

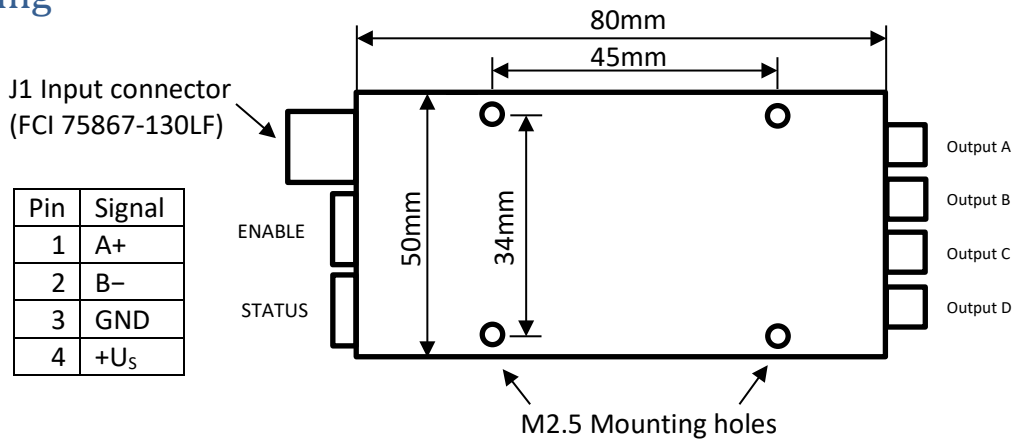
Datasheet Mu3e-HV P +120V, Rev. B

Description

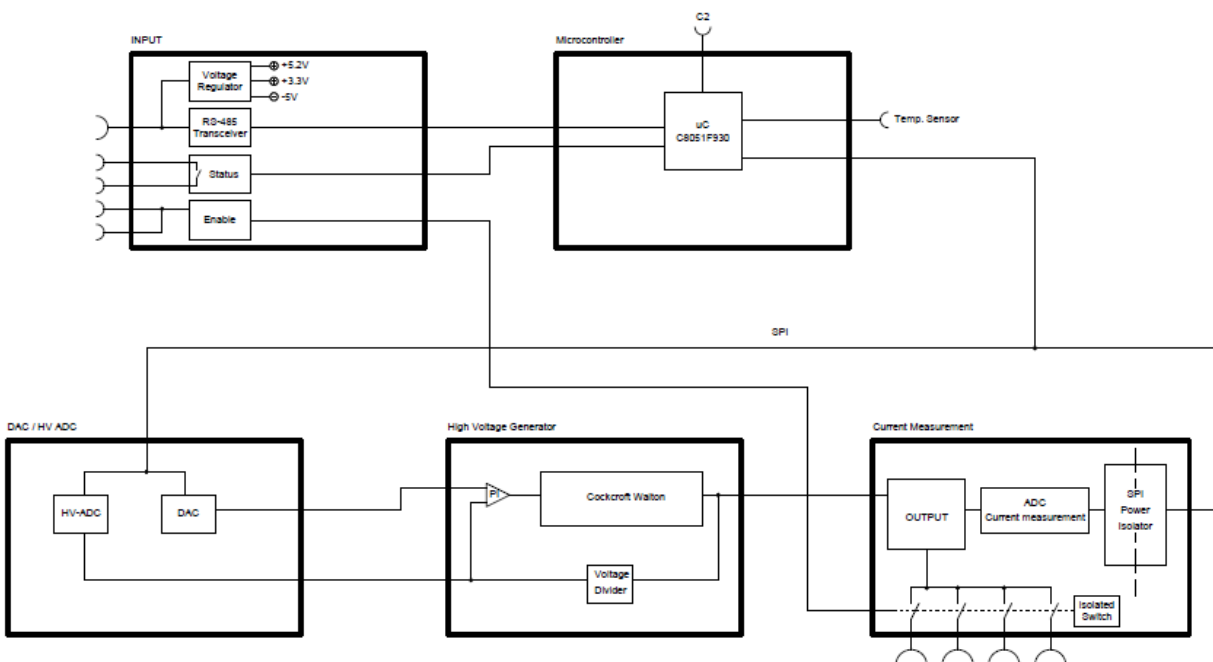
The Mu3e-HV board is a low noise, high voltage converter for voltages up to +120V. It has four outputs, which can be switched individually. Power and data is supplied with a single connector of the type "71600-104LF" from FCI. The RS485 interface enables the user to set the global voltage level, control the outputs and measure the individual currents.

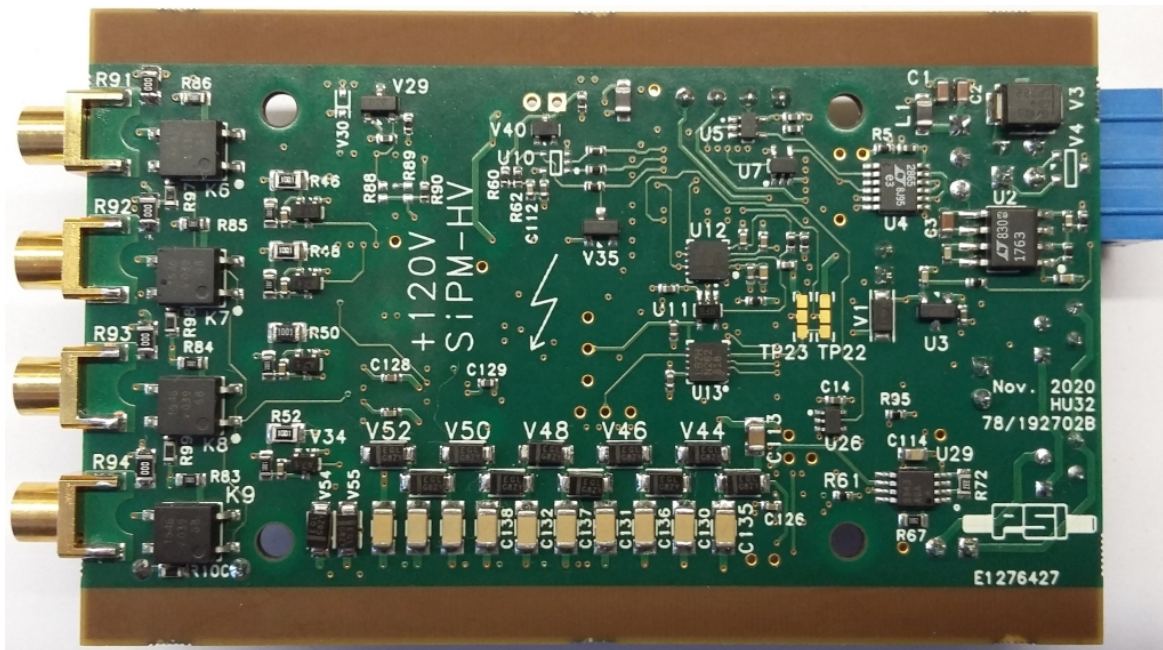
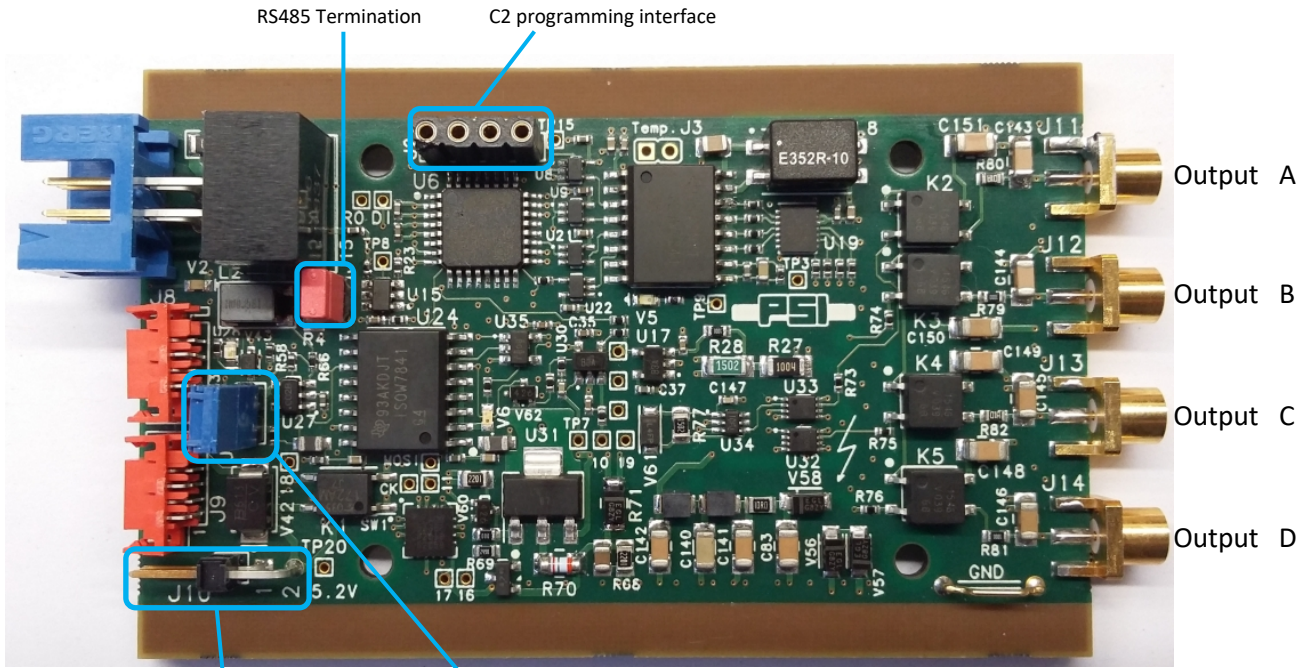
The converter uses a Cockcroft-Walton multiplier, making the design resistant to magnetic fields.

Drawing

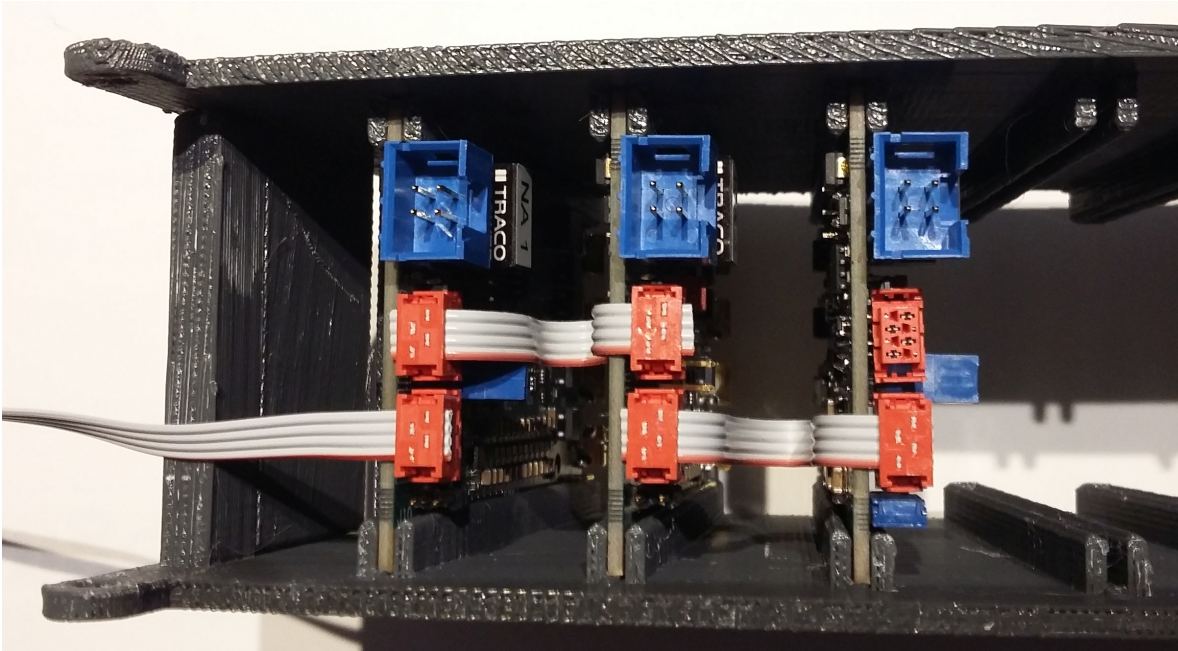


Block diagram

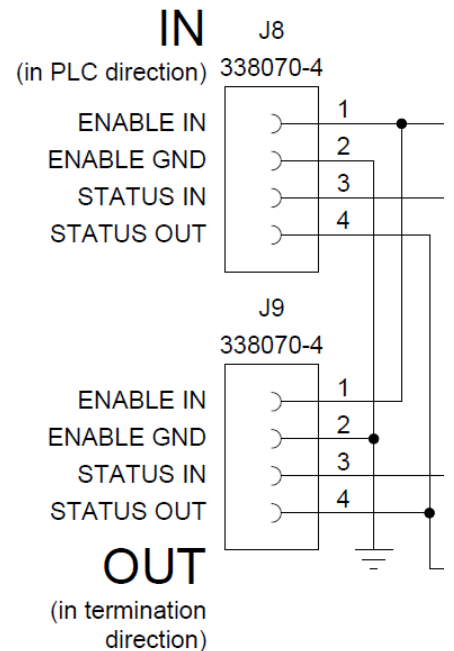
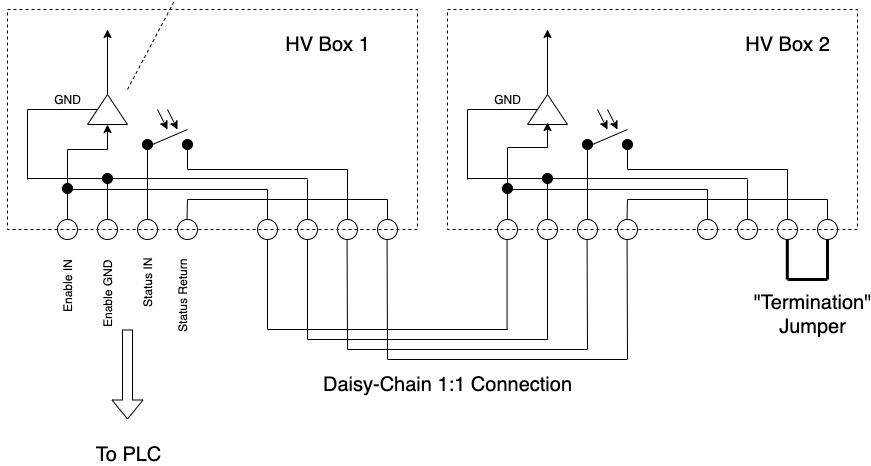




Bottom



MuPix-HV-Crate



ENABLE and STATUS connection

ENABLE Input: $R_i = 75k\Omega$,
 0V ... 0.8V; disable HV
 2V ... 30V; enable HV

Electrical specifications

PARAMETER	SYMBOL	CONDITION	MIN	TYP	MAX	UNIT	
SUPPLY VOLTAGE	U_S		9	24	32	V	
SUPPLY CURRENT	I_S	$U_{HV} = 0V, I_L = 0mA, U_S = 20V$		76		mA	
		$U_{HV} = 0V, I_L = 0mA, U_S = 24V$		69		mA	
		$U_{HV} = +100V, I_L = 0mA, U_S = 20V$			86		mA
		$U_{HV} = +100V, I_L = 0mA, U_S = 24V$			78		mA
		$U_{HV} = +100V, I_L = 10mA, U_S = 20V$			205		mA
		$U_{HV} = +100V, I_L = 10mA, U_S = 24V$			198		mA
		$U_{HV} = +150V, I_L = 0mA, U_S = 20V$			92		mA
		$U_{HV} = +150V, I_L = 0mA, U_S = 24V$			84		mA
		$U_{HV} = +150V, I_L = 6mA, U_S = 20V$			164		mA
		$U_{HV} = +150V, I_L = 6mA, U_S = 24V$			156		mA
OUTPUT VOLTAGE	U_{HV}		0		+150	V	
OUTPUT CURRENT	I_L	Per channel			1.250	mA	
		Total			5.0	mA	
OUTPUT RIPPLE	U_R	$U_{HV} = +150V, I_L = 0mA$		0.277		mV_{rms}	
					2.42		mV_{pp}
		$U_{HV} = +150V, I_L = 6mA$		0.306		mV_{rms}	
					2.54		mV_{pp}
OUTPUT RESISTANCE	R_O			1.1		$k\Omega$	
OUTPUT POWER	P_O				1	W	

Output current vs. output voltage

