

# HMM Single Duct Cabin Unit

for Crew Cabins,  
Manual Model



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The Halton HMM is a manually operated cabin unit for single duct applications. Airflow is controlled via an adjusting knob installed through the diffuser. The control mechanism has mechanical limits for minimum and maximum airflows. Airflow limits can be easily set during commissioning. HMM is recommended to be used in conjunction with Halton's TBM (rectangular) or TDM (circular) diffusers, while the mechanism has to be fixed to the diffuser's structure. The manual cabin unit can be supplied with reheat - controlled by room control panel (CP-unit). HMM cabin unit is designed for ductwork pressure from 50Pa up to 1000Pa.

- Airflow adjustment with diffuser knob, painted with the diffuser color
- Mechanical max/min airflow limits for easy commissioning

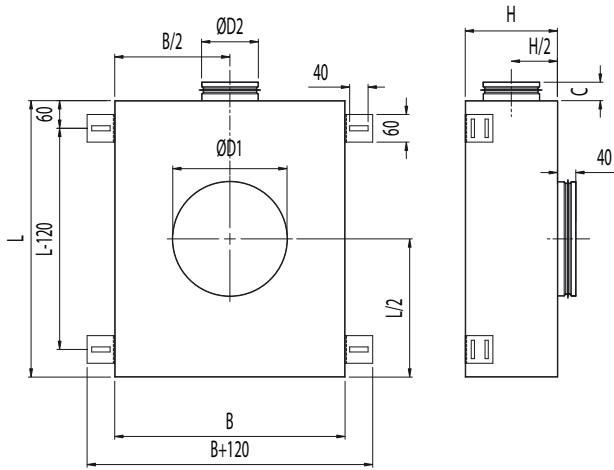
- Airflow measurement pipes as an option
- Applicable to B-0 and B-15 installations

### Additional features with reheat models

- Reheating coil 400 or 800W
- 90° safety switch with manual reset
- Inbox temperature measurement with overheat limit to cut-off reheater power
- Triac controlled reheating coil, adjustable heating power
- Master/slave functionality: several slave cabin units can be connected to one master cabin unit.
- All parameters can be preset at the factory or set onsite during commissioning by Palm handheld or laptop computer with LRC software (only available with model D03)

PART	MATERIAL	PART	MATERIAL
Casing	Hot galvanized steel	Reheat coil	AISI 304
Spigots	Hot galvanized steel and EPDM rubber	Cables	Halogen free
Insulation	Mineral wool, s = 25 mm, MED approved	Measurement wings	Aluminium / polyurethane
I/O unit	Aluminium / plastic / electronics		

## GENERAL HMM drawing



## DIMENSIONS TABLE

HMM Dimensions						
	B	C	L	H	ØD1 male/ female	ØD2 male/ female
HMM-80	450	25	550	150	159/161	79
HMM-100	500	40	600	200	199/201	99/101
HMM-125	500	40	600	240	249/251	124/126

Note:  
male connection: outer dimension  
female connection: inner dimensions

## HMM PRODUCT MODELS

### I/O unit (input / output unit, inside a cabin unit)

- 230V power supply connector
- Triac to control reheat coil
- Connector for IC-cable
- Connector for inbox temperature measurement (NTC sensor)
- Fuses to protect I/O, CP and triac
- Programming connector (model D03)
- Two diagnose LEDs
- Trimmers to set; Temperature offset, Overheating protection temperature and Max. reheat power (model K01)

### CP unit (control panel)

Halton Marine HMM cabin units with reheater are available with two different control panels; push buttons and rotating knob. See configuration table on HALTON HIT.

### CP unit features

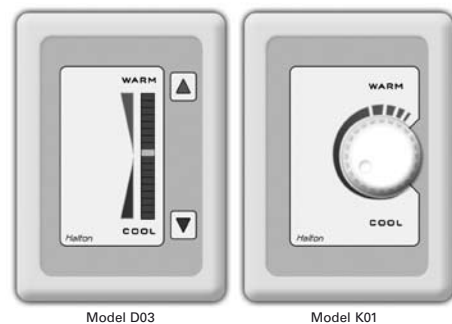
- Cabin temperature measurement
- Two push buttons, 18 led bar (model D03), Knob adjusting (model K01)
- Self diagnose function (model D03)
- Internal fault LED
- Connector for IC-cable
- LED intensity control and auto dimming (model D03)
- Connectors for infrared adapter or PCC cable (Programming cable) to set cabin parameters (model D03)
- Programming connector (model D03)
- Palm / laptop software for parameter setting (Palm handheld / laptop required)

### IC-Cable ICx-7 (interconnection cable)

- For CP-unit - I/O unit connection.
- Prefabricated with plugs on both sides
- CP side plug designed to be pulled through standard installation pipe
- Halogen free and flame retarding
- Standard length is 7 meters



Halton IC-Cable



Halton control panels K01 and D03 for HMM cabin units

## ACCESSORIES FOR HMM CABIN UNITS

### MS-Cable MSx-7 (master-slave cable)

- For master cabin unit - slave cabin unit/units connection
- Prefabricated with plugs on both sides
- Halogen free and flame retarding
- Standard length is 7 meters

### LIA-1 Infrared adapter

- For connection between Palm and CP-unit to set cabin parameters
- One per Palm handheld needed

### PCC-cable (programming cable)

- For connection between laptop and CP-unit to set cabin parameters
- One per laptop needed

### Reheaters available

- 400 W
- 800 W

Practical power level may be software adjusted cabin by cabin. Cable and power supply design has to be done according to maximum available heating power.

### Airflows for HMM cabin unit with reheat coil

Minimum airflows		
Reheater Power (W)	Min. airflows (m <sup>3</sup> /h)	
	HMM-100	HMM-125
400	100	100
800	130	130

Note:  
HMM-80 is not available with reheaters

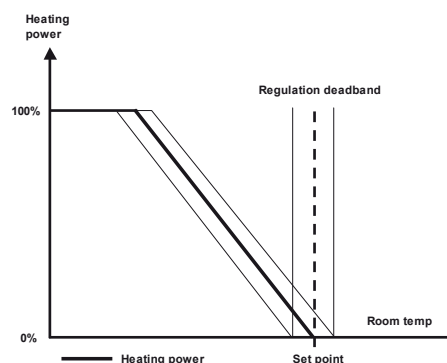
## FUNCTION

The power supply to CP-unit comes from I/O unit (installed in cabin unit) via interconnection cable.

LRC-1 system will regulate room temperature regarding the temperature set point that is set with the CP-unit.

When passenger demands for warmer temperature by using CP-unit, the controller activates the electric reheater inside the cabin unit. When the required temperature in the cabin is achieved, the reference is held until the temperature demand changes.

### Regulation Diagram with reheater



### Operating range for HMM

HMM		
HMM-80	HMM-100	HMM-125
0 m <sup>3</sup> /h - 250 m <sup>3</sup> /h	0 m <sup>3</sup> /h - 350 m <sup>3</sup> /h	0 m <sup>3</sup> /h - 500 m <sup>3</sup> /h

## ADJUSTMENT

The supply flow rate is determined by using the measurement pipes and manometer.

The diffuser front plate are removed and tubes are passed through the diffuser. Measure the differential pressure with a manometer. The flow rate is calculated using the formula below.

$$q_v = k * \sqrt{\Delta p_m}$$

$q_v$  = airflow (m<sup>3</sup>/h)

k = k factor

$\Delta p_M$  = measured pressure (Pa)

### K-factors table

HMM	k
HMM-80	42,3
HMM-100	48,2
HMM-125	74,2

Adjust the minimum airflow rate by rotating the D-shape bar until the desired setting is achieved. Move the minimum airflow mechanical limiter against the stand and tighten socket cap screw. Adjust the maximum airflow rate by rotating the D-shape bar until desired setting is achieved. Move the maximum airflow mechanical limiter against the stand and tighten socket cap screw.