Auxiliary field strengths below Hx<1.5 kA/m are not recommended, as small disturbances may flip the magnetization domains. Sometimes, the magnetic conditions in the application may provide enough Hx bias field stabilization. MEAS Germany can provide advice for customer specific magnet arrangements.

If a bias field Hx is not applied or Hx is less than 2.5 kA/m, the sensor may be used only in a limited field range Hy, depending on the present total bias field Hx,tot. In this case, it is strongly recommended to 'premagnetize' the sensor, i.e. align all magnetic domains consistently, prior to the measurement.

Hx,tot is the sum of all acting magnetic fields in x direction at the sensor die.

Do not use the sensor outside the safe operating area. Leaving the save operating area can destroy an existing premagnetization and therefore will lead to unreproducible sensor signals.

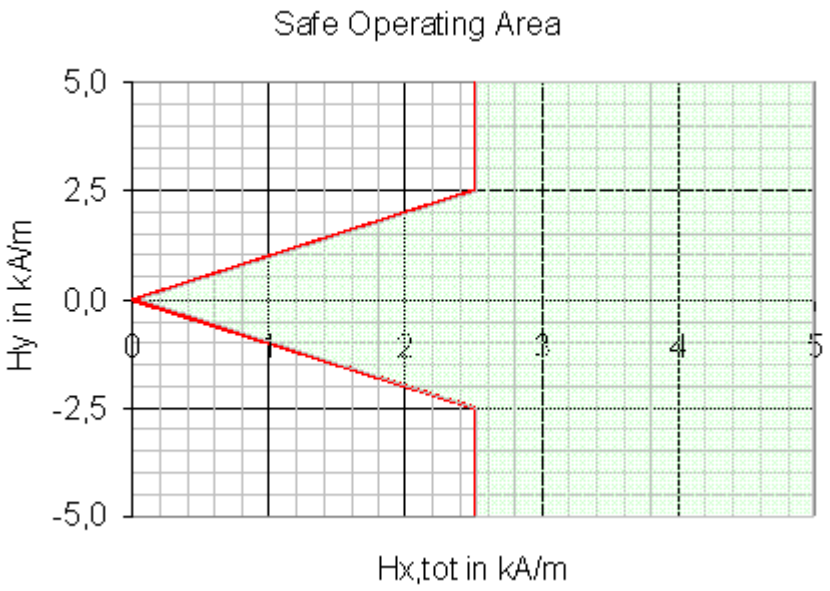

Figure 2: *Safe operating area*

CHARACTERISTIC VALUES / SENSOR SPECIFICATIONS

Parameter	Symbol	Condition	Min	Typ	Max	Unit
Operating Limits						
max. supply voltage	$V_{cc,max}$				**10**	V
max. current	$I_{cc,max}$				**9**	mA
operating temperature	T_{op}		**-40**		**+150**	°C
storage temperature	T_{st}		**-40**		**+150**	°C
General Sensor Specifications						
TC of amplitude	TCSV	Condition A, C		**-0.35**		%/K
TC of resistance	TCBR	Condition A, C		**+0.35**		%/K
TC of offset	TCVoff	Condition A, C	**-4**	**0**	**+4**	µV/V/K
Sensor Specifications KMY 20 S, KMZ 20 S, KMY 22 (T=25 °C, Hx=3 kA/m externally)						
Supply voltage	V_{cc}	Condition A, B		**5**		V
Bridge resistance	R_b	Condition A, B	**1200**	**1700**	**2200**	Ω
Output signal range	$\Delta V_0/V_{cc}$	Condition A, B	**16**	**20**	**24**	mV/V
Offset voltage	V_{off}/V_{cc}	Condition A, B	**-1**	**0**	**+1**	mV/V
Sensitivity	S	Condition A, B	**3.7**	**4.7**	**5.7**	mV/V/kA/m

Hysteresis	V_H/V_{cc}	Condition A, B	-	-	**50**	µV/V
Sensor Specifications KMY 20 M, KMZ 20 M (T=25 °C, Hx=1.5±0.5 kA/m internally)						
Supply voltage	V_{cc}	Condition A, B		**5**		V
Bridge resistance	R_b	Condition A, B	**1200**	**1700**	**2200**	Ω
Output signal range	$\Delta V_0/V_{cc}$	Condition A, B	**16**	**20**	**24**	mV/V
Offset voltage	V_{off}/V_{cc}	Condition A, B	**-1.5**	**0**	**+1.5**	mV/V
Sensitivity	S	Condition A, B	**4**	**5.5**	**7**	mV/V/kA/m
Hysteresis	V_H/V_{cc}	Condition A, B	-	-	**50**	µV/V
Sensor Specifications KMY 21 M (T=25 °C, Hx=2.5±1.0 kA/m internally)						
Supply voltage	V_{cc}	Condition A, B		**5**		V
Bridge resistance	R_b	Condition A, B	**1100**	**1500**	**1900**	Ω
Output signal range	$\Delta V_0/V_{cc}$	Condition A, B	**8**	**9.5**	**12**	mV/V
Offset voltage	V_{off}/V_{cc}	Condition A, B	**48**	**50**	**52**	%Vcc
Sensitivity	S	Condition A, B	**2.05**	**2.50**	**3.10**	mV/V/kA/m
Hysteresis	V_H/V_{cc}	Condition A, B	-	-	**50**	µV/V

Stress above one or more of the limiting values may cause permanent damage to the device. Exposure to limiting values for extended periods may affect device reliability.

MEASUREMENT CONDITIONS

Parameter	**Symbol**	**Unit**	**Condition**
Condition A: Set Up Conditions			
Ambient temperature	T	°C	23±5 Measurement results are extrapolated to 25°C by using the given temperature coefficients
Supply voltage	V_{cc}	V	5
Output voltage	V_O V_O/V_{cc}	mV mV/V	$V_O=(V_{0+}-V_{0-})$ Output voltages are also given independently on supply voltage: example: $Vo/Vcc=(V_{0+}-V_{0-})/Vcc$; measure MR half bridge against reference half bridge
Reference half bridge			2* 2 kΩ 0.1% (KMY21M only)
for full bridge sensors (KMY20S, KMY20M, KMY22, KMZ20S, KMZ20M)			for half bridge sensors (KMY 21 M)