

Analog IP Cell/Block

Modular 4-20mA V/I Converter OUTPUT Stage – XH018/XH035

General Description

This block is a linear voltage to current output driver cell for sensor applications.

Ratings, Parameters and Conditions

Absolute Maximum Ratings						
Parameter / Condition	Symbol	Min	Typ	Max	Unit	Comment
Operating Temperature	T_{OP}	-40		120	°C	
Supply Voltage	V_{DD}	-0.3		35	V	
Input Voltage	V_{IN}	-0.3		$V_{DD}+0.7$	V	
Output Voltage	V_{OUT}	-0.3		$V_{DD}+0.7$	V	

Electrical Parameters							
Parameter / Condition	Symbol	Min	Typ	Max	Unit	Comment	
Operating Temperature	T_{OP}	-40		85	°C		
Loop Supply	V_{DD}	10		32	V		
Input Voltage	V_{IN}	1		5	V		
Current Output Range	I_{OUT}	4		20	mA		
Load Resistance Range	R_L	0		350	Ohm	$V_{SP} = + 12V$	
		0		500		$V_{SP} = + 15V$	
		0		950		$V_{SP} = + 24V$	
Reference Resistor	R_{REF}		24		kOhm		
Reference Resistor Tolerance	$d R_{REF}$			0.1	%		
Resistor Temperature Coefficient	TKR			$25 \cdot 10^{-6}$	K^{-1}		
Total Output Error				± 50	mV	25°C	
Temperature Drift			$\pm 0.01\%$		/°C		
Settling Time for 5V step	t_{SET}		25		μs		
Slew Rate			2.5		mA/ μs		

Interface and Symbol

IO-Description			
Interface	I/O	Function	Comment
Loop Supply	Power	supply voltage	
V_{IN}	Input	Input voltage	
RREF	InOut	Reference resistor	
I_{Out}	Output	Current output	
GND	Power	Ground supply	

