n value in the parameter input field ('n' stands for total number of procedure parameters)
- Run the procedure with execution confirmation

COMMAND ISSUE VIA INTEGRATED CONTROL PANEL (ИНПУ)

ИНПУ SM COTP CONTROL
 FAN MASTER PWR OFF FANS PWR OFF

- Open the specified display
- Place cursor on softkey (FAN MASTER PWR)
- Press key COMMAND / OFF (**OFF**)
- Verify indicator (FANS PWR OFF) becomes highlighted (in bright green)

INDICATOR MONITORING VIA ИНПУ

ИНПУ SM COTP CONTROL
 FAN1 ПpK PWR ON

- Open the specified display
- Verify indicator (FAN1 ПpK PWR ON) becomes highlighted (in bright green)

1. GENERAL INSTRUCTIONS

1.1. CREW RESPONSIBILITIES

While performing operations, the crew is responsible for the following actions

1. Perform operations per these crew procedures and **MCC-M** instructions, in accordance with the crew functional responsibilities and current status of the onboard systems
2. **Report to MCC-M** completed operations
3. Monitor systems operation per these crew procedures and **MCC** instructions
4. When there is a deviation from nominal systems operation, the crew is responsible for the following actions
 - record the time when the deviation (malfunction) was detected
 - record the nature of the deviation (malfunction)
 - **report to MCC-M** at the earliest available comm pass
5. In the event of an off-nominal situation, take corrective action by executing the malfunction procedure
6. Perform indicator panel lamp test
7. Output commands via control panels by pressing pushbuttons (without lock) and holding for 1-2 sec.
8. Record actual time spent performing operations
9. When working with hardware (control panels, hoses, cables etc.) equipped with protective caps and covers:
 - remove caps and covers before operations
 - re-install caps and covers after operations

1.2. SAFETY PRECAUTIONS

To ensure nominal systems operation and crew safety, the crew is responsible for the following actions:

1. When working with the system, use only hardware, tools, and protective devices designated by these crew procedures or by **MCC-M**
2. Upon detection of an off-nominal situation, not documented in these crew procedures, the crew is responsible for the following actions:
 - stop working with the system
 - record time when the off-nominal situation was detected
 - record the nature of the off-nominal situation
 - **report to MCC-M** at the earliest available comm pass
3. Replace fuses only when system or instrument is unpowered.
Replace fuse per amperage, labeled on the fuse.
√**MCC-M** before repeating fuse replacement

2. AIR CONDITIONER ([CKB1,CKB2]) AND CONDENSATE LINE ([MOK])

2.1. [CKB] DISPLAY OPERATION

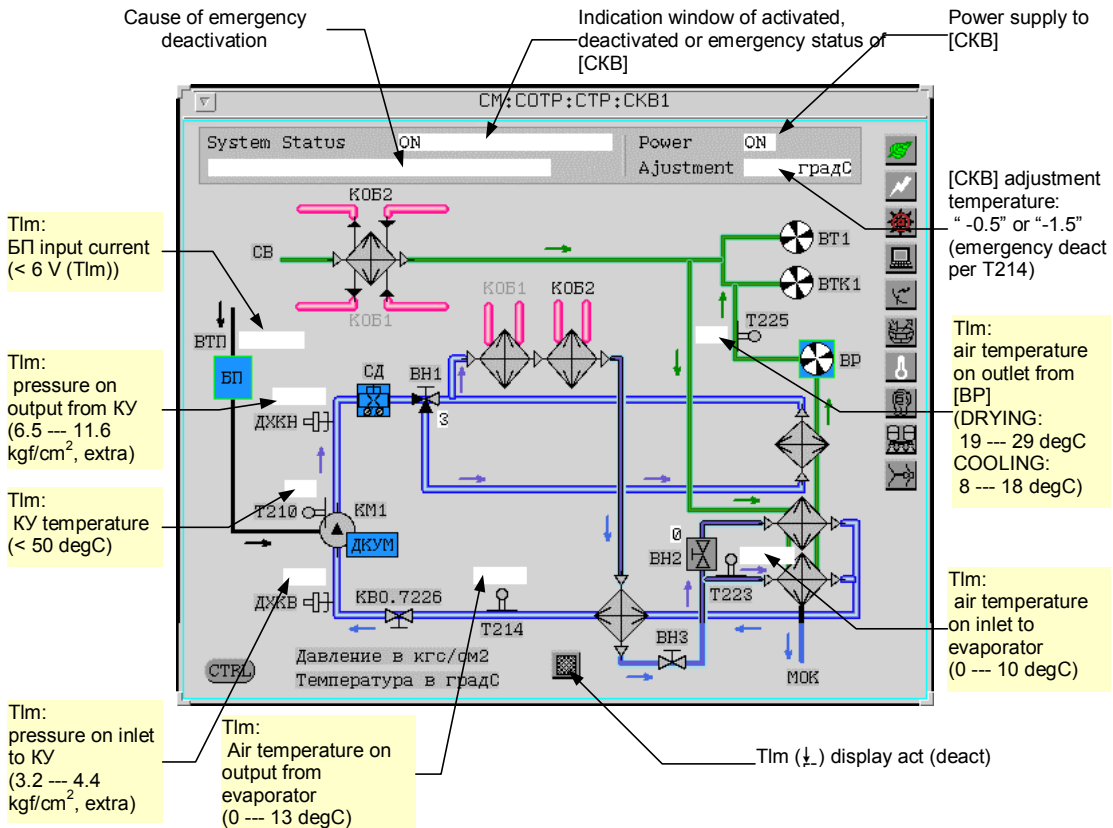


Figure 2.1-1 Display of activated [CKB1] (similar for [CKB2]) Mode "Drying" is selected. Coolant condenser operates on КОБ2. TIm values correspond to setting mode of [CKB] operation.

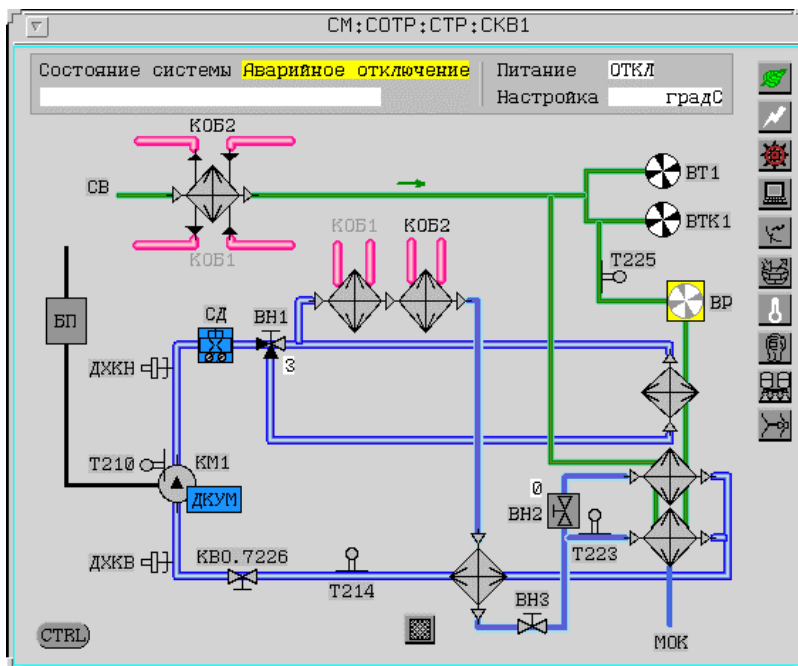








Figure 2.1-2 Display of deactivated [CKB1] (similar for [CKB2])

2.2. [CKB] CONTROL


2.2.1. [CKB1] ([CKB2]) AND [HOK1] ([HOK2]) ACTIVATION/DEACTIVATION

1. [CKB1] ([CKB2]) AND [MOK] PREPARATION FOR ACTIVATION

201(401) √ 7Кл1 (7Кл2) — ОТКРЫТ (Open)
 When evacuating condensate to condensate container (СбК):
 401 | 7Кл3 → ЗАКРЫТ (Closed)
 201 | 7Кл4 → В СБОРНИК КОНДЕНСАТА (to СбК)
 behind 131 | √ pb ВКЛ (On) (on 7СД) — ↓
 | √ Condensate container valve-indicator — ОТКР (Open) (↙)


When pumping condensate to СРВ-К2М (condensate water processor):
 401 | 7Кл3 → В СРВ-К (to [СРВ-К])
 201 | 7Кл4 → ЗАКРЫТ (Closed)
 behind 204(404) √ Mode is selected **On MCC-M GO** (COOLING or DRYING) (see 2.2.3)
 RS Laptop | CM:COTP:CB
 | √ BT1 (BT2), ВТК1 (ВТК2) —  (see 2.3)
 | CM:COTP:CTP:MOK
 | < HOK1 (HOK2) —  (when [CKB2] ([CKB1]) is operating )
 | | if [HOK1]([HOK2]) — 
 | | Wait —  () (for ≤ 30 min)

2. [CKB1] ([CKB2]) AND [HOK1] ([HOK2]) ACTIVATION

RS Laptop | CM:COTP:CTP_proc
 | **proc FT_207** (CKB1 and HOK1 Activation)
 | (**proc FT_208**) (CKB2 and HOK2 Activation)
 00:00:00 | **Execute**
 00:01:00 | CM:COTP:CTP:CKB1(CKB2)
 | <
 | < Power ON
 | < BP — 

When activating [CKB1] ([CKB2]) after СбК replacement or [СРВ-К2М] failure:
 ≤ 00:05:00 | << HOK1 (HOK2) — 2---5 V (for 30 sec)

3. [CKB1] ([CKB2]) AND [HOK1]([HOK2]) DEACTIVATION

RS Laptop | CM:COTP:CTP_проц
 | **proc FT_209** (CKB1 and HOK1 Deactivation)
 | (**proc FT_210**) (CKB2 and HOK2 Deactivation)
 | **Execute**
 ПСС | OTHER (yellow) **ALARM**
 RS Laptop | CM:COTP:CTP:CKB1(CKB2)
 | < System Status Off-nominal halt
 | < Power OFF
 | < BP — 

NOTE

After [CKB1] ([CKB2]) deactivation, [HOK1] ([HOK2]) continues operating for 30 min

2.2.2. [CKB1] ([CKB2]) SETTING TEMPERATURE SELECTION

RS Laptop Activate [CKB1]([CKB2]) (see 2.2.1 step 2)

#	CKB1 (CKB2) T _{setting} selection	Cmd		↵
		CM:COTP: Commands		CM:COTP:CTP:CKB1(CKB2)
1	CKB1: minus 0.5 °C	T_PRSKV1M05D	(CKB1 Setpoint –0.5 C)	Ajustment -0.5 градC
2	CKB1: minus 1.5 °C	T_PRSKV1M15D	(CKB1 Setpoint –1.5 C)	Ajustment -1.5 градC
3	CKB2: minus 0.5 °C	T_PRSKV2M05D	(CKB2 Setpoint –0.5 C)	Ajustment -0.5 градC
4	CKB2: minus 1.5 °C	T_PRSKV2M15D	(CKB2 Setpoint –1.5 C)	Ajustment -1.5 градC

2.2.3. [CKB1] ([CKB2]) OPERATING MODE SELECTION

(On MCC-M GO)

CAUTION

When operating, observe integrity of hydraulic manifolds and check for leaks

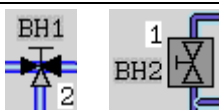
1. COOLING MODE SELECTION

behind 204 (404) Valve BH1 → 2 (upward)

Valve BH2 → 1 (upward)

RS Laptop

CM:COTP:CTP:CKB1(CKB2)



Report to MCC-M

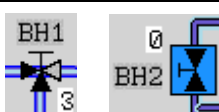
2. DRYING MODE SELECTION

behind 204 (404) Valve BH1 → 3 (downward)

Valve BH2 → 0 (downward)

RS Laptop

CM:COTP:CTP:CKB1(CKB2)



Report to MCC-M

2.2.4. [CKB1] ([CKB2]) ACTIVATION/DEACTIVATION USING DIRECT COMMAND (ON MCC-M GO)


CAUTION

Perform only during comm pass when operating per **Ошибка! Источник ссылки не найден.**,
Ошибка! Источник ссылки не найден.
(OFF-NOMINAL DEACTIVATION) when the [CKB1] ([CKB2]) parameters $T_{coolant} < N$ or $T_{OK\ converter} > N$

1. [CKB1] ([CKB2]) ACTIVATION

RS Laptop

```

CM:TBM:Procedures
proc F18_3                               (Cntl cmd (KY) output for БС 1, Enable)
param: 11
Execute
CM:COTP:Commands
cmd T_ONPSKV1                             (CKB-1 power ON)
(cmd T_ONPSKV2)                           (CKB-2 power ON)
Execute
CM:COTP:CTP:CKB1(CKB2)
< System Status
< Power ON
< BP — 


```

Without indication

2. [CKB1] ([CKB2]) DEACTIVATION

RS Laptop

```

CM:COTP:Commands
cmd T_OFPSKV1                             (CKB-1 power OFF)
(cmd T_OFPSKV2)                           (CKB-2 power OFF)
Execute
CM:TBM:Procedures
proc F18_4                               (Cntl cmd (KY) output for БС 1 (Initial), Inhibit)
param: 11
Execute
CM:COTP:CTP:CKB1 (CKB2)
< System Status
< Power OFF
< BP — 

```

Without indication

2.2.5. [CKB1]([CKB2]) TEMPERATURE SENSOR FUNCTIONAL CHECK (ON MCC-M GO)

on [CKB1(2)] housing

behind 204(404) cnctr X027/52 ↔ [CKB] cbl

00:00:00 Activate [CKB1] ([CKB2]) by command in comm pass (see 2.2.4 step 1)

00:01:00 <<< [CKB1] ([CKB2]) activation *****

Deactivate [CKB1] ([CKB2]) by command in comm pass
(see. 2.2.4 step 2)

Operate [CKB2] ([CKB1]) (see 2.2.1.)

On MCC-M GO Replace БУ (see RODF: IFM IVA SM)

Deactivate [CKB1] ([CKB2]) by command in comm pass (see 2.2.4 step 2)

cnctr X027/52 →|← onboard cable network

Report to MCC-M

2.2.6. POWER SUPPLY FUNCTIONAL CHECK (ON MCC-M GO)

To the left of compressor

behind 204(404) cnctr X005/52 ↔ БКС

00:00:00 Activate [CKB1] ([CKB2]) by command in comm pass (see 2.2.4 step1)

00:01:00 <<< [CKB1] ([CKB2]) activation *****

Deactivate [CKB1] ([CKB2]) by command in comm pass
(see 2.2.4 step 2)

Operate [CKB2] ([CKB1]) (see 2.2.1.)

On MCC-M GO Replace БП (see RODF: IFM IVA SM)

Deactivate [CKB1] ([CKB2]) by command in comm pass (see 2.2.4 step 2)

behind 204(404) cnctr X005/52 →|← БКС

Report to MCC-M



2.3. [BT1], [BTK1] ([BT2], [BTK2]) OPERATION

NOTE



[BT1], [BTK1] ([BT2], [BTK2]) are operating continuously
Deactivate only when perform assembly operations or maintenance activities

Fan	Part-No.	Fan-location	Control panel and its location
[BT1]	MO-2-5008p	behind 205	306 ППС-21, 204 БРУС А15
[BT2]	MO-2-5008p	behind 405	308 ППС-22, 404 БРУС А18
[BTK1]	MO-1-5006	behind 205	306 ППС-21, 204 БРУС А16
[BTK2]	MO-1-5006	behind 405	308 ППС-22, 404 БРУС А19

1. [BT1] ([BTK1], [BT2], [BTK2]) ACTIVATION WHEN OPERATING WITHOUT FAN SPEED CONTROL UNIT (БРУС)


ППС-21(22)  BT1 (BTK1, BT2, BTK2)
RS Laptop CM:COTP:CB or CM:COTP:CTP:CKB1 (CKB2)
 BT1 (BTK1, BT2, BTK2) —  (3 ---5 V)





2. [BT1] ([BTK1], [BT2], [BTK2]) DEACTIVATION WHEN OPERATING WITHOUT БРУС

ППС-21(22)  BT1 (BTK1, BT2, BTK2)
RS Laptop CM:COTP:CB or CM:COTP:CTP:CKB1 (CKB2)
 BT1 (BTK1, BT2, BTK2) — 

3. [BT1] ([BTK1], [BT2], [BTK2]) ACTIVATION WITH БРУС MODE SELECTION (To reduce noise level)

NOTE

- [BT1] ([BTK1], [BT2], [BTK2]) rpm control is possible only after installation of [CKB1] ([CKB2]) with БРУС delivered instruments
- With  LED 8 (mode 8) (one) – fan nominal revolutions
From mode 1 to mode 7 – decrease of rpm
- After each press of pb MODE, fan noise should decrease
- Mode switchover time is 5 sec

БРУС А15(16,18,19)   POWER (opposite of arrow direction)
ППС-21(22)  BT1 (BTK1, BT2, BTK2)
RS Laptop CM:COTP:CB or CM:COTP:CTP:CKB1 (CKB2)
 BT1 (BTK1, BT2, BTK2) —  (3 ---5 V) ***** Perform 2.5.2 (2.5.3)

БРУС А15(16,18,19)  POWER (in arrow direction) 

On MCC-M GO:

#	Mode selection	БРУС А15(16,18,19) (mode switchover time is 5 sec)	◀
1	1	↓ MODE (once after БРУС powerup)	<input type="checkbox"/> LED 1, 8
2	2	↓ MODE (twice after БРУС powerup)	<input type="checkbox"/> LED 2, 8
3	3	↓ MODE (three times after БРУС powerup)	<input type="checkbox"/> LED 3, 8
4	4	↓ MODE (four times after БРУС powerup)	<input type="checkbox"/> LED 4, 8
5	5	↓ MODE (five times after БРУС powerup)	<input type="checkbox"/> LED 5, 8
6	6	↓ MODE (six times after БРУС powerup)	<input type="checkbox"/> LED 6, 8
7	7	↓ MODE (seven times after БРУС powerup)	<input type="checkbox"/> LED 7, 8

RS Laptop

CM:COTP:CB or CM:COTP:CTP:CKB1 (CKB2)

◀ BT1 (BTK1, BT2, BTK2) —  (3 --- 5 V)

***** Perform 2.5.2 (2.5.3)


Report to MCC-M**4. [BT1] ([BTK1], [BT2], [BTK2]) DEACTIVATION WHEN OPERATING WITH БРУС**

БРУС А15(16,18,19) ⇄ POWER (opposite of arrow direction) ■ LEDs (all)

ППС-21(22) Ⓢ BT1 (BTK1, BT2, BTK2)

RS Laptop

CM:COTP:CB or CM:COTP:CTP:CKB1 (CKB2)

◀ BT1 (BTK1, BT2, BTK2) — 

2.4. [MOK] DISPLAY OPERATION

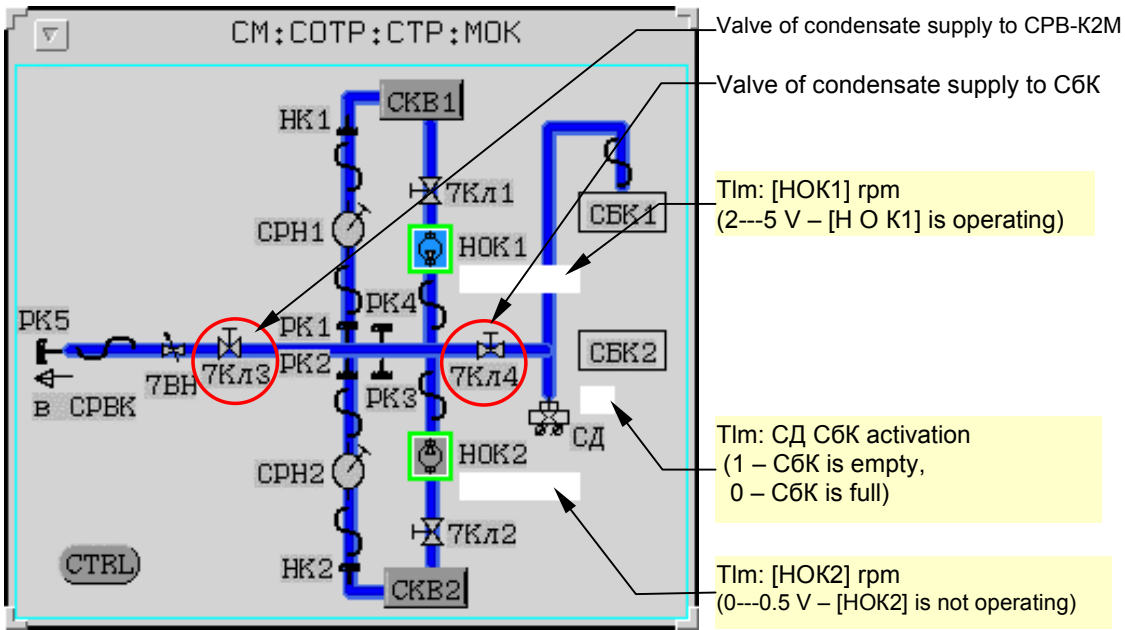
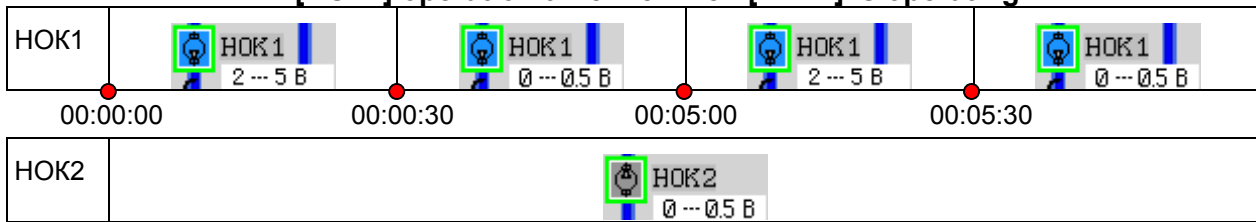
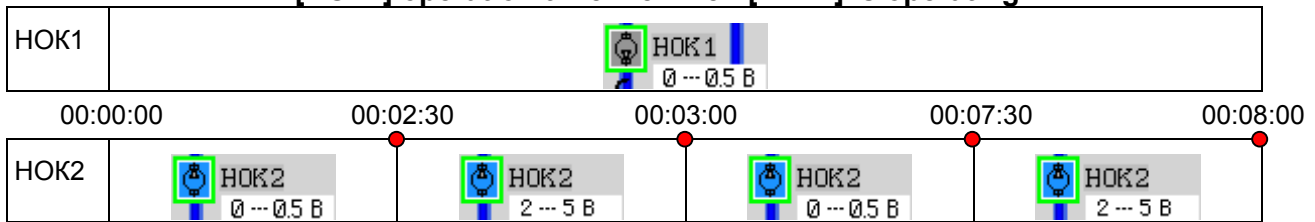


Figure 2.4. [MOK] display
(Configuration: [HOK1] is operating, [HOK2] is not operating)

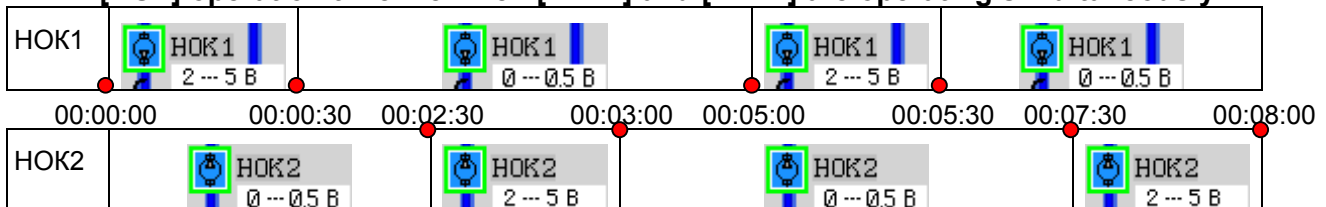
[HOK1] operation timeline when [СБК1] is operating



[HOK2] operation timeline when [СБК2] is operating



[HOK] operation timeline when [СБК1] and [СБК2] are operating simultaneously



When СБК1 and СБК2 are deactivated (in 30 min after deactivation):

HOK1, HOK2 —

2.5. [CKB1] ([CKB2]) AND [MOK] MALFUNCTIONS

CAUTION
1. In case of freon leak (hissing noise and/or white cloud in the area of compressor) deactivate [CKB], instruments and units with heating cells — report to MCC-M On MCC-M GO perform atmosphere scrubbing
2. Do not tighten connectors or do other work on active [CKB] system
3. In the event of any knocking sounds coming from compressor or fans, immediately deactivate [CKB] — report to MCC-M

2.5.1. 'SM SKV1 (2) AIR CONDITIONER OFF-NOMINAL SHUTDOWN-RS'

NOTE

In mode of condensate pump operation when condensate container is full or when there is a signal from [CPB-K2M], [CKB1], [CKB2] are not deactivated automatically

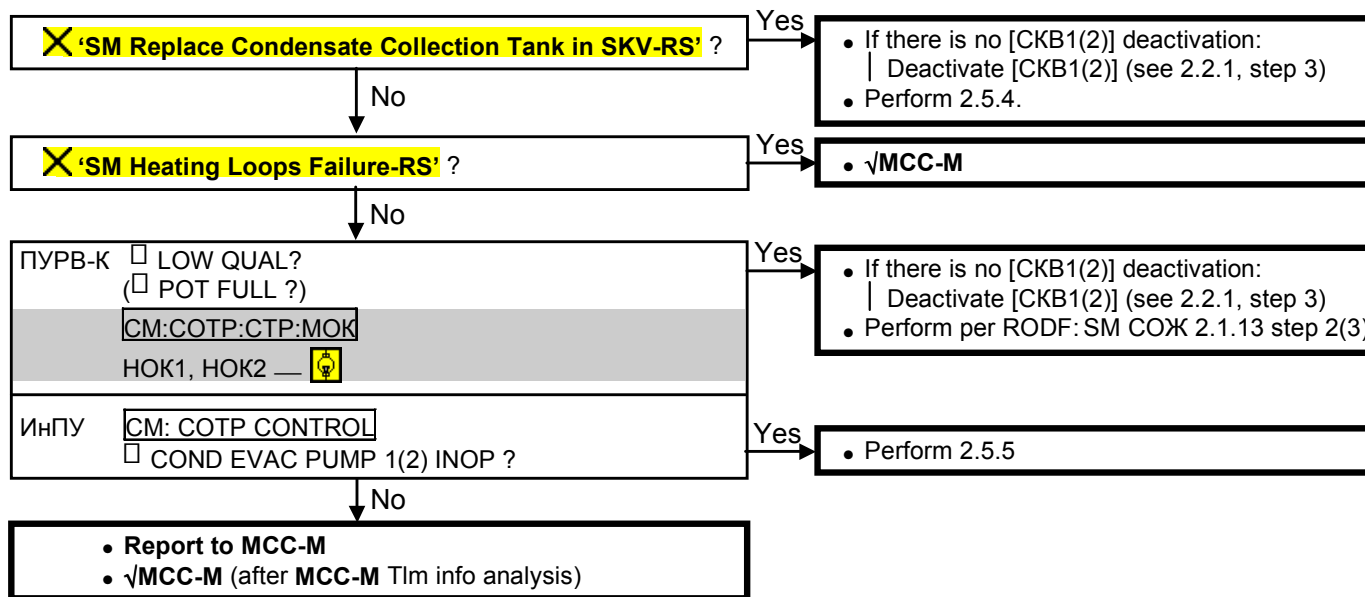
ПСС
RS Laptop

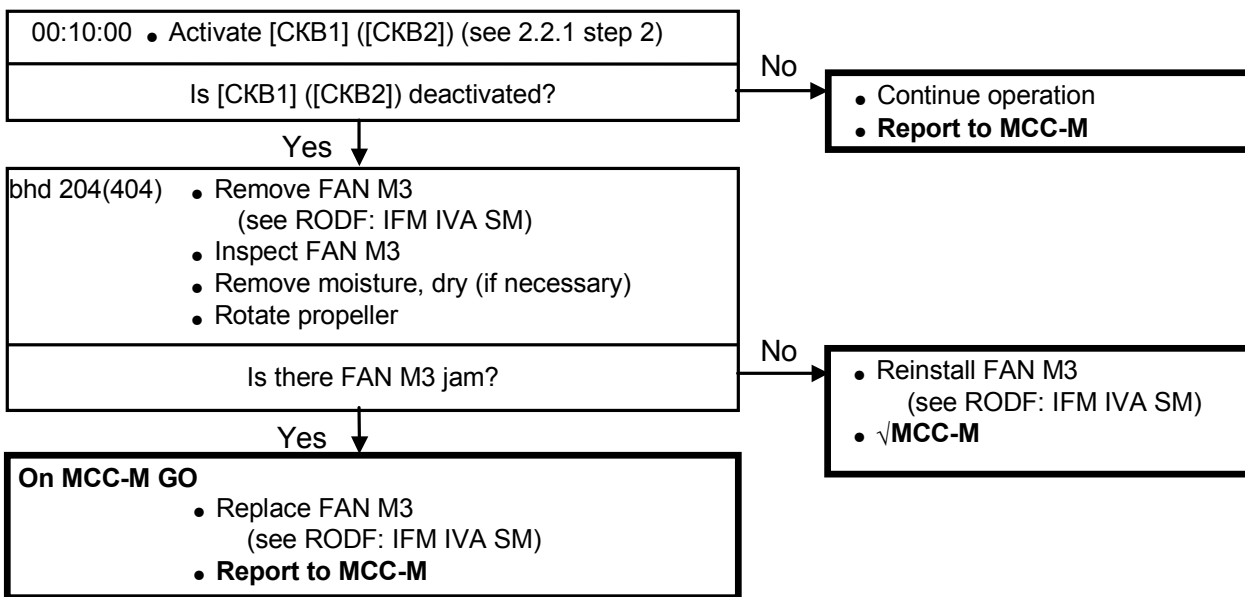
OTHER (yellow) **ALARM**

Caution events

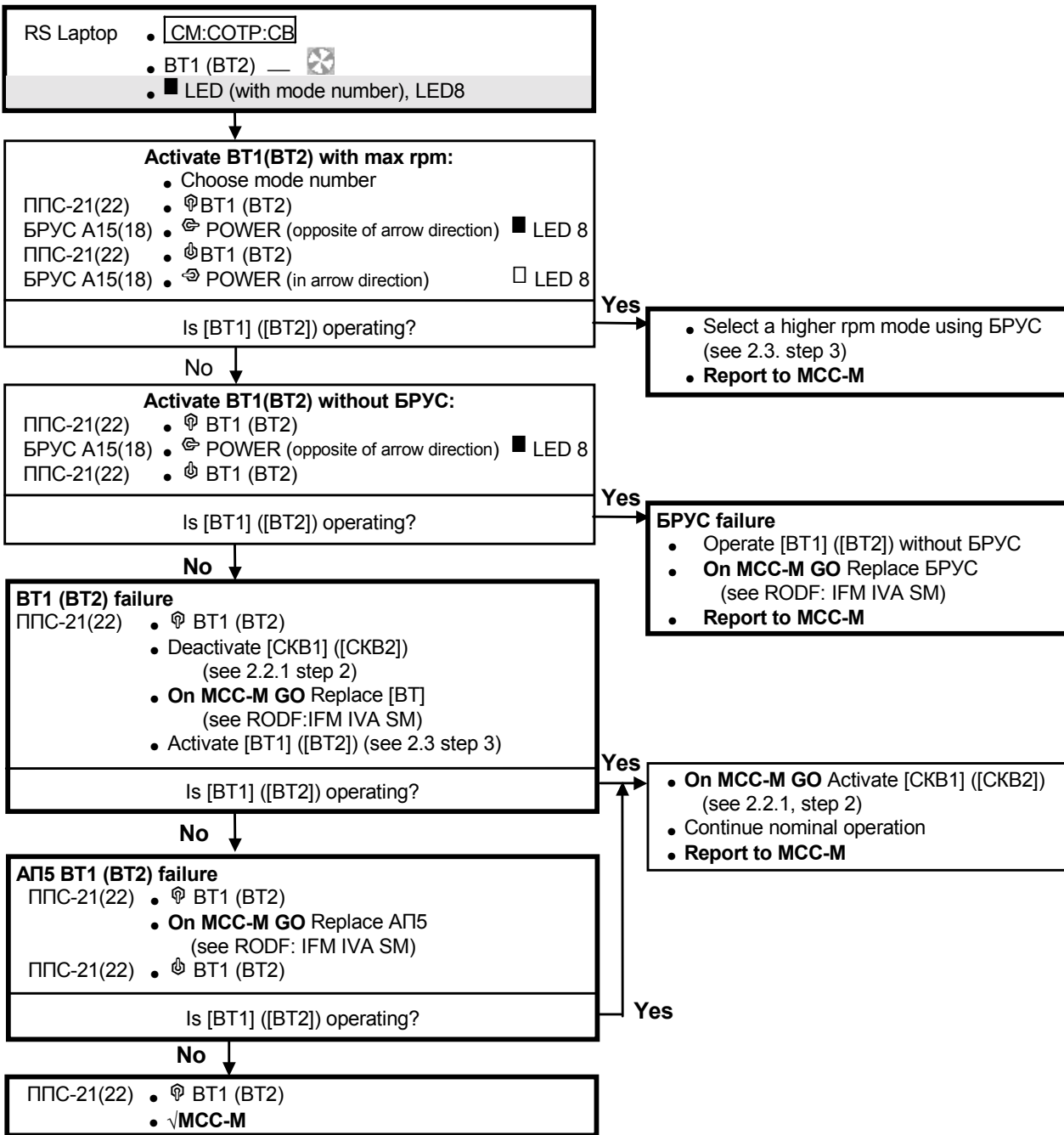
X 'SM SKV1 (2) Air Conditioner Off-Nominal Shutdown-RS'

(with act. [CKB1] [(CKB2)])

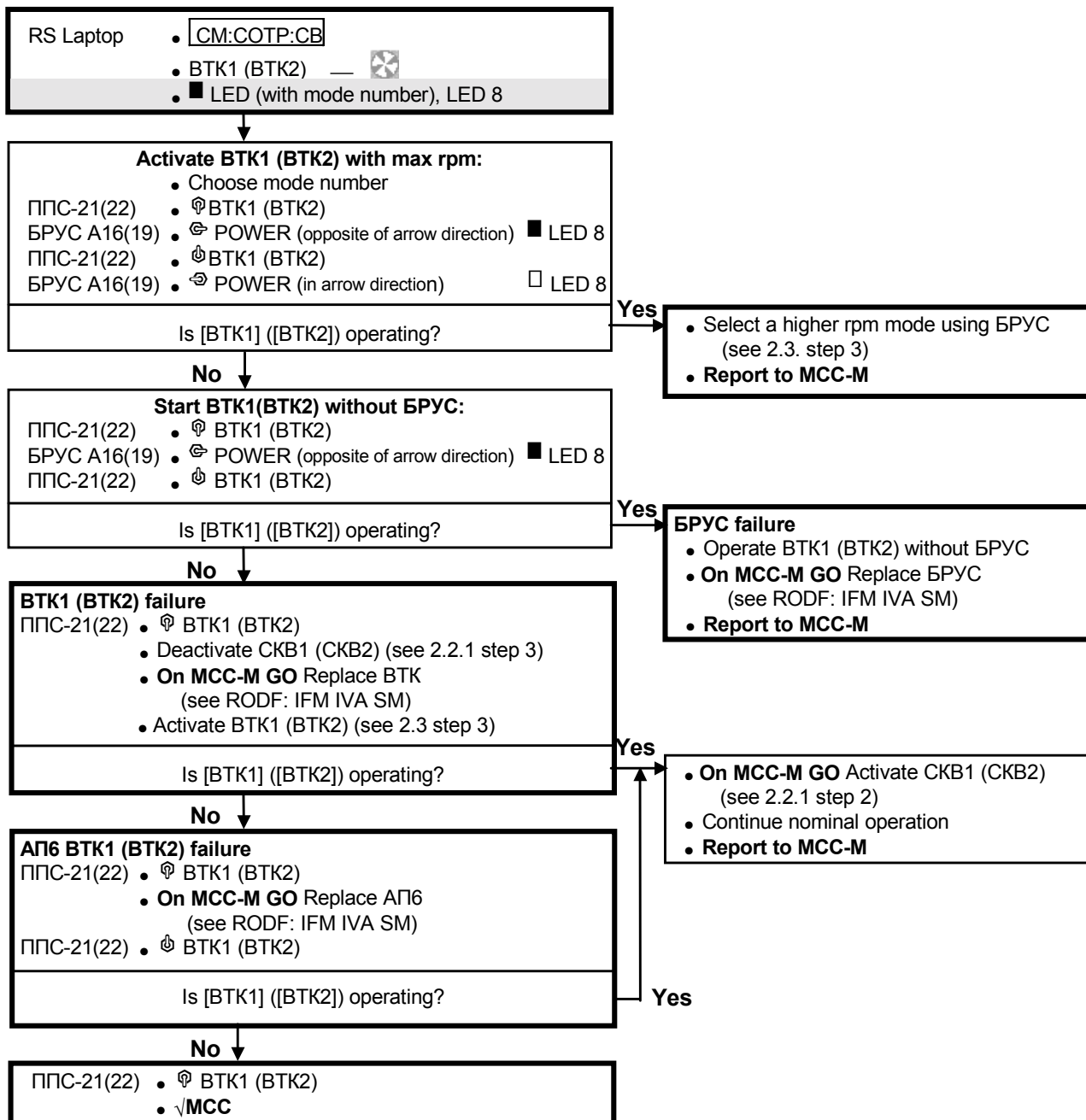


2.5.1.4. FAN REVOLUTIONS ARE ABNORMALLY LOW (ON MCC-M GO)

2.5.2. [BT1] ([BT2]) FAILURE



2.5.3. [BTK1] ([BTK2])



2.5.4. 'SM REPLACE CONDENSATE COLLECTION TANK IN SKV-RS'

PCC
RS Laptop

OTHER (yellow) **ALARM**

Caution events

X 'SM Replace Condensate Collection Tank in SKV-RS'
X 'SM SKV1 (2) Air Conditioner Off-Nominal Shutdown-RS'

(with act. [CKB1] ([CKB2]))

CM:COTP:CTP:МОК

 (condensate container is full)

 (HOK1 0...0.5 В (HOK2 0...0.5 В)

behind 131

◀ Presence of drops on condensate container indicator valve

CM:COTP:Commands

cmd T_OFSNOK (HOK alarm Cancel)

Execute

Prior to condensate container replacement [CKB1] ([CKB2]) and [MOK] are operating **on MCC-M GO**

behind 201
behind 131

1. FILLED CONDENSATE CONTAINER REMOVAL

7Кл4 → ЗАКРЫТ (Closed)

СБК indicator valve → ЗАКР (Closed) (↻)

Flexible hose ↔ ОК-32 (СБК inlet fitting) (24 mm wrench)

Cap →|← ОК-32 (cap is tethered within СБК area)

Disengage securing clamps (two) and remove condensate container

Record number and discard

131

2. NEW CONDENSATE CONTAINER INSTALLATION

Unstow new СБК from ЗИП, record number, install

Engage securing clamps (two)

cap ↔ ОК-32 (СБК inlet fitting) (24 mm wrench),
tether cap within СБК area

Flexible hose →|← ОК-32

Tighten coupling nut (24 mm wrench)

131

3. NEW СБК CONFIGURATION FOR CONDENSATE COLLECTION

New СБК indicator valve → ОТКР (Open) (↻)

⊥ ВКЛ (On) (on 7СД) into bracket

CM:COTP:CTP:МОК

 (СБК is not filled)



 (HOK1 0...0.5 В (HOK2 0...0.5 В)

201

7Кл4

→ В СБОРНИК КОНДЕНСАТА (to condensate container)

On MCC-M GO:


00:00:00 RS Laptop Activate [CKB1] ([CKB2]) (see 2.2.1, step 2)
 ≤ 00:05:00  HOK1 2...5 B  HOK2 (2...5 B) (for 30 sec)

Caution events

- ✓ 'SM Replace Condensate Collection Tank in SKV-RS'
- ✓ 'SM SKV1 (2) Air Conditioner Off-Nominal Shutdown-RS'

Report to MCC-M Serial numbers of removed and installed C6K

2.5.5. [HOK1] ([HOK2]) FAILURE

ПСС OTHER (yellow) **ALARM**
 ИИПУ SM, STATUS:COTP
 'COTP-SIG'
 COND EVAC PUMP 1 (COND EVAC PUMP 2) INOP
On MCC-M GO Replace [HOK] (see RODF: IFM IVA SM)
 Activate [CKB1] ([CKB2]) (see 2.2.1, step 2)
 RS Laptop CM:COTP: Commands
 cmd T_OFSNOK (HOK alarm Cancel)
Execute
 ИИПУ SM, STATUS:COTP
 'COTP-SIG'
 COND EVAC PUMP 1 (COND EVAC PUMP 2) INOP
 RS Laptop CM:COTP:CTP:MOK
 ◀ HOK1 (HOK2) —  (is operating per timeline)
 If no spare [HOK], evacuate condensate using manual pump (PH)
 per RODF: SM COTP (Backup Modes), 2.1.

2.5.6. MOISTURE APPEARANCE IN [CKB1]([CKB2]) AREA

behind 202(402) ◀ Appearance of moisture drops
 When [HOK1] ([HOK2]) is operating:
 ◀◀ No condensate motion in translucent hose on [HOK1] ([HOK2]) outlet
 ◀ HOK1 (HOK2) is operating ([HOK] are locked)
 00:00:00 Deactivate [CKB1] ([CKB2]) (see 2.2.1 step 3)
 00:30:00 **On MCC-M GO** Replace HOK valves 6485.130 Кл.ВХОД and
 6485.140 Кл.ВЫХОД (see RODF: IFM IVA SM)
On MCC-M GO prior to replacement, evacuate condensate from [CKB1]([CKB2])
 using manual pump [PH] per RODF: SM COTP (Backup Modes), 2.1
 00:00:00 Activate [CKB1]([CKB2]) (see 2.2.1 step 2)
 00:30:00 ◀◀ Condensate motion in translucent hose on [HOK1]([HOK2]) outlet *****

On MCC-M GO Replace inlet fitting 6485.200 with new one from spares
 00:00:00 Activate [CKB1]([CKB2]) (see 2.2.1 step 2)
 00:30:00 ◀◀ Condensate motion
Report to MCC-M

Report to MCC-M

3. ACTIVE THERMAL CONTROL SYSTEM [CTP]

3.1. ACTIVE THERMAL CONTROL SYSTEM MALFUNCTION

3.1.1. LOOP OUTSIDE LEAK


1. KOX1 LEAK

RS Laptop

CM:COTP:CTP:ПКР1

1ДД1, 1ДД2 ≤ 400 mm Hg

CM:COTP:CTP

All KOX1 pumps — 

2Н1 pump — 

CM:COTP:CTP:Statuses

Normal Pressure in KOX1

Normal Pressure in KOX2

During KOX1pri operation (prior to leak):

CM:COTP:CTP:KOX1_proc

FT_27 (Loop 1PPЖ Deactivation)

CM:COTP:CTP:KOX1

← 1PPЖ  (, )

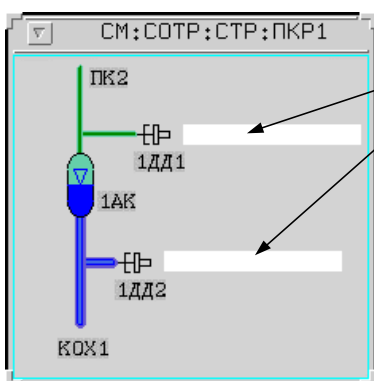


Figure 3.1.1-1. Pressure in KOX1 in the event of leak into vacuum

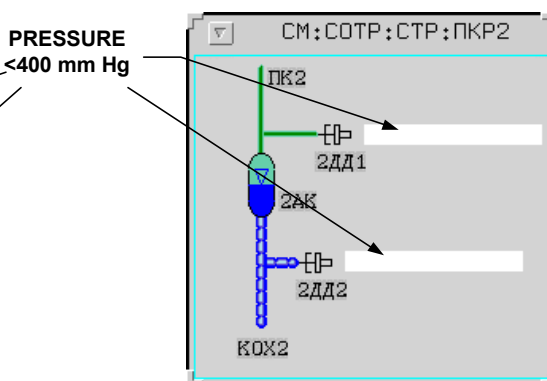


Figure 3.1.1-2. Pressure in KOX2 in the event of leak into vacuum


2. KOX2 LEAK

RS Laptop

CM:COTP:CTP:ПКР2

2ДД1, 2ДД2 ≤ 400 mm Hg

CM:COTP:CTP

All KOX2 pumps — 

1Н5, 1Н6 pumps — 

CM:COTP:CTP:Statuses

Normal Pressure in KOX1

Normal Pressure in KOX2


3. КОБ1 LEAK


RS Laptop

CM:COTP:CTP:ПКР3


3ДД1, 3ДД2 ≤ 400 mm Hg

CM:COTP:CTP

All pumps КОБ1 — 

H1,H2 4СПН1 pumps — 

CM:COTP:CTP:ЭН

3ЭН1---3ЭН6 — 

CM:COTP:CTP:Statuses

Normal Pressure in КОБ1

Normal Pressure in КОБ2

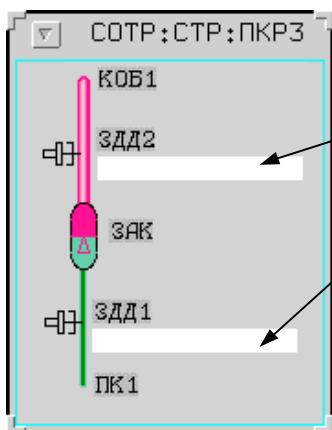


Figure 3.1.1-3. Pressure in КОБ1 in the event of leak into vacuum

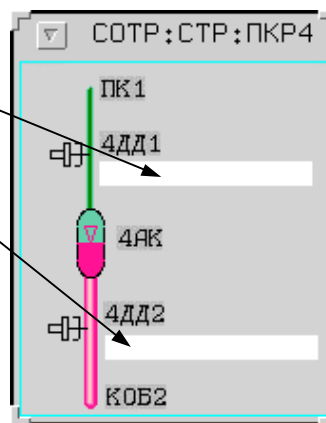


Figure 3.1.1-4. Pressure in КОБ2 in the event of leak into vacuum


4. КОБ2 LEAK


RS Laptop

CM:COTP:CTP:ПКР4


4ДД1, 4ДД2 ≤ 400 mm Hg

CM:COTP:CTP

All pumps КОБ2 — 

H1,H2 3СПН1 pumps — 

CM:COTP:CTP:ЭН

4ЭН1---4ЭН6 — 

CM:COTP:CTP:Statuses

Normal Pressure in КОБ2









Normal Pressure in КОБ1

3.1.2. КОБ1 INTERNAL LEAK

(Determined per MCC-M TIm)

On MCC-M GO:

1. TRANSFER TO 4СПН1(4СПН2) КОБ2

Transfer	Procedure CM:COTP:CTP_проц	param		CM:COTP:CTP
		1	2	
КОБ1 → 4СПН1 КОБ2	FT_106 (Transition during КОБ1 operation)	1	0	Pre. act. КОБ1 pump —  H1,H2 4СПН1 —  3ЭН1---3ЭН6 — 
КОБ1 → 4СПН2 КОБ2		1	1	Pre. act. КОБ1 pump —  H1,H2 4СПН2 —  3ЭН1---3ЭН6 — 
(КОБ1 + КОБ2) → deact. КОБ1	FT_108 (Halt КОБ units simo operation)	0		All КОБ1 pumps —  3ЭН1---3ЭН6 — 

2. КОБ1 AND COMPARTMENT PRESSURE EQUALIZATION

behind 249 ПК1 cap ↔ filling device (ПЗ)

Secure caps within ПЗ area

Кл В9 → ОТКРЫТ (Open)

00:00:00

Кл В6 → ОТКРЫТ (Open)

RS Laptop

CM:COTP:CTP:ПКР3 and CM:COTP:CTP:ПК1

00:01:00

↙ 3ДД1=3ДД2=8ДД3= P(MB) ±10 mm Hg

3. LEAK SOURCE PINPOINTING AND ISOLATION

Report to MC-M area location with PH = 8
Collect and remove traces of coolant, using paper towels
Discard used paper towels
Cover source of leak with waterproof material

√ **MCC-M**

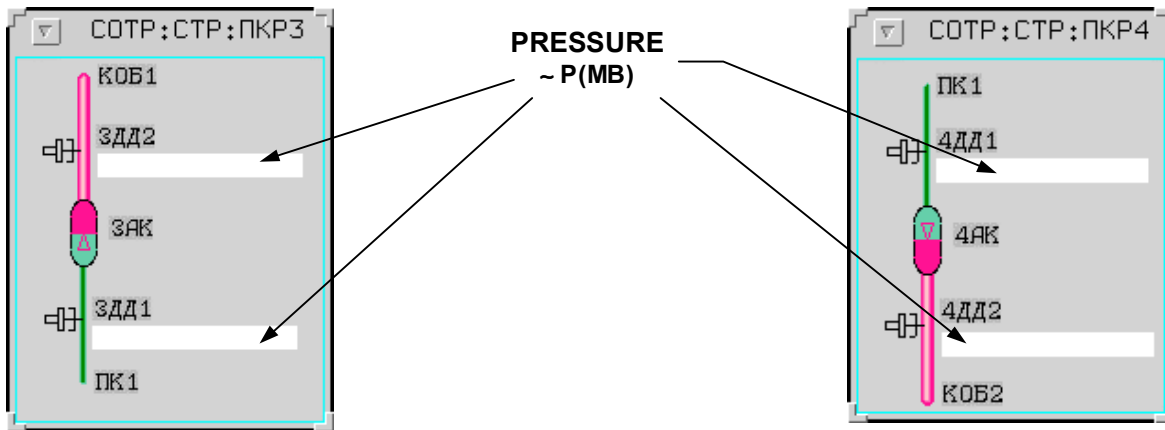


Figure 3.1.2-1 Pressure in KOБ1 in the event of internal leak

Figure 3.1.2-2 Pressure in KOБ2 in the event of internal leak

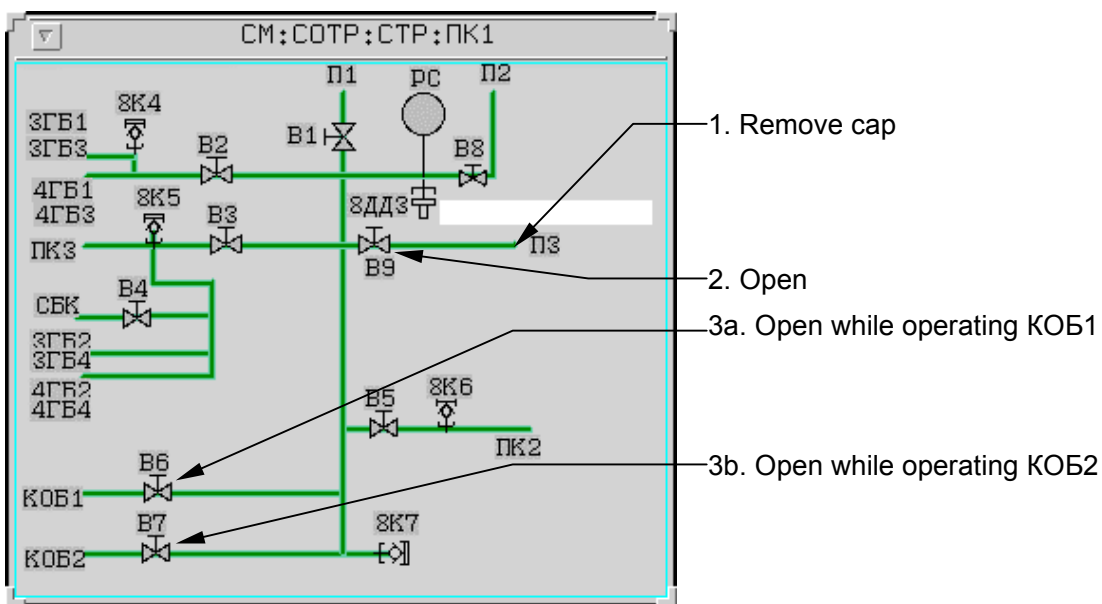










Figure 3.1.2-3 Valve panel (ПК1) operation in the event of KOБ1 (KOБ2) internal leak

3.1.3. КОБ2 INTERNAL LEAK

(Determined per MCC-M TIm)

On MCC-M GO:

1. TRANSFER TO ЗСПН1(ЗСПН2) КОБ1

Transfer	Procedure CM:COTP:CTP_проц	param		CM:COTP:CTP
		1	2	
КОБ2 → ЗСПН1 КОБ1	FT_107 (Transition during КОБ2 operation)	1	0	Pre. act. КОБ2 pump—  H1,H2 ЗСПН1 —  4ЭН1---4ЭН6 — 
КОБ2 → ЗСПН2 КОБ1		1	1	Pre. act. КОБ2 pump—  H1,H2 ЗСПН2 —  4ЭН1---4ЭН6 — 
(КОБ1 + КОБ2) → deact. КОБ2	FT_108 (Halt КОБ units simo operation)	1		All КОБ2 pumps —  4ЭН1---4ЭН6 — 

2. КОБ2 AND COMPARTMENT PRESSURE EQUALIZATION

behind 249 ПК1 cap ↔ filling device (ПЗ)

Secure caps within ПЗ area

Кл В9 → ОТКРЫТ (Open)

00:00:00 Кл В7 → ОТКРЫТ (Open)

RS Laptop CM:COTP:CTP:ПКР4 and CM:COTP:CTP:ПК1

00:01:00 < 4ДД1=4ДД2=8ДД3= P(MB) ±10 mm Hg


Pinpoint leak (see 3.1.2 step 3)

3.1.4. 'ОТКАЗ КОХУРОВ КОХ' (KOH LOOPS FAILURE)

ПСС OTHER (yellow) **ALARM**

RS Laptop Caution events

X 'SM Cooling Loops Failure-RS' (All KOX1 and KOX2 pumps failure)

 Station transfers to survival mode


√ MCC-M

3.1.5. 'ОТКАЗ КОХУРОВ КОБ' (KOB LOOPS FAILURE)

ПСС OTHER (yellow) **ALARM**

RS Laptop Caution events

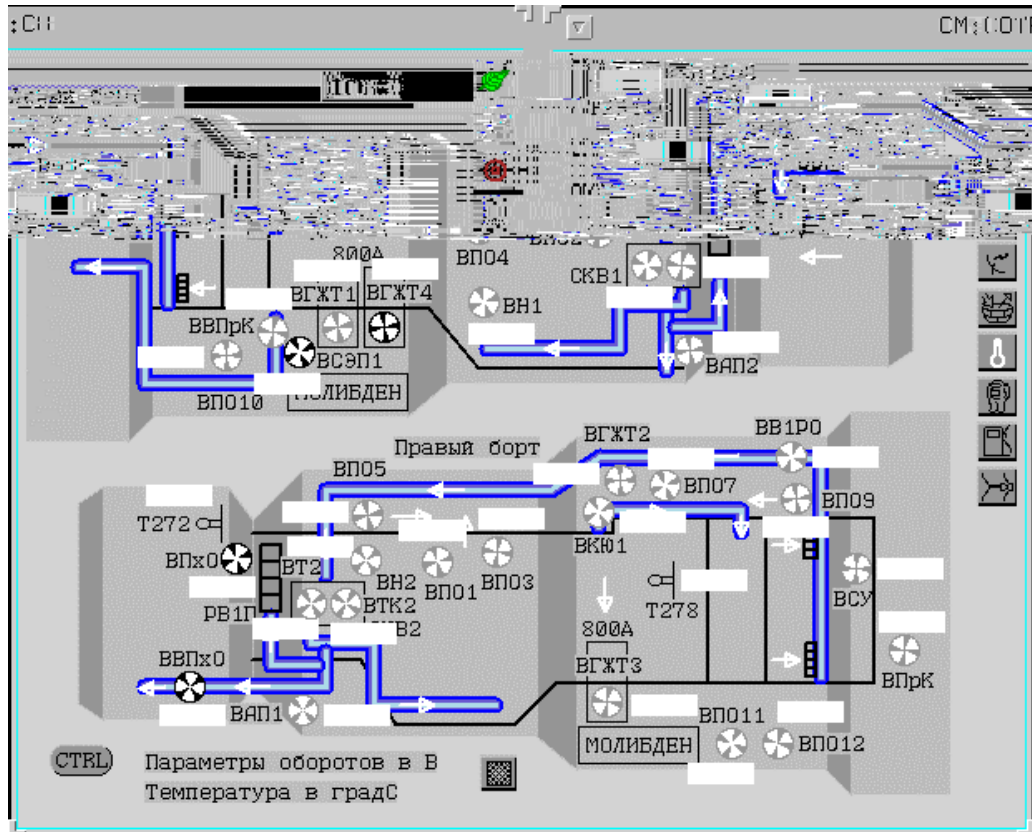
X 'SM Heating Loops Failure-RS' (All КОБ1 and КОБ2 pumps failure)

 Station transfers to survival mode

√ MCC-M

4. VENTILATION SUBSYSTEM ([CB])

4.1. [CB] DISPLAY OPERATION



ВПФ1, ВПФ2 are not indicated in the display

4.2. FAN CONTROL

4.2.1. FAN ACTIVATION/DEACTIVATION VIA SYSTEM POWER PANEL (ППС)

NOTE

1. ВАП1, ВАП2, ВВ1Р0, ВВ2Р0, ВВПрК, ВПрК, ВВПрХ0, ВПрХ0, ВГЖТ1-ВГЖТ4, ВПО1-ВПО11, ВСЭП-1, ВПФ1, ВПФ2 are running continuously. Deactivation only **on MCC-M GO**
2. ВПО12 is activated only when the treadmill is running

Activation (deactivation):
 ППС Ⓢ (Ⓢ) corresponding sw (see Table 4.2.1.)
 RS Laptop CM:COTP:CB



All activated fans — 
 All deactivated fans — 

Table 4.2.1.

Fan	Item	Onboard location	Panel	sw
BAП1	17KC.53Ю 5005-0	behind 104	ППС-22 (308)	BAП1
BAП2	17KC.53Ю 5005-0	behind 102	ППС-21 (306)	BAП2
BB1PO	MO-1-5006	behind 336, behind cover 17KCM-7661-360 on rigid air duct	ППС-23 (338)	BB1PO
BB2PO	MO-1-5006	behind 333, behind cover 17KCM-7661-360 on rigid air duct	ППС-24 (338)	BB2PO
BBПpK	MO-2-5008	behind 129	ППС-24 (338)	BBПpK
BBПxO	MO-2-5008	ПxO, cone, plane 1	ППС-22 (308)	BBПxO
BГЖT1	MO-2-5006	behind 126	ППС-24 (338)	BГЖT1
BГЖT2	MO-2-5008	behind 328	ППС-24 (338)	BГЖT2
BГЖT3	MO-2-5008	behind 128	ППС-23 (338)	BГЖT3
BГЖT4	MO-1-5006	behind 126	ППС-24 (338)	BГЖT4
BПO1	17KC.53Ю 5011-0	behind 408	ППС-22 (308)	BПO1
BПO10	MO-2-5008	behind 129	ППС-24 (338)	BПO10
BПO11	MO-2-5008	behind 131	ППС-23 (338)	BПO11
BПO12	MO-2-5008	behind 130	ППС-24 (338)	BПO12
BПO2	17KC.53Ю 5011-0	behind 208	ППС-21 (306)	BПO2
BПO3	17KC.53Ю 5011-0	behind 416	ППС-22 (308)	BПO3
BПO4	17KC.53Ю 5011-0	behind 216	ППС-21 (306)	BПO4
BПO5	MO-2-5008	behind 307	ППС-22 (308)	BПO5
BПO6	MO-2-5008	behind 307	ППС-21 (306)	BПO6
BПO7	MO-2-5008	behind 328	ППС-23 (338)	BПO7
BПO8	MO-2-5008	behind 338	ППС-24 (338)	BПO8
BПO9	MO-2-5008	behind 338	ППС-23 (338)	BПO9
BПpK	MO-2-5008	ПpK, plane 1	ППС-23 (338)	BПpK
BПxO	MO-2-5008	ПxO, cone, plane 4	ППС-21 (306)	BПxO
BПФ1	17KC.53Ю 5011-0	behind 449 (behind ПФ1)	ППС-24 (338)	BПФ1,2
BПФ2	17KC.53Ю 5011-0	behind 246 (behind ПФ2)		
BCЭП-1	MO-2-5008	behind 126	ППС-24 (338)	BCЭП1

4.2.2. [BH1] ([BH2]) CONTROL

CAUTION

1. Activate [BH1] ([BH2]) only if:

RS Laptop
 ◀ TP_CFVN1 BH1 control & monitoring
 (TP_CFVN2 BH2 control & monitoring)

2. For a time of БИТС maintenance, [BH1] ([BH2]) heater section activation is forbidden
 Operation is allowed only in fan mode

NOTE

- Cabin air heater has three sections, each section power is 200 W
- Amount and numbers of activated sections – arbitrary (per crew discretion)

Fan	Item	Onboard location	Panel	Controller
BH1	17KC.53Ю 5007-0	on 219	ПУВН, 237, crew quarters, Port	pb FAN
BH2	17KC.53Ю 5007-0	on 305	ПУВН, 440, crew quarters, Starboard	pb ZONE HEATERS

1. PANEL ACTIVATION (only during [BH1] ([BH2]) first activation)

237(440) ПУВН ↓ PANEL PWR ON LED Д1
 ↓ LAMP TEST (hold) (all) (when monitoring)

NOTE

When the crew is onboard ПУВН may remain on

2. FAN ACTIVATION

237(440) ПУВН ◀ LED Д1
 If LED Д1
 | Perform step 1
 ↓ FAN ON
 BH1(BH2) 🖐️ BH1(BH2) is running
 ↻ air flow direction (if necessary)

3. SECTION ACTIVATION (per crew discretion)

BH1(BH2) 🖐️ BH1(BH2) is running
 00:00:00
 237(440) ПУВН ↓ STATUS CHECK
 In any combination:
 ↓ ZONE HEATERS 1 ZONE 1
 ↓ ZONE HEATERS 2 ZONE 2
 ↓ ZONE HEATERS 3 ZONE 3
 00:01:00 ZONE 1,2,3
 BH1(BH2) 🖐️ Air is being heated
Report to MCC-M

4. SECTION AND [BH1]([BH2]) DEACTIVATION

CAUTION

When ↓ ZONE HEATERS OFF
[BH1] ([BH2]) and [BH1] monitoring algorithm are deactivated

237(440) ПУВН ↓ FAN OFF
↓ STATUS CHECK ■ ZONE 1,2,3
BH1 (BH2) 🧐👉 BH1(BH2) is not operating
If necessary, perform step 2 to activate [BH1] ([BH2])

5. PANEL DEACTIVATION (in the event of partial deactivation)

237(440) ПУВН ↓ PANEL PWR OFF ■ LED Д1

4.2.3. CONTROL OF CREW QUARTERS FANS (БКЮ1 (БКЮ2))

CAUTION

- When the crew is in the crew quarters, БКЮ1 (БКЮ2) should be activated
- Activate БКЮ1 (БКЮ2) only if:
RS Laptop `CM:COTP:CTP: Algorithms`
 - TP_CVKQ1 БКЮ1 monitoring
 - (TP_CVKQ2 БКЮ2 monitoring)
- For a period of БИТС maintenance, БКЮ1 (БКЮ2) operation without algorithm is allowed

Fan	Item	Onboard location	Panel	Controller
БКЮ1	MO-2-5008	behind 322	БКВ-2, 440, crew quarters, Starboard	pb ON/OFF
БКЮ2	MO-2-5008	behind 320	БКВ-2, 237, crew quarters, Port	pb ON/OFF

1. БКЮ1 (БКЮ2) ACTIVATION

440 (237) БВК-2 ↓ ON □ LED
337(332) 🧐👉 БКЮ1(БКЮ2) is running (through crew quarters overhead)
ИНПУ `SM COTP CONTROL`
'COTP-SIG'
□ FAN 1 (FAN 2) ПрК PWR ON

2. БКЮ1 (БКЮ2) DEACTIVATION

440 (237) БВК-2 ↓ OFF ■ LED
337(332) 🧐👉 БКЮ1(БКЮ2) is not running (through crew quarters overhead)
ИНПУ `SM COTP CONTROL`
'COTP-SIG'
■ FAN 1 (FAN 2) ПрК PWR ON

4.2.4. TOILET CABIN FAN (BCY) CONTROL

Fan	Item	Onboard location	Panel	Controller
BCY	17KC.53Ю 5005-0	on 455, toilet cabin	ББ-1, 455, toilet cabin	sw

NOTE.

Operates if necessary for toilet cabin ventilation

Activation (deactivation):

ББ-1



455

BCY is running (is not running)

4.2.5. LIRA EQUIPMENT FAN (БОЛ) OPERATION MONITORING (ON MCC-M GO)

Fan	Item	Onboard location	Panel	Controller	Note
БОЛ	МО-3-5010	behind 338	-	-	Operates with LIRA

In case of LIRA activation (deactivation):

RS Laptop

CM:COTP:CB

← БОЛ



4.2.6. [BK1] ([BK2], [BK3], [BK4]) OPERATION

Fan	Item	Onboard location	Panel	Controller	Note
BK1--- BK4	17KC.53Ю 5004-0	Portable	-	sw on housing, PBC10/3	Delivered

NOTE

1. BK1 --- BK4 are used to provide additional ventilation
2. Connect in SM to any PBC 10/3 (in case of fire or leak outlet is powered down automatically)

1. HARDWARE SETUP

Unstow:

BK1 (BK2, BK3, BK4) 17KC.53Ю 5004-0,
 adapter 17KC.290Ю 2001-30,
 cbl 17KC.59Ю 8259A-390 (17KC.59Ю 8259A-400, 17KC.59Ю 8259A-410,
 17KC.59Ю 8259A-420)
 bracket LIV/20

2. [BK1] ([BK2], [BK3], [BK4]) INSTALLATION (see Figure 4.2.6)

BK1 (BK2,
BK3, BK4)

Depress latch-rods flush (two)
 Into bracket grooves of BK1 (BK2, BK3, BK4)
 Align bracket pulley of BK1 (BK2, BK3, BK4)
 with adapter opening

- BK1 (BK2, BK3, BK4) bracket →|← adapter (to stop)
- BK1 (BK2, BK3, BK4) with adapter →|← LIV/20 bracket
- Screw on adapter ↺ (manually)
- LIV/20 basket with BK1 (BK2, BK3, BK4) →|← working area
- cbl BK1 (BK2, BK3, BK4) →|← cnctr on BK1 (BK2, BK3, BK4) housing
- cbl BK1 (BK2, BK3, BK4) →|← cnctr 2 PBC 10/3

3. [BK1] ([BK2], [BK3], [BK4]) ACTIVATION

PBC 10/3
BK1 (BK2,
BK3, BK4)

- 🔌
- 🔌
- 👉 BK1(BK2, BK3, BK4) is running
- Report to MCC-M**

4. [BK1] ([BK2], [BK3], [BK4]) DEACTIVATION

BK1 (BK2,
BK3, BK4)
PBC 10/3

- 🔌
- 🔌
- 👉 BK1(BK2, BK3, BK4) is not running

5. [BK1] ([BK2], [BK3], [BK4]) REMOVAL (see Figure 4.2.6)

- cbl BK1(BK2, BK3, BK4) ↔ cnctr 2 PBC 10/3
- LIV/20 bracket with BK1 (BK2, BK3, BK4) ↔ working area
- Screw on adapter ↺ (manually)
- BK1 (BK2, BK3, BK4) with adapter ↔ LIV/20 bracket
- Stow:
- BK1 (BK2, BK3, BK4) with cable,
adapter,
(УПК) LIV/20 bracket
- Report to MCC-M**

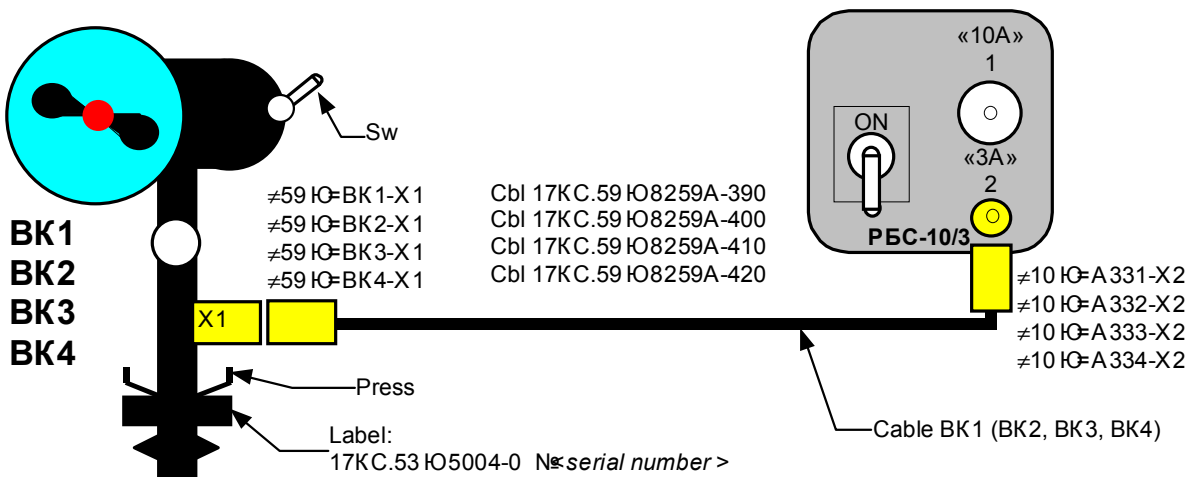


Figure 4.2.6 [BK1], [BK2], [BK3], [BK4] Connection Diagram

4.3. AIR FLOW CONTROL IN CREW QUARTERS (STARBOARD (PORT))

(per crew discretion)

1. AIR FLOW DIRECTION CHANGE

337(332) Turn rod to move louvers in desired direction

2. AIR FLOW VOLUME CHANGE

337(332) Pull handle (in the center of the crew quarters overhead)
Increase volume ↻
Decrease volume ↻
Report to MCC-M

4.4. DUST FILTER (ПФ1 (ПФ2, ПФ3, ПФ4)) INSPECTION

(Once or twice a day)

449(246,448,245) Visually inspect ПФ1 (ПФ2, ПФ3, ПФ4)
Remove foreign objects (if necessary)
Report to MCC-M

4.5. VENTILATION SUBSYSTEM [CB] PREVENTIVE MAINTENANCE

CAUTION

1. During preventive maintenance not more than two panels may be open at the same time for not more than 2 hrs. following After 2 hours, panels must be closed to 30 minutes
2. Clean panels using vacuum cleaner and/or wet wipes
3. Manually remove any large pieces of debris from [CB] hardware

4.5.1. ПФ1 (ПФ2, ПФ3, ПФ4) CARTRIDGE REPLACEMENT

(00:15:00 x four, every 20 days)

NOTE

During replacement of all dust filters, perform the operation to completion on one side prior to deactivation and filter replacement on the other side

- | | |
|--------|---|
| ППС-24 | ⊕ ВПФ1,2 |
| ППС-23 | ⊕ BB1PO (prior to ПФ1, ПФ3 replacement) |
| ППС-24 | ⊕ BB2PO (prior to ПФ2, ПФ4 replacement) |

1. ПФ USED CARTRIDGE REMOVAL

- 449(246,448,245) Loosen bolts (four) on frame (7 mm wrench or screwdriver M5)
 Remove frame
 Slide out drum with cartridge into [PO]
 Remove cartridge from drum flange and fold cartridge corrugations carefully
 Discard

2. ПФ NEW CARTRIDGE INSTALLATION

- Unstow new cartridge from spares
 449(246,448,245) Install it on drum flange
 Unfold corrugation of filter gasket
 Reinstall drum with cartridge
 Reinstall frame
 Tighten bolts (four) on frame (7 mm wrench or screwdriver M5)

- | | |
|--------|--------------------------------------|
| ППС-23 | ⊕ BB1PO (after ПФ1, ПФ3 replacement) |
| ППС-24 | ⊕ BB2PO (after ПФ2, ПФ4 replacement) |
| | ⊕ ВПФ1,2 |

Report to MCC-M

4.5.2. CLEANING OF [CKB1] ([CKB2]) GAS-LIQUID HEAT EXCHANGER (ГЖТ) GRILL

(01:00:00 x two, every 6 months)

Deactivate CKB1(CKB2) (see 2.2.1 step 3)

Deactivate BT1, BTK1 (BT2, BTK2) (see 2.3)

Loosen bolts (twenty) on rigid air duct removable panel at ГЖТ inlet
(8 mm wrench)

Removable panel ←→ rigid air duct

behind 204(404) Clean ГЖТ with vacuum cleaner

Removable panel →← rigid air duct

Tighten fastening bolts (twenty) on rigid air duct removable panel
at ГЖТ inlet (8 mm wrench)

Activate BT1, BTK1 (BT2, BTK2) (see 2.3)

Activate CKB1 (CKB2)(see 2.2.1 step 2) (if necessary)

Report to MCC-M**4.5.3. GAS ANALYZER (ГА) VENTILATION CLEANING**

(00:15:00)

ППС-24

⊕ ВПФ1,2

ППС-23

⊕ ВВ1РО

450

Clean screen on panel

behind 449

Clean grill on air duct housing between ПФ1 and ПФ3

ППС-23

⊕ ВВ1РО

ППС-24

⊕ ВПФ1,2

Report to MCC-M**4.5.4. SCREEN FILTER CLEANING****1. ΦC9 ВДПрК SCREEN FILTER CLEANING**

(00:10:00, every 2 months)

129

Clean screen filter (at ВДПрК inlet)

Report to MCC-M**2. ΦC14 SCREEN FILTER CLEANING ON ГЖТ2**

(00:20:00, every 6 months)

NOTE

1. СЭП equipment ('Molibden' hardware and units 800) may continue to operate
2. ΦC14 is allowed not to be retrieved from guides if access is good

ППС-23

⊕ ВПО7

ППС-24

⊕ ВГЖТ2

behind 327

Loosen fastening bolt ΦC14 (8 mm wrench)
Pull ΦC14 out of guides (using loop) into [PO]
Clean with vacuum cleaner

Reinstall ΦC14

Tighten fastening bolt

ППС-23

⊕ ВПО7

ППС-24

⊕ ВГЖТ2

Report to MCC-M

3. ΦC16 SCREEN FILTER CLEANING ON ΓЖТЗ

(00:30:00, every 6 months)

NOTE

СЭП equipment ('Molibden' hardware and units 800) may continue to operate

- ППС-23 ⚙ ВГЖТЗ
 behind 124,128 Lift flexible air duct (using strip)
 Loosen fastening bolt ΦC16 (8 mm wrench, during the first cleaning)
 Pull ΦC16 out of guides (using loop) into [PO]
 Clean with vacuum cleaner
 Reinstall ΦC16
 Cover with flexible air duct (using strip)
- ППС-23 ⚙ ВГЖТЗ
 Report to MCC-M

4.5.5. FLEXIBLE AIR DUCT CLEANING

(00:20:00, every 2 months)

- ПхО Clean flexible air duct (outside surface) with vacuum cleaner

4.5.6. FAN SCREEN CLEANING

(every 2 months)

Perform operations, see Table 4.5.6.

CLEANING OF FAN SCREENS

Table 4.5.6.

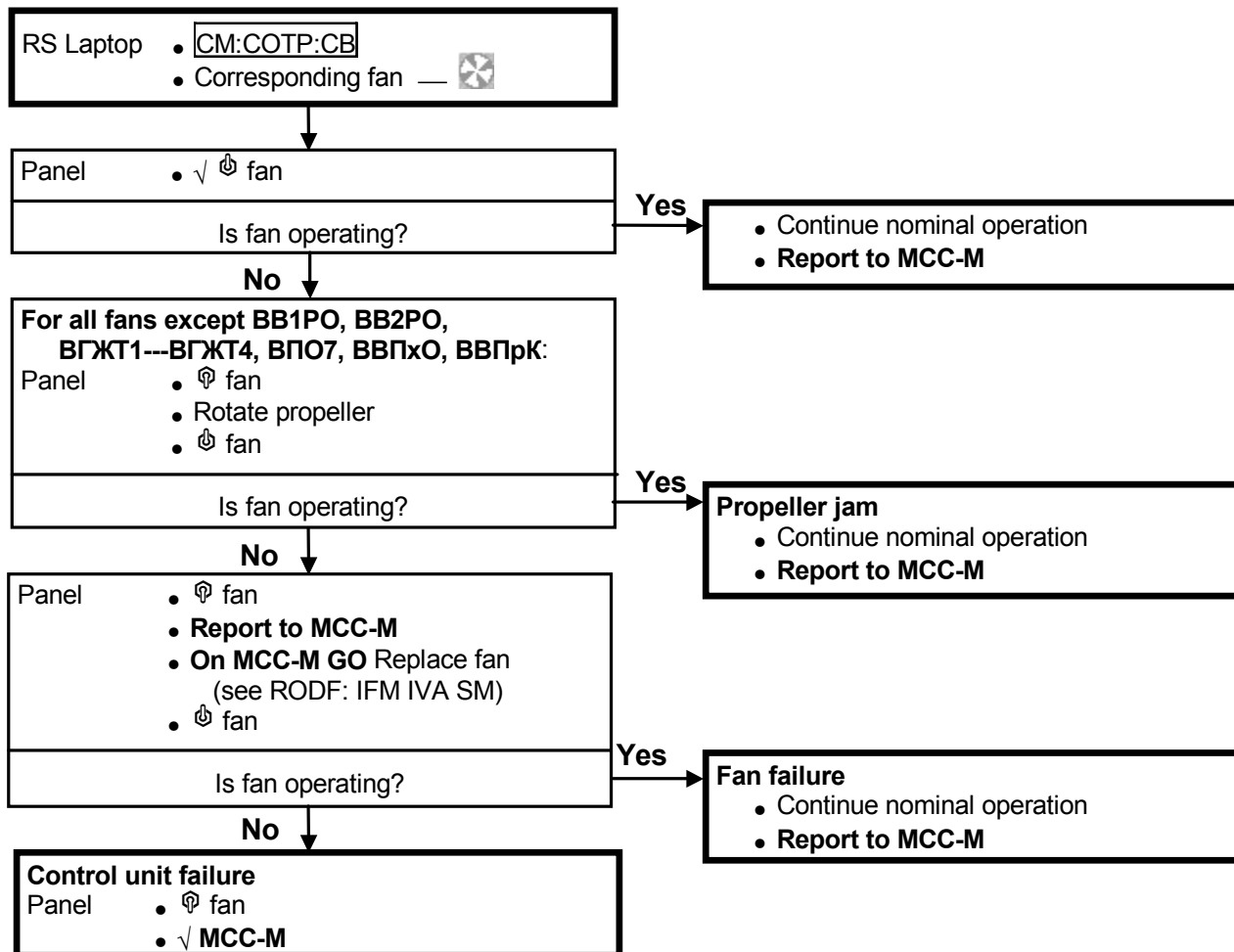
#	Screen	Fan location	Fan control	Operation	Note	Duration
1	ВГХО ВГРК	ГХО, pl 4 ГРК, pl 1-4	ППС-21	Deactivate fan		00:10:00
			ППС-23	Clean screen		00:10:00
			БВ-1	Activate fan		00:10:00
3	ВПО1 ВПО3 ВПО5	behind 408 behind 416 behind 307	ППС-22	Deactivate treadmill	Do not open more than two panels at a time	00:20:00
			ППС-23	(during ВПО10, ВПО11, ВПО12 cleaning)		
			ППС-21	Deactivate fan		
4	ВПО2 ВПО4 ВПО6	behind 208 behind 216 behind 307	ППС-21	Clean screen		00:20:00
			ППС-24	Activate fan		
			ППС-23			
5	ВПО8 ВПО9	behind 338 behind 338	ППС-24			00:20:00
			ППС-23			
			ППС-24			
6	ВСЭП1	behind 126	ППС-24		PT-50-1 (two) may continue to operate	00:20:00
			ППС-22			
			ППС-21			
7	ВАП1 ВАП2	behind 104 behind 102	ППС-22		Instruments in ВАП1 (ВАП2) area may continue to operate	00:20:00
			ППС-21			
			ППС-24			
8	ВПО10 ВПО11 ВПО12	behind 129 behind 131 behind 130	ППС-24		Do not open more than two panels at a time. ВПО12 operates with treadmill	00:20:00
			ППС-23			
			ППС-24			
9	ВН1 ВН2	219 305	ПУВН	Deactivate fan and sections via ПУВН		00:10:00
			↓ FAN OFF (ON)	Clean screen		
10	ВОЛ	behind 339	-	Activate fan (if necessary) via ПУВН		00:20:00
				Deactivate LIRA		
11	ВКЮ1 ВКЮ2	322 320	ББК-2	Clean screen		00:10:00
			↓ OFF (ON)	Deactivate fan via ББК-2		
12	ВГЖТ1 ВГЖТ4	behind 126 behind 126	ППС-24	Activate fan (if necessary) via ББК-2		00:20:00
			ППС-24	Deactivate fan		

4.6. VENTILATION SUBSYSTEM [CB] MALFUNCTION

4.6.1. FAILURE OF FANS CONTROLLED VIA ППС AND OF TOILET CABIN FAN

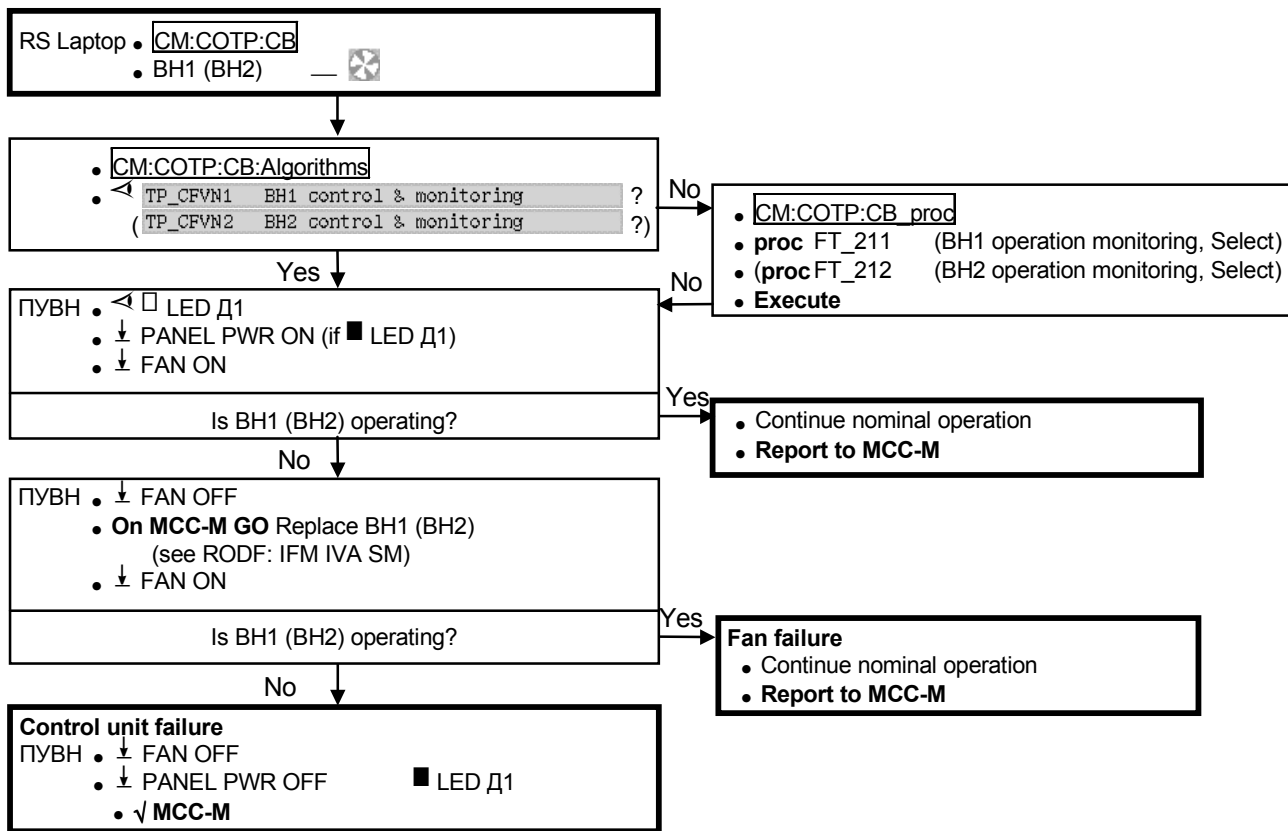
CAUTION

In case of ВВПхО failure, ventilation between SM and NODE1 may be disrupted



4.6.2. CABIN AIR HEATER ([BH1] ([BH2])) FAILURE

1. [BH1] ([BH2]) FAN STOP

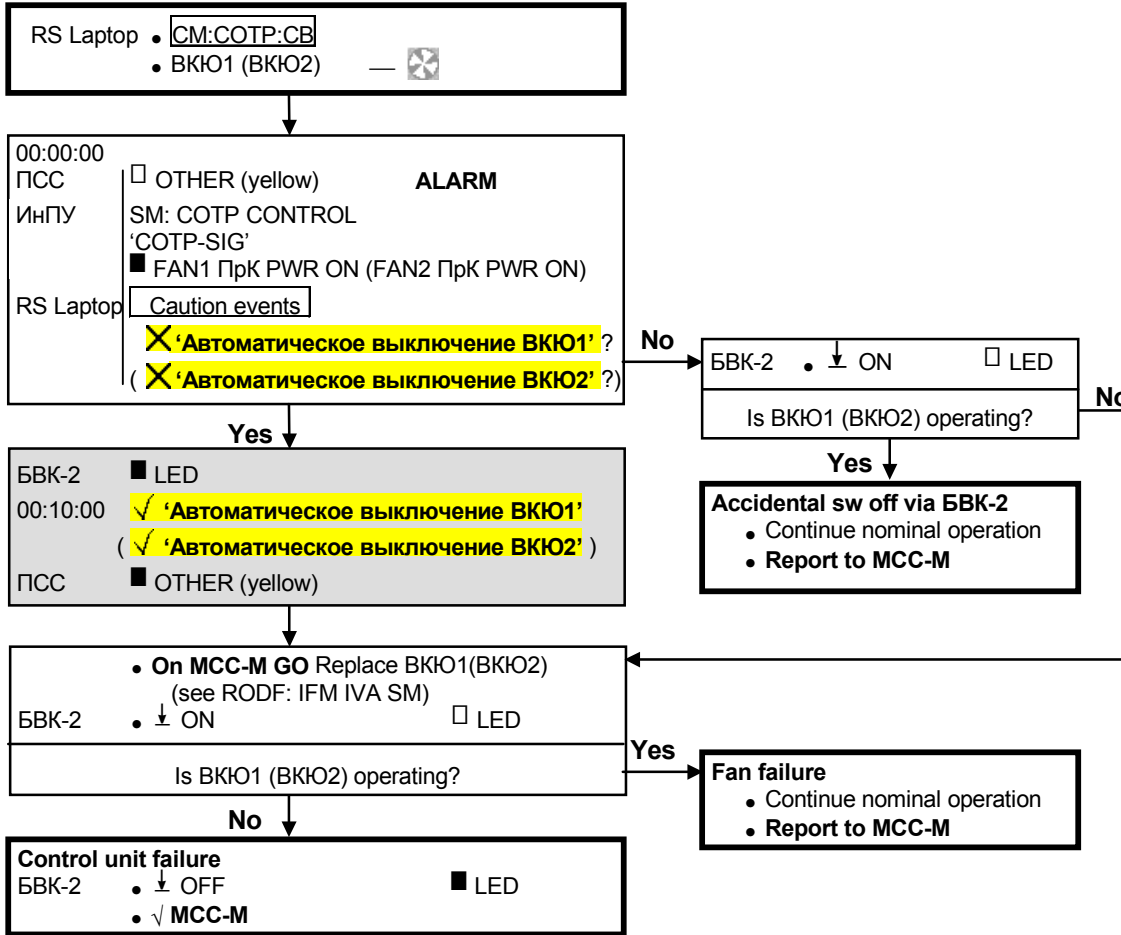


2. BURNING SMELL FROM [BH1] ([BH2])

237(440) ПУВН ↓ FAN OFF
 ↓ STATUS CHECK (hold)
 < ▣ ZONE 1, 2, 3
Report to MCC-M
On MCC-M GO Replace fan (see RODF: IFM IVA SM)

4.6.3. CREW QUARTERS FAN (BKЮ1 (BKЮ2)) FAILURE

CAUTION
Crew stay in Starboard (Port) crew quarters is forbidden



After malfunction is eliminated (with automatic shutdown):

ИНПУ Switch off indicator light FAN1 ПрК PWR ON (FAN2 ПрК PWR ON)
(see RODF: MANUAL CONTROLS 2.5.2.)

Report to MCC-M

4.6.4. PERSONAL FAN ([BK1] ([BK2], [BK3], [BK4])) FAILURE

- BK1(BK2,BK3,BK4) ☞
- РБС 10/3 ☞
- √ All connectors mating
- ☞
- BK1(BK2,BK3,BK4) ☞
- ☞ BK1(BK2, BK3, BK4) is running

Use the other [BK] or
ON MCC-M GO Replace fan
(see RODF: IFM IVA SM)

Report to MCC-M