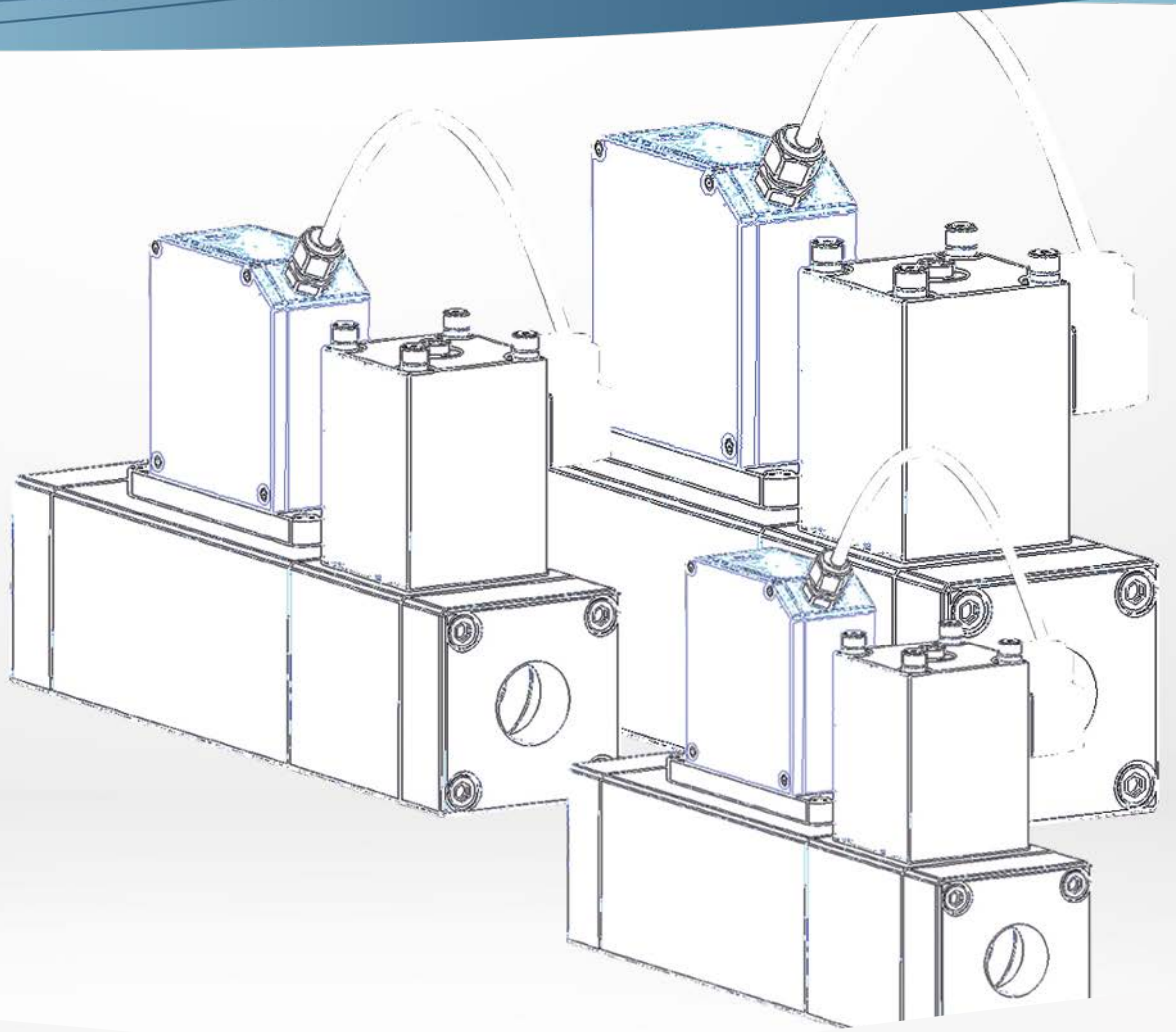
We control GASES

HTK HAMBURG



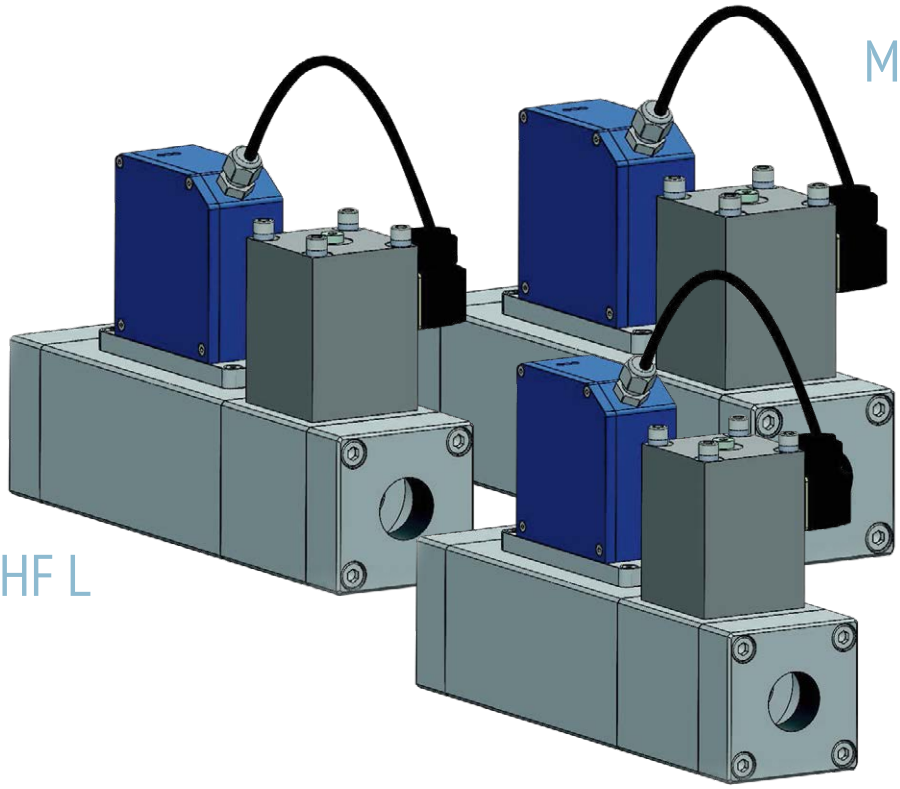
Thermal mass flow controllers for gases

Information and technical data

MFC-HF Series

since 1978

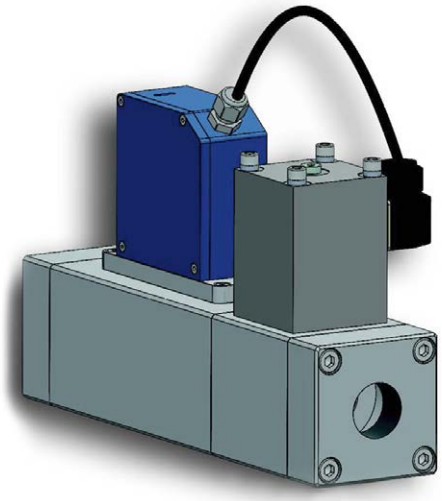
MFC-HF Series



Features

The MFC-HF mass flow controller has been especially developed for use in heavy industry. The unique robustness and operational dependability of the design ensures maintenance-free operation and user-friendly controls with a maximum overload reserve.

This makes it the ideal solution for regulating the flow and pressure of gases in many fields of application.



MFC-HF S

The little one of the big ones

Mass flow controller for flow ranges up to 250 Nl/min.
High accuracy and dynamic range for all applications. Compact and modular design, ideal for use in gas flow control, e.g. in the steel industry. Independent control from inlet pressure, thanks to pressure-compensated proportional control valve, available for pressure ranges up to 16 bar. Easy integration into control systems due to analogue input and output signals.

Technical Data		Economy	Extended	Stainless Steel
Maximum flow	Nl/min^{-1}	200	250	250
Minimum flow	Nl/min^{-1}	0.5	0.5	0.5
Maximum operating pressure	bar	16	16	16
Regualtion ratio		1 : 30	1 : 50	1 : 50
Device Accuracy		1% Full Scale	1% Full Scale	1% Full Scale
Step response time (10% - 90%)	s	1.5 or less	1.5 or less	1.5 or less
Operating temperature	°C	from -10 to +60	from -10 to +60	from -10 to +60

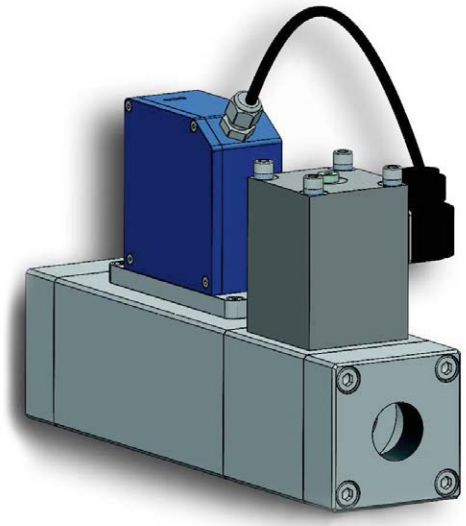
Gases	Economy	Extended	Stainless Steel
Calibration media (see also chapter calibration)	standard: comp. air, *	standard: comp. air, *	standard: comp. air, *
Process media (gas)	comp. air, N2, Ar, CO2	comp. air, N2, Ar, CO2,H2, CH4, O2 ,**	comp. air, N2, Ar, CO2,H2, CH4, O2 ,**

* In individual cases, if desired by the customer, the calibration can be done directly with the specific gas that you intend to use.

** In other cases a compatibility check is required.

Materials	Economy	Extended	Stainless Steel
Housing	Aluminium and Brass	Aluminium and Brass	Steel X2CrNi18-9, 1.4307 and Steel X2CrNiMo17-12-2, 1.4404
Valveparts	Brass	Brass	Steel X2CrNi18-9, 14307
Inlet / Outlet Port	FBSPP 1/2“	FBSPP 1/2“	FBSPP 1/2“, 3/8“, 1/4“
Sealing	NBR, FPM	NBR, FPM	NBR, FPM, other
Protection class	IP54	IP65	IP65

MFC-HF Series



MFC-HF L

For up to 1200 Nl/min.

Mass flow controller for flow ranges up to 1,200 l/min.
High accuracy and dynamic range for all applications. Compact and modular design, ideal for use in gas flow control, e.g. in the steel industry. Independent control from inlet pressure, thanks to pressure-compensated proportional control valve, available for pressure ranges up to 16 bar. Easy integration into control systems due to analogue input and output signals.

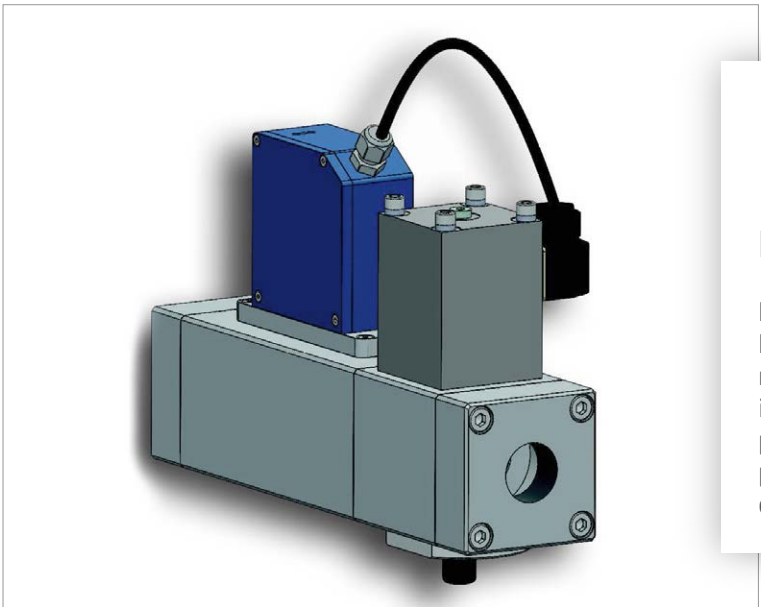
Technical Data		Economy	Extended	Stainless Steel
Maximum flow	Nl/min^{-1}	1200	1200	1200
Minimum flow	Nl/min^{-1}	0.5	0.5	0.5
Maximum operating pressure	bar	16	16	16
Regualtion ratio		1 : 50	1 : 50/100	1 : 50/100
Device Accuracy		1% Full Scale	1% Full Scale	1% Full Scale
Step response time (10% - 90%)	s	1.5 or less	1.5 or less	1.5 or less
Operating temperature	°C	from -10 to +60	from -10 to +60	from -10 to +60

Gases	Economy	Extended	Stainless Steel
Calibration media (see also chapter calibration)	standard: comp. air, *	standard: comp. air, *	standard: comp. air, *
Process media (gas)	comp. air, N2, Ar, CO2	comp. air, N2, Ar, CO2,H2, CH4, O2 ,**	comp. air, N2, Ar, CO2,H2, CH4, O2 ,**

* In individual cases, if desired by the customer, the calibration can be done directly with the specific gas that you intend to use.

** In other cases a compatibility check is required.

Materials	Economy	Extended	Stainless Steel
Housing	Aluminium and Brass	Aluminium and Brass	Steel
Valveparts	Brass	Brass	Steel
Inlet / Outlet Port	FBSPP 1/2“	FBSPP 1/2“	FBSPP 1/2“, 3/8“, 1/4“
Sealing	NBR, FPM	NBR, FPM	NBR, FPM, other
Protection class	IP54	IP65	IP65



MFC-HF XL

For up to 5000 Nl/min.

Mass flow controller for flow ranges up to 5,000 Nl/min.
High accuracy and dynamic range for all applications. Compact and modular design, ideal for use in gas flow control, e.g. in the steel industry. Independent control from inlet pressure, thanks to pressure-compensated proportional control valve, available for pressure ranges up to 16 bar. Easy integration into control systems due to analogue input and output signals.

Technical Data		MFC-HF XL
Maximum flow	Nl/min^{-1}	5000
Minimum flow	Nl/min^{-1}	30
Maximum operating pressure	bar	16
Regualtion ratio		1 : 50
Device Accuracy		1% Full Scale
Step response time (10% - 90%)	s	7 or less
Operating temperature	°C	from -10 to +60

Gases	Economy
Calibration media (see also chapter calibration)	standard: comp. air, *
Process media (gas)	comp. air, N2, Ar, CO2

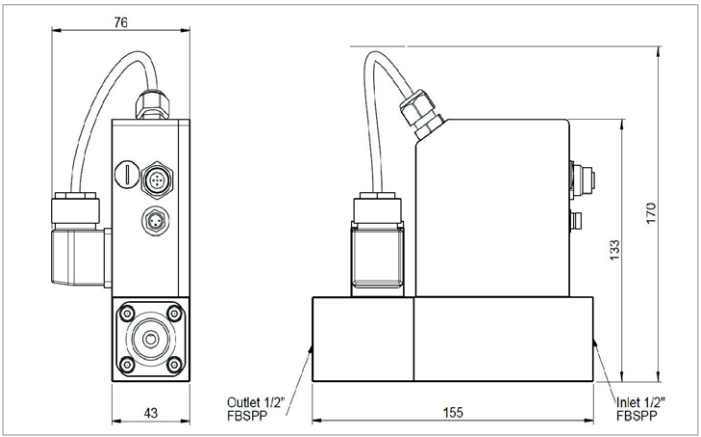
* In individual cases, if desired by the customer, the calibration can be done directly with the specific gas that you intend to use.

** In other cases a compatibility check is required.

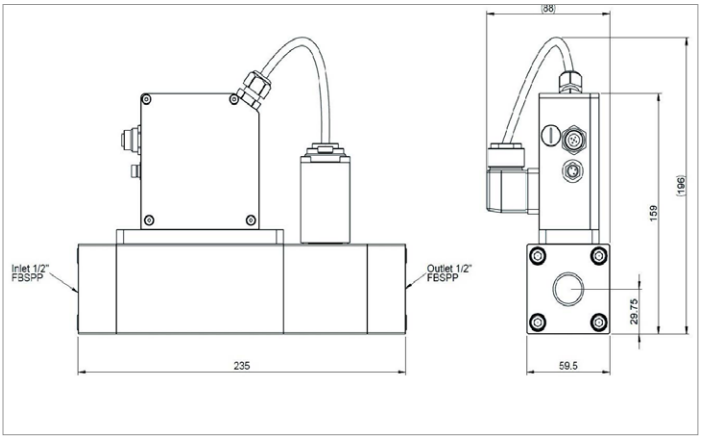
Materials	Economy
Housing	Aluminium and Brass
Valveparts	Brass
Inlet / Outlet Port	Thread 1“ BSP
Sealing	NBR, FPM
Protection class	IP54

MFC-HF Series

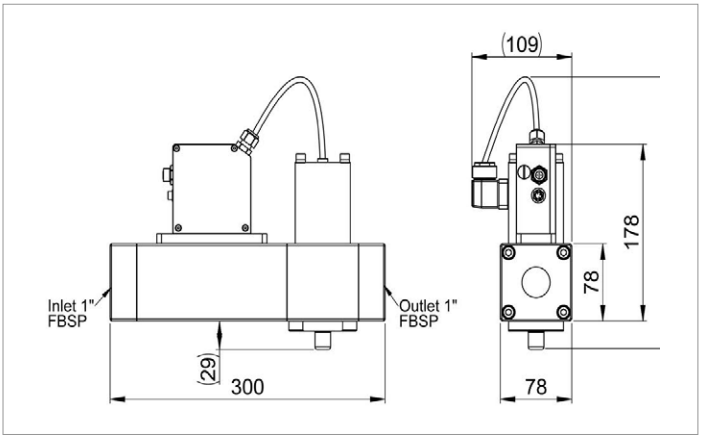
Dimensions



MFC-HF S



MFC-HF L



MFC-HF XL

Options

Three standard modifications of the MFC-HF S and the MFC-HF L are available:

The economy version is useful for standard applications with gases like compressed air, nitrogene or argon.

The extended version is ready to handle gases like hydrogen, methane and oxygen.

The stainless steel version, free of brass components, can be safely used in food industry applications.

LED and operating Modus

	Power
LED 2	In operation/running
LED 3	Error

Connection assignment

M8 power supply

Pin 1	24 VDC
Pin 3	0 V
Pin 4	PE, Ground
20 to 28 VDC at max. 300 mA	

USB Port

The USB Port connects the MFC-HF to a PC.

M12 Analog connector

Pin 1	Set Value	4-20 mA > AOP
Pin 2	Set Value	0 V
Pin 3	Real value	4-20 mA > AIP
Pin 4	Real value	oV
Pln 5	Dig. Input	24 VDC, Bypass Function

USB port and data exchange

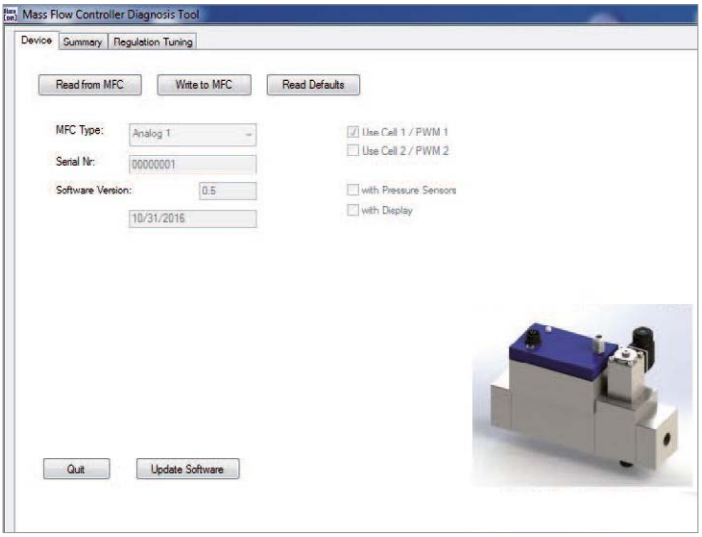
You may obtain the software by requesting it (htk@htk-hamburg.com). It requires Windows. The software enables operation of the MFC-HF without any other process control.
The software allows you to:

- To get full information about the device,
- To see and to manipulate the calibration data,
- To observe the actual operation and to overwrite the set point.

Allthough the measuring cell does not require recalibration for the rest of its lifetime it might be possible in very special processes to manipulate the calibration (This is done by changing three calibration points that are marked in green in the „Calibration“ picture).

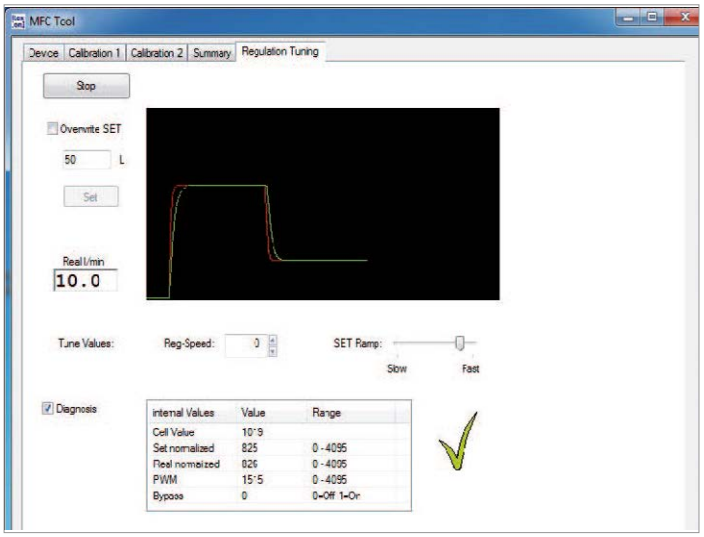
Before using this menu, it is recommended to discuss it with HTK Hamburg GmbH.

Device



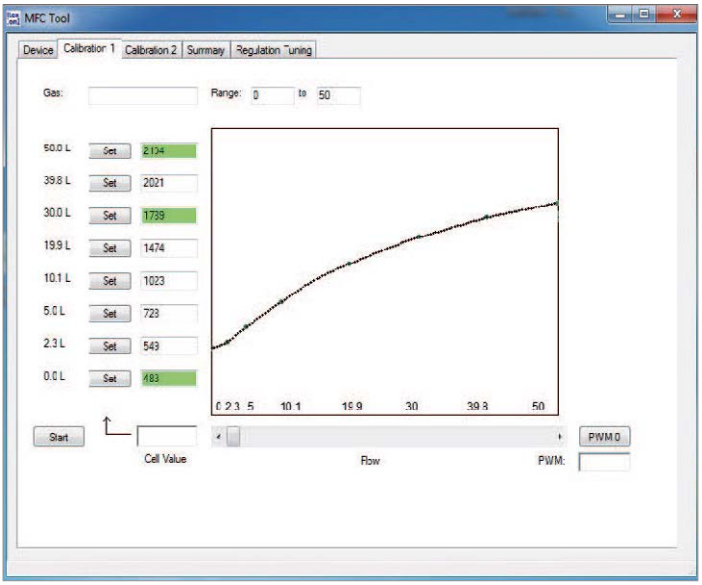
The menue tab shows all relevant information about the MFC-HF that is in use.

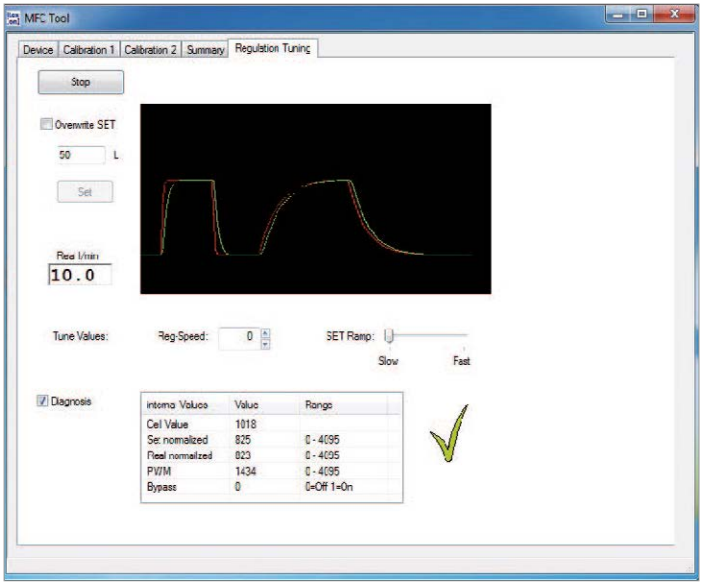
Regulation tuning



The green line shows the set point, the red line the running point in real time. It is possible to overwrite the set point at any time. In this case it had been done whilst changing from 50 to 10 lmin-1 (e.g.). SET Ramp. can be positioned to fast. or slow.

Calibration





HTK®
HAMBURG

Oehleckerring 32 • 22419 Hamburg
Phone: +49 (0)40 - 600 38 38 - 0
Fax: +49 (0)40 - 600 38 38 - 99
info@htk-hamburg.com

HTK Office Berlin
Phone: +49 (0)30 - 47 08 99 - 65
berlin@htk-hamburg.com

HTK Office Frankfurt
Phone: +49 (0)69 - 80 10 40 - 23
frankfurt@htk-hamburg.com

HTK Office USA
Phone: +1 - 803 - 270 - 8010

HTK Office Dusseldorf
Phone: +49 (0)211 - 69 16 84 - 86
duesseldorf@htk-hamburg.com

HTK Office Munich
Phone: +49 (0)89 - 94 30 12 - 73
muenchen@htk-hamburg.com

HTK Office Brasil
Phone: +55 - 21 - 99 55 75 - 166