

Template:FMC640 Electrical characteristics

Electrical characteristics

Characteristic description	Value		
	Min.	Typ.	Max.
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	k Ω
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.
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