

APPLICATIONS

- > Actuators position control
- > Active control of vibrations
- > Embedded solutions

KEY FEATURES

- > All-in-one piezo-driver and controller
- > 2 channels, with push-pull capability
- > PID control with stabilizing filters, tunable with GUI
- > Integrated SG conditioner or external sensor option

RELATED PRODUCT

- > Piezo actuators
- > Piezo mechanisms



SPECIFICATIONS

PARAMETER	TYPICAL VALUE	UNIT
> General		
Function	All-in-one piezo-driver and controller	
Number of control channels	2	
Integrated sensor conditioning	Strain Gages	
Digital communication	RS422	
Graphical User Interface	CTEC HDPM	
> Digital control		
Control strategy	Tunable PID + Stabilizing filters	
Stabilising filters	Tunable lowpass and notch	
List of stabilising filters configurations	No filter 2nd order lowpass filter 2nd order notch filter 2 × 2nd order notch filters 4th order notch filter	
Sampling rate	50	kSps
Digital resolution	16	bits
> Analog inputs		
Number of analog inputs	2	
Analog inputs Voltage range	-10 ... +10	V
Small signals bandwidth (-3 dB)	29	kHz

> Strain gauges (SG) conditioner

Number of channels	2	
Reference output voltage	5	Vdc
Maximum reference output current	30	mA
Typical bridge impedance	350	Ohm
Output voltage range	-10 ... +10	V
Output impedance	20k	Ohm
Real gain	546.45	V/V
Small signals bandwidth (-3 dB)	>150	kHz

> Piezo driver

Number of channels	2	
Push-pull rail nominal voltage	130	V
Nominal output voltage range	-20 ... +150	V
Peak output current	0.5	A
RMS output current ⁽¹⁾	0.35	Arms
Ideal gain	20	V/V
Small signals bandwidth (-6 dB)	29	kHz

> Protections

Overtemperature		
Overload		
Missing connector		

> Power supply

Recommended supply voltage	+28	Vdc
Supply voltage range	+24 ... +28	Vdc
Supply current ⁽²⁾	0.2 ... 4	Arms
Power consumption	5 ... 100	W

MISCELLANEOUS

PARAMETER	TYPICAL VALUE	UNIT
Mass	0.8	kg
Dimensions	160 × 170 × 36	mm3
Cooling	Heat-sinking surface	
Maximum dissipated power	100	W
Operating temperature range ⁽³⁾	-40 ... +70	°C
Storage temperature range	-40 ... +85	°C
Warm up time	15	min

INTERFACES

> Supervisor connector

Micro D-Sub25
Molex 0834249014
Micro D-Sub15
Molex 0834229014

> Actuator connector

Micro D-Sub15
Molex 0834229014

> Sensor connector

Phoenix Contact: 1714977

> Power connector

INCLUDED ACCESSORIES

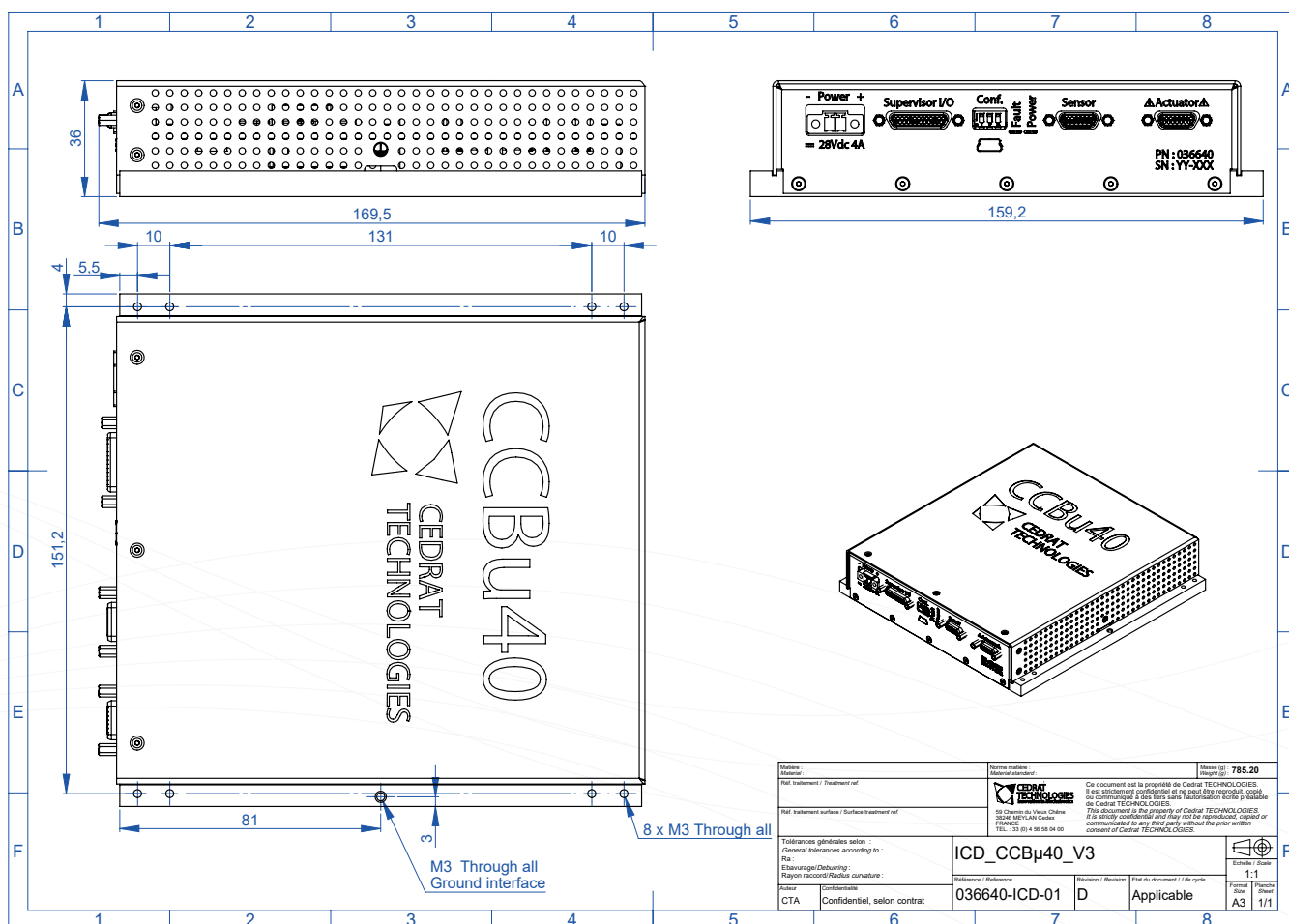
- > **HDPM Graphical User Interface** Windows compatibility

OPTIONS

- > **Input voltage range** -10 ... +10 V

ANNOTATIONS

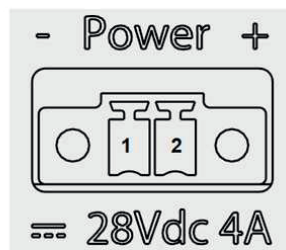
- (1) At +28 Vdc supply and @70 °C. Lower output current has to be considered for lower supply voltages
- (2) At recommended supply voltage
- (3) Additional heatsink might be required



IV CONNECTORS DESCRIPTION

IV.1 POWER CONNECTOR

IV.1.1 CONNECTEUR VIEW



Front view of the receptacle

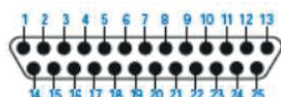
IV.1.2 SIGNAL DESCRIPTION

Pin	Signal name	Signal description	Signal type	Direction	CURRENT	VOLTAGE RANGE		Comment
					Max (A)	Min (V)	Max (V)	
1	0V	Power supply ground	Power	Input				The 0V is not connected to the controller GND
2	+28V	Power supply	Power	Input	4A	24V	28V	Refer to user manual for maximum peak current during start up.

Note: the max current represent the maximum value of the nominal RMS or Average current used to size the cable section.

IV.2 SUPERVISOR CONNECTOR

IV.2.1 CONNECTEUR VIEW



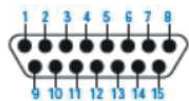
Front view of the receptacle

IV.2.2 SIGNAL DESCRIPTION

Pin	Signal name	Signal description	Signal type	Direction	CURRENT	VOLTAGE RANGE		Comment
					Max (A)	Min (V)	Max (V)	
1	SY	Analog sensor output for Y axis	Analog	Output		-10	10	
2	SX	Analog sensor output for X axis	Analog	Output		-10	10	
3	AIX	Analog order input for X axis	Analog	Input		-10	10	
4	AIY	Analog order input for Y axis	Analog	Input		-10	10	
5	T°C	Mechanism analogue temperature output	Analog	Output		0	3.3	
6	Enable	Digital enable input	Digital	Input		0	3.3	
7	Fault	Digital fault output	Digital	Output		0	3.3	
8, 20	NC							
9	RTS-	Negative Request <u>I</u> o Send	Digital	Output		-7.5	12.5	
10	RTS+	Positive Request <u>I</u> o Send	Digital	Output		-7.5	12.5	
11	RX-	Negative Receive	Digital	Input		-7.5	12.5	
12	RX+	Positive Receive	Digital	Input		-7.5	12.5	
13, 14, 15, 16, 17, 18, 19, 21	GND	Ground	Ground					
22	TX+	Positive Transmit	Digital	Output		-7.5	12.5	
23	TX-	Negative Transmit	Digital	Output		-7.5	12.5	
24	CTS+	Positive Clear <u>I</u> o Send	Digital	Input		-7.5	12.5	
25	CTS-	Negative Clear <u>I</u> o Send	Digital	Input		-7.5	12.5	

IV.3 ACTUATOR CONNECTOR

IV.3.1 CONNECTEUR VIEW



Front view of the receptacle

IV.3.2 SIGNAL DESCRIPTION

Pin	Signal name	Signal description	Signal type	Direction	CURRENT	VOLTAGE RANGE		Comment
					Max (A)	Min (V)	Max (V)	
1, 3, 5, 7, 9, 10, 11, 12, 13, 14	NC	Reserved – Do not connect						
2	+130V	+130V rail for the push-pull configuration	Power	Output	0.5	0	130	
4	VX	X axis voltage output	Power	Output	0.5	-20	150	
6	VY	Y axis voltage output	Power	Output	0.5	-20	150	
8	PLUG	Connection detection	Analog	Input		0	3.3	
15	GND	Ground reference	Ground		1			

Note: the max current represent the maximum value of the nominal RMS or Average current used to size the cable section.