

Template:FMB640 Electrical characteristics

Electrical characteristics

Characteristic description	Value		
	Min.	Typ.	Max.
			Unit
Supply Voltage:			
Supply Voltage (Recommended Operating Conditions)	+10	+30	V
Digital Output (Open Drain grade):			
Drain current (Digital Output OFF)		120	µA
Drain current (Digital Output ON, Recommended Operating Conditions)		0.5	A
Static Drain-Source resistance (Digital Output ON)	400	300	mΩ
Digital Input:			
Input resistance (DIN1)	15		kΩ
Input resistance (DIN2)	15		kΩ
Input resistance (DIN3)	15		kΩ
Input voltage (Recommended Operating Conditions)	0	Supply voltag e	V
Input Voltage threshold (DIN1)		7.5	V
Input Voltage threshold (DIN2, DIN3, DIN4)		2.5	V
Analog Input:			
Input voltage (Recommended Operating Conditions), Range 1	0	+10	V
Input resistance, Range 1	120		kΩ
Input voltage (Recommended Operating Conditions), Range 2	0	+30	V
Input resistance, Range 2	147		kΩ
Output Supply Voltage 1-Wire:			
Supply voltage	+4.5	+4.7	V
Output inner resistance	7		Ω
Output current ($U_{out} > 3.0$ V)	30		mA
Short circuit current ($U_{out} = 0$)	75		mA
CAN Interface:			
Internal terminal resistors CAN bus	120		Ω
Differential input resistance	19	30	52
Recessive output voltage	2	2.5	3
			V

Differential input resistance	0.5	0.7	0.9	V
Common mode input voltage	-30		30	V
Power supply current (Hardware version with internal battery):				
Deep Sleep, average, Icc.ds	2.5	4		mA
Sleep, average, Icc.ds, Vcc=10V	45			mA
Sleep, average, Icc.ds, Vcc=30V	25			mA
Ucc=12.6V, all modules fully working, internal battery is charging, Icc1		350		mA
Ucc=12.6V, all modules fully working, internal battery is charging, Icc2		300		mA
Ucc=25.2V, all modules fully working, internal battery is charging, Icc3		195		mA
Ucc=25.2V, all modules fully working, internal battery is charging, Icc4		140		mA
RS232/RS485 Input Voltage:				
RS485 input voltage range on A or B pin (common-mode voltage)	-7		+12	V
RS232 input voltage range (common-mode voltage)	-15		+15	V

Analog Input error margin can increase if temperature varies.

Absolute maximum ratings

Characteristic description	Value			
	Min.	Typ.	Max.	
Supply Voltage (Absolute Maximum Ratings)	-32		+32	V
Drain-Source clamp threshold voltage (Absolute Maximum Ratings), ($I_{drain} = 2$ mA)			+36	V
Digital Input Voltage (Absolute Maximum Ratings)	-32		+32	V
Analog Input Voltage (Absolute Maximum Ratings)	-32		+32	V
RS232 Input Voltage (Absolute Maximum Ratings)	-25		+25	V