Template:FMC640 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 voltage	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	+3.3		+3.9	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	kΩ
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 not 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 not charging, Icc4			140	mA
RS232/RS485 Input Voltage:				
RS232 input voltage range (common-mode voltage)	-15		+15	V
RS485 input voltage range on A or B pin (common-mode voltage)	-7		+12	V

Analog Input error margin can increase if temperature varies.

Absolute maximum ratings

Characteristic description	Value			
	Min.	**Typ.**	**Max.**	**Unit**
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