

DA 42 AFM  
with OÄM 42-102  
Garmin GFC 700  
Supplement S05



MISSION POWER  
SUPPLY SYSTEM

**SUPPLEMENT S05**

**TO THE AIRPLANE FLIGHT MANUAL**

**DA 42 with Garmin GFC 700 (OÄM 42-102)**

**MISSION POWER SUPPLY SYSTEM**

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9-S05-1

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## 0.1 RECORD OF REVISIONS

Rev. No.	Reason	Chapter	Page(s)	Date of Revision	Approval No.	Verification	Date Inserted	Signature

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## **1. GENERAL**

The DA 42 with Garmin GFC 700 (OÄM 42-102) can be equipped with optional modifications which serve as a preparation for a camera-, scanner- and/or sensor equipment installation.

### **NOTE**

This supplement contains all necessary information to operate the DA 42 with mission power supply system installed. The installation and operation of such equipment must be certified separately.

This supplement to the AFM must be used in conjunction with the individual AFM supplement of the mission equipment. Information contained in the AFM supplement for the mission equipment supersedes the information contained herein.

## **2. OPERATING LIMITATIONS**

### **2.15 LIMITATION PLACARDS**

On the Control panel MPP:

CONFIRM EACH ALTERNATOR  
LOAD IS LESS THAN 40A  
ALL THE TIME.

SWITCH OFF MISSION MASTER  
IMMEDIATELY WHEN ONE OF THE  
FOLLOWING CONDITIONS APPLY:

- ABNORMAL CONDITION
- EMERGENCY CONDTION
- LH. OR RH. ALT. LOAD MORE  
THAN 40 A
- ICING CONDITION

### **2.16 OTHER LIMITATIONS**

#### **2.16.2 BATTERY CHARGE**

Taking off with an empty battery is not permitted. Therefore the use of an external power supply for engine starting with an empty airplane battery is also not permitted.

In this case the airplane battery must first be charged or replaced.

##### **2.16.11 MISSION EQUIPMENT**

The operation of mission equipment is only possible if the design change advisory VÄM 42-002 was carried out.

Max. power consumption of each alternator:.....40 A indicated on the G1000

### 3. EMERGENCY PROCEDURES

#### **WARNING**

Mission system power supply must be switched off in any emergency, abnormal, icing condition or when a single alternator load of more than 40 A is indicated on the G1000 system.

1. MISSION MASTER ..... OFF

**END OF CHECKLIST**

### 3.8 SMOKE AND FIRE

#### 3.8.6 CABIN SMOKE

1. MISSION MASTER ..... OFF

*Initiate an emergency descent:*

2. FLAPS ..... UP
3. LANDING GEAR ..... DOWN
4. POWER lever ..... IDLE
5. Airspeed ..... as required

#### **WARNING**

Max. structural cruising speed . . . . .  $V_{NO} = 151$  KIAS  
Never exceed speed in smooth air . . . . .  $V_{NE} = 188$  KIAS

6. Land at the nearest suitable airfield.

**END OF CHECKLIST**



## 4A. NORMAL OPERATING PROCEDURES

### 4A.6 CHECKLISTS FOR NORMAL OPERATING PROCEDURES

#### NOTE

This supplement contains all necessary information to operate the DA 42 with mission power supply system installed. The installation and operation of such equipment must be certified separately.

#### 4A.6.1 PRE-FLIGHT INSPECTION

##### *I. Cabin check*

##### *Mission power supply system:*

- a) ELECT. MASTER .....ON
- b) MISSION MASTER .....ON
- c) AMPERE/VOLTMETER .....check operation
- d) MISSION MASTER .....OFF
- e) ELECT. MASTER .....OFF

**END OF CHECKLIST**

## 4A.6.22 USING MISSION EQUIPMENT

### *Starting mission:*

1. Operation of both alternators ..... checked
2. Single Alternator load ..... each checked, less than 40A
3. MISSION MASTER ..... ON
4. Single Alternator load ..... each checked, less than 40A

### **WARNING**

Mission system power supply must be switched off in any emergency, abnormal, icing condition or when a single alternator load of more than 40 A is indicated on the G1000 system.

5. BUS 1-6..... ON, if required
6. Continuously check alternator load ..... each checked, less than 40A

### **NOTE**

Detailed information concerning operation of the individual mission equipment e.g.: laserscanners, cameras, datalink systems are outlined in the individual AFM supplements for that equipment.

### *After mission:*

1. BUS 1-6..... OFF
2. MISSION MASTER ..... OFF

### **END OF CHECKLIST**

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## **4B. ABNORMAL OPERATING PROCEDURES**

### **WARNING**

Mission system power supply must be switched off in any emergency, abnormal, icing condition or when a single alternator load of more than 40 A is indicated on the G1000 system.

1. MISSION MASTER .....OFF

**END OF CHECKLIST**

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## **5. PERFORMANCE**

### **NOTE**

Detailed information concerning performance of the DA 42 with individual mission equipment e.g.: laserscanners, cameras, datalink systems is outlined in the individual AFM supplements for that equipment.

## 6. MASS AND BALANCE

### 6.4 FLIGHT MASS AND CENTER OF GRAVITY

#### 6.4.1 MOMENT ARMS

The most important lever arms aft of the Datum Plane:

Item	Lever Arm	
	[m]	[in]
Connector Box [3,3 kg]	3.45	135.8

#### **NOTE**

The maximum allowed load in the cockpit baggage compartment is reduced by the weight of the connector box

**6.5.1 ADDITIONAL EQUIPMENT LIST**

Each item of additional equipment must be filed in this table:

Airplane Serial No.:		Registration:		Date:	Page: /
No.	Description Manufacturer	Serial Number	Mass [kg]	Lever arm [m]	Moment [kgm]

## **7. DESCRIPTION OF THE AIRPLANE AND ITS SYSTEMS**

### **7.15 MISSION SYSTEM POWER SUPPLY**

#### **7.15.1 GENERAL**

The DA 42 with Garmin GFC 700 (OÄM 42-102) can be equipped with an optional power supply system which serves as the electrical power source for additional measurement-, datalink-, camera-, scanner-, sensor- and radar- equipment.

#### **NOTE**

Detailed information concerning the individual mission equipment e.g.: laserscanners, cameras, datalink systems is outlined in the individual AFM supplements for that equipment. This supplement describes all necessary information to operate the mission power supply system.

As shown in Fig.1 and Fig. 2, the mission power supply system consists of the following components:

- Connector box – installed in the front RH side of the rear baggage compartment
- Cable duct – installed on the RH side of cabin
- Mission power relay – installed on the LH side of the battery compartment
- Control panel – installed on the RH side pocket recess

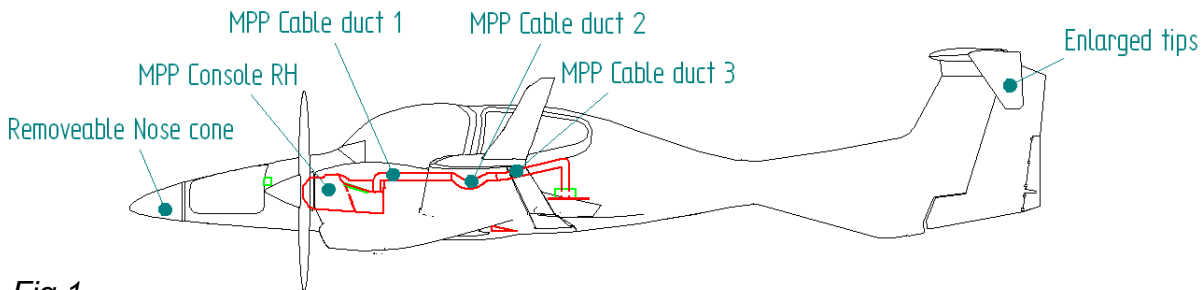


Fig. 1

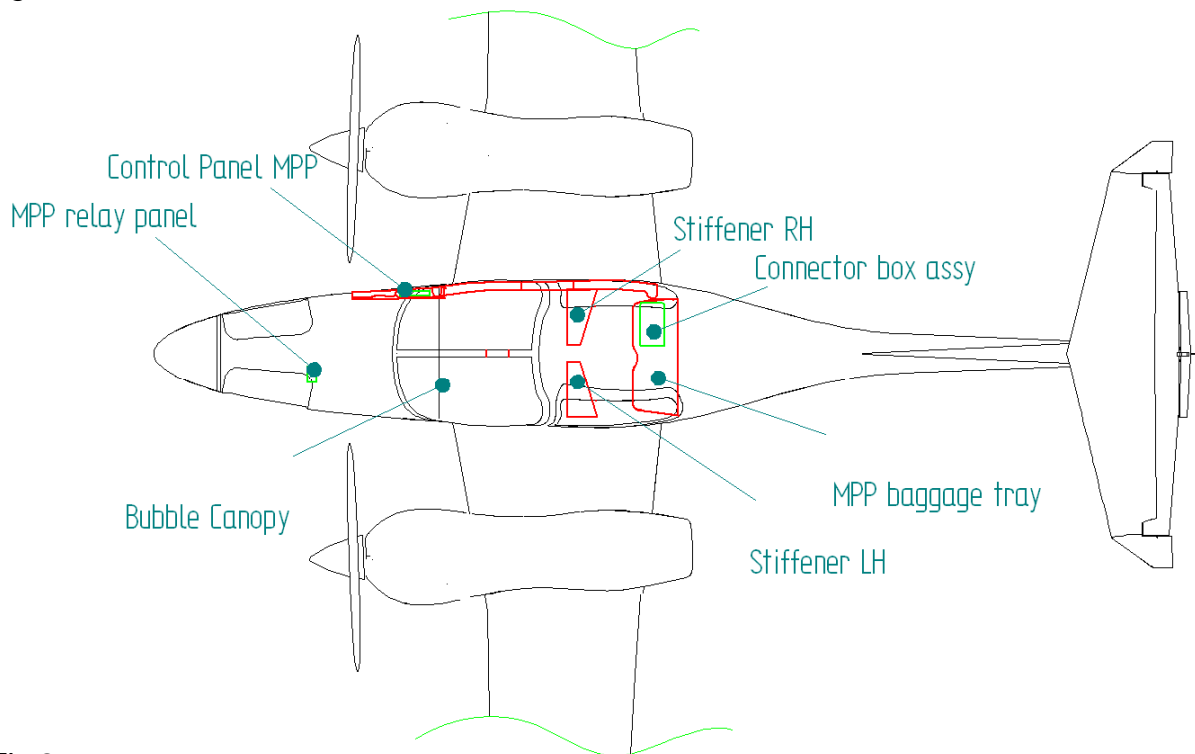


Fig. 2

### Connector box

The connector box, installed behind the RH rear seat, can be seen as the central power source for additional equipment. The connector box is fully controllable with the control panel installed in the MPP console RH.



The connector box provides the following features:

- Amperemeter / Voltmeter indication
- 6 electrical buses (controlled by the control panel)

Bus No.	Max. supplied Power [A]	Supplied Voltage [V]	PIN	
			PWR / GND	
BUS 1	30	28	A	B
BUS 2	15	28	A	B
BUS 3	15	28	A	B
BUS 4	15	28	A	B
BUS 5 & 6	9	14	4	1

#### **NOTE**

The maximum required electrical power of the mission equipment must not exceed 40A @ 28V (indication on the Amperemeter / Voltmeter).

Each power cable of the additional equipment must be connected to the bottom side of the connector. The bottom side is accessible by unlocking the camlocks on the LH and RH side of the MPP baggage tray cover and turns the whole assembly upwards. Cable excess length of mission equipment can also be stored in this compartment. The connection to the additional equipment can be done by putting the cable through the opening on the rear LH and RH side of the MPP baggage tray cover.

#### Cable duct

The cable duct, installed on the RH side of the cabin, serves as the cable guide for the mission equipment cables. Detailed information concerning removing and installation of the cable duct are outlined in the AMM of the DA 42.

### Mission power relay

The Mission power relay is installed on the LH side of the battery compartment and connected to the battery bus of the DA 42. The whole mission bus can be disconnected from the aircraft power supply by turning the “Mission Master” switch to the “OFF” position.

### Control panel

The control panel is installed in the MPP console on the RH side. Power supply to the whole additional equipment can be controlled via this panel. By turning the “Mission Master” switch to the “ON” position the whole additional equipment can be switched on by turning the switches BUS 1 to BUS 6. Refer to the AFM supplement for the individual mission equipment for more details. The whole system can be switched off by turning the “MISSION MASTER” switch back into the “OFF” position.

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## 8. AIRPLANE HANDLING, CARE AND MAINTENANCE

No change.

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