

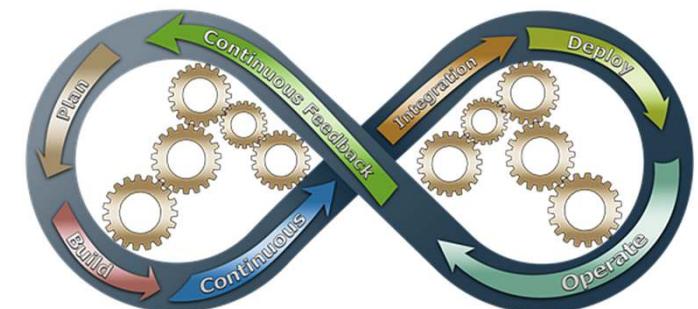
CG Drives and Automation



CG Drive & Automation New Products



- ✓ Upgradation of existing product with future technology
 - ❖ 7 Segment LED display to Graphical LCD display
 - ❖ Compact design
- ✓ Improved performance with high torque 200% for 0.5 sec to 1sec
- ✓ Support Permanent Magnet synchronous Motor
- ✓ Enhanced feature as application demand ...high pulse input/output up to 100kHz,
- ✓ Built in EMI/EMC (C3) & RFI filter EN61800-3
- ✓ Comply the LVD standard 61800-2:2016



Design Transformation

VSU/VSB



VSX/VSM

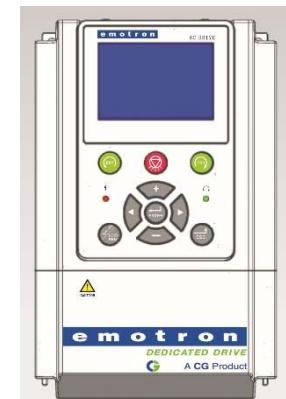


3 Phase/ 380-480 V – VSB - Frame -1&2

3 Phase/ 380-480 V - VSU - Frame -1,2,3 & 4

3 Phase/ 380-480 V – VSM - Frame -1&2

3 Phase/ 380-480 V - VSX - Frame -1,2,3 & 4



Emotron VSU to VSX - Dynamic AC Drive for Low Power Application

VSU



VSX



Range : 0.75kW~18.5kW
Current : 2.5 Amp ~ 30 Amp
Voltage : 3 phase 415Volt ($\pm 20\%$)

Range : 0.75kW~22kW
Current : 2.5 Amp ~ 45 Amp
Voltage : 3 phase 415Volt ($\pm 20\%$)



Emotron VSX - Dynamic AC Drive for Low Power Application

- Optimized and **compact** structural design
- LCD graphical display with **Oscilloscope** feature.
- Strong overload capability with **200%** of rated load for 1 sec.
- Compatible Induction Motor and **Permanent magnet motor**.
- High-speed pulse input and output up to **100 KHz**.
- Heavy duty as standard rated for **50° C**
- Built in **PLC logic** function, **Virtual Digital I/Os** with multi Logic functions, timer , comparator.
- Effective and intelligent brake circuit with short time braking ability of **1.1 to 1.4** times of inverters rated power.
- Built in **EMI/EMC Filter**(Class C3).



CE



Emotron VSM -Compact Machinery Drive

VSB



VSM



Range : 0.75kW~3.7 kW
Current : 2.5 Amp ~ 9 Amp
Voltage : 3 phase 415Volt ($\pm 20\%$)

Range : 0.75kW~3.7kW
Current : 2.5 Amp ~ 9 Amp
Voltage : 3 phase 415Volt ($\pm 20\%$)



Emotron VSM - Dynamic AC Drive for Low Power Application

- Optimized and **compact structural design**, leading technology platform
- LED display as standard
- Strong overload **capability with 200%** of rated load for 1 sec.
- Compatible Induction Motor and **Permanent magnet motor**.
- High-speed** pulse input.
- Heavy duty** as standard rated for 50° C
- Built in PLC logic function, **Virtual Digital I/Os** with multi Logic functions, timer , comparator.
- Effective and intelligent brake circuit with short time braking ability of 1.1 to 1.4 times of inverters rated power.
- Built in **EMI/EMC Filter(Class C3)**.



Emotron VSX /VSM – Technical Specification

	Parameter	VSX	VSM
Standard Specifications	Mains voltage:	3 Phase 415 Volt (±20% continues voltage fluctuation)	3 Phase 415 Volt (±20% continues voltage fluctuation)
	Mains frequency:	50/60 Hz, tolerance ±5%	50/60 Hz, tolerance ±5%
	Mains voltage imbalance:	max. +3.0% of nominal phase to phase input voltage.	max. +3.0% of nominal phase to phase input voltage.
	Input power factor (cos ø) :	0.97	0.97
	Output voltage:	0–Mains supply voltage	0–Mains supply voltage
	Output switching frequency:	0.7 kHz ~ 16 kHz	0.7 kHz ~ 16 kHz
	Efficiency at nominal load:	Rated power≥93%	Rated power≥93%
	Degree of Protection	IP20	IP20
	Overload Capacity	Normal Duty (120%,60s every 10 min) Heavy Duty (150%, 60s every 10 min) High Overload (180% 10sec , 200% 1 sec)	Heavy Duty (150%, 60s every 10 min) High Overload (180% 10sec , 200% 1 sec)
	Operator	LCD detachable (240*160 pixel display resolution)	LED – Built in (detachable optional)
	EMC-filter C3	Built In	Built In



Emotron VSX /VSM – Technical Specification

	Parameter	VSX	VSM
Control Details	Control characteristics		
	Control Method	1:50 (V/f control) 1:100 (sensor-less vector control 1) 1:200 (sensor-less vector control 2)	1:50 (V/f control) 1:100 (sensor-less vector control 1) 1:200 (sensor-less vector control 2)
	V/f patterns	V/f control Sensor-less vector control 1 Sensor-less vector control 2	V/f control Sensor-less vector control 1 Sensor-less vector control 2
	Range of speed control	0 to 600 Hz	0 to 600 Hz
	output frequency Resolution	0.01Hz	0.01Hz
	Speed control accuracy	± 0.5%(V/f Control) ±0.2%(Vector control 1&2)	± 0.5%(V/f Control) ±0.2%(Vector control 1&2)
	Accel /Decl Time	0-6000 S	0-6000 S
	Starting torque	0.5 Hz 180% (V/f, Vector control 1) 0.25 Hz 180% (vector control 2)	0.5 Hz 180% (V/f, Vector control 1) 0.25 Hz 180% (vector control 2)
	Torque response	< 10ms (sensor-less vector control 1、 2)	< 10ms (sensor-less vector control 1、 2)
	Motor types	IM, PMSPM	IM,PMSM
	Built in Braking Chopper	DC brake start frequency: 0.00~600.00Hz DC brake time:0.0s~10.0s DC brake current:0.0%~150.0%	DC brake start frequency: 0.00~600.00Hz DC brake time:0.0s~10.0s DC brake current:0.0%~150.0%



Emotron VSX /VSM – Technical Specification

	Parameter	VSX	VSM
Interface	Control signal inputs:		
	Analogue input (differential)	3 Channels above 2.2kW, 2 channels up to 2.2kW	2 Channels
	Analogue Voltage/current:	0-10 V/0-20 mA via decided by toggle switches	0-10 V/0-20 mA via decided by toggle switches
	Max. input voltage:	10 V/25 mA (Resolution-0.5%)	10 V/25 mA (Resolution-0.5%)
	Input impedance:	250 kΩ (voltage), 250 Ω (current)	250 kΩ (voltage), 250 Ω (current)
	Digital Input :	7 Channels above 2.2kW (NPN or PNP) , 5 Channels up to 2.2kW (NPN or PNP)	5 Channels (NPN or PNP)
	Input voltage:	24VDC	24VDC
	Max. input voltage:	9V~30V VDC, 0 -200 Hz, Impedance:2.4kΩ	'9V~30V VDC, 0 -200 Hz, Impedance:2.4kΩ
	Pulse input	Maximum input frequency: 100 kHz	Maximum input frequency: 100 kHz
	Signal delay:	≤8 ms	≤8 ms
	Control signal outputs		
	Analogue output	2 Channel	1 Channel
	Output voltage/current:	0-10 V/0-20 mA/ 4 to 20 mA (Resolution-0.5%)	0-10 V
	Output impedance:	≥10 kΩ(voltage); 200Ω - 500Ω (current)	≥10 kΩ(voltage); 200Ω - 500Ω (current)
	Maximum load impedance for current	500 Ω	500 Ω
	Hardware accuracy:	1% Fsd	1% Fsd



Emotron VSX /VSM – Technical Specification

	Parameter	VSX	VSM
Interface	Digital output	2 Channels above 2.2kW, 1 Channel up to 2.2kW	1 Channels
	Output voltage:	24 VDC , 50 mA, Pulse output (0-50kHz)	24 VDC , 50 mA
	Short-circuit current:	100 mA max (together with +24 VDC)	100 mA max (together with +24 VDC)
	Relays	2 (NO/NC)	1 (NO/NC)
	Contacts	250 VAC/3A or 30 VDC/3A	250 VAC/3A or 30 VDC/1A
	References		
	+10VDC	10 VDC $\pm 3\%$ @10 mA Short-circuit current +25 mA max	10 VDC $\pm 3\%$ @10 mA Short-circuit current +25 mA max
	+24VDC	+24 VDC Short-circuit current +200 mA max	+24 VDC Short-circuit current +200 mA max
	Programming interface	PC Software	PC Software
Communication Support			
RS232/RS485 Isolated		Built In	Built In
Profibus -dp		Optional	Optional



Emotron VSX /VSM – Technical Specification

	Parameter	VSX	VSM
Environment	Environmental conditions-Operation		
	Cooling method	Forced air cooling	Forced air cooling
	Nominal ambient temperature	-10 °C~50 °C with derating max 60 °C	-10 °C~50 °C with derating max 60 °C
	Relative humidity according to IEC 60721-3-3	0-96%, no condensation	0-96%, no condensation
	Contamination, according to IEC 60721-3-3	No electrically conductive dust allowed. Cooling air must be clean and free from corrosive materials. coated boards .	No electrically conductive dust allowed. Cooling air must be clean and free from corrosive materials. coated boards .
	Vibrations	Less than 5.9m/s ² (0.6g)	Less than 5.9m/s ² (0.6g)
	Altitude	0-2000 m(0-3280 ft). De-rate 1% for every 100m when the altitude is above 1000 meters	0-2000 m(0-3280 ft). De-rate 1% for every 100m when the altitude is above 1000 meters
	Environmental conditions-Storage		
	Temperature	-20 ⁰ C to +70 ⁰ C	-20 ⁰ C to +70 ⁰ C
	Atmospheric pressure	86-106kPa (12.5-15.4PSI)	86-106kPa (12.5-15.4PSI)
	Relative humidity according to IEC 60721-3-1	5~95%, no condensation	5~95%, no condensation
	Operation at higher temperature (above 50 ⁰ C ambient temperature.)	-1% / degree Celsius to max +15 °C (max 60 °C)	-1% / degree Celsius to max +15 °C (max 60 °C)



Emotron VSX /VSM – Selection Guide

Model	Normal Duty (120%, 1min every 10min)			Heavy Duty (150%, 1min every 10min)			High Overload ability		Weight kg	Dimensions [W*H*D] mm,
	P _{nom} [kW]	I _{nom} [A]	I _{max} * [A]	P _{nom} [kW]	I _{nom} [A]	I _{max} * [A]	I _{max} (180%,10s)	I _{max} (200%,1s)		
VSX48-003-20CEB	1.5	4.2	5.0	0.75	2.5	3.8	4.5	5	1.45	80X200X170
VSX48-004-20CEB	2.2	5.5	6.6	1.5	4.2	6.3	7.6	8.4		
VSX48-006-20CEB	3.7	9.5	11.4	2.2	5.5	8.3	9.9	11		
VSX48-009-20CEB	5.5	13	15.6	3.7	9.5	14.3	17.1	19	2.5	116.6X186.6X175
VSX48-013-20CEB	7.5	17	20.4	5.5	13	19.5	23.4	26		
VSX48-017-20CEB	11	25	30	7.5	17	25.5	30.6	34	3.5	146X249X181.7
VSX48-024-20CEB	15	32	38.4	11	25	37.5	45	50		
VSX48-032-20CEB	18.5	37	44.4	15	32	48.0	57.6	64	6.2	198X300X189.7
VSX48-038-20CEB	22	45	54	18.5	37	55.5	66.6	74		
VSX48-045-20CEB	30	57	68.4	22	45	67.5	81	90		

Model	Heavy Duty (150%, 1min every 10min)			High Overload ability		Weight kg	Dimensions [W*H*D] mm,
	P _{nom} [kW]	I _{nom} [A]	I _{max} * [A]	I _{max} (180%,10s)	I _{max} (200%,1s)		
VSM48-003-20CEB	0.75	2.5	3.8	4.5	5	0.85	75X150X117
VSM48-004-20CEB	1.5	4.2	6.3	7.6	8.4		
VSM48-006-20CEB	2.2	5.5	8.3	10	11	1.45	93X171X130
VSM48-009-20CEB	3.7	9.5	14.3	17	19		





The image shows an exhibition booth for emotron VSX | VSM AC Drives. The booth has a blue background with gold decorative borders at the top and bottom. On the left, there is a logo for "emotron DEDICATED DRIVE A CG Product". In the center, a large yellow banner displays the product names "VSX | VSM" and the text "AC Drives for Low Power application". Below this, another text states "Efficient, compatible and reliable with any load". Two circular icons show the physical appearance of the drives: one for the VSX series (three units) and one for the VSM series (two units). In front of the banner, several physical drive units are displayed on a black surface. To the right, there is a photograph of an industrial facility with a yellow dump truck and various processing tanks.





SPM – Special Purpose Machine

Crane Hoist

Crusher

Extruder

Textile

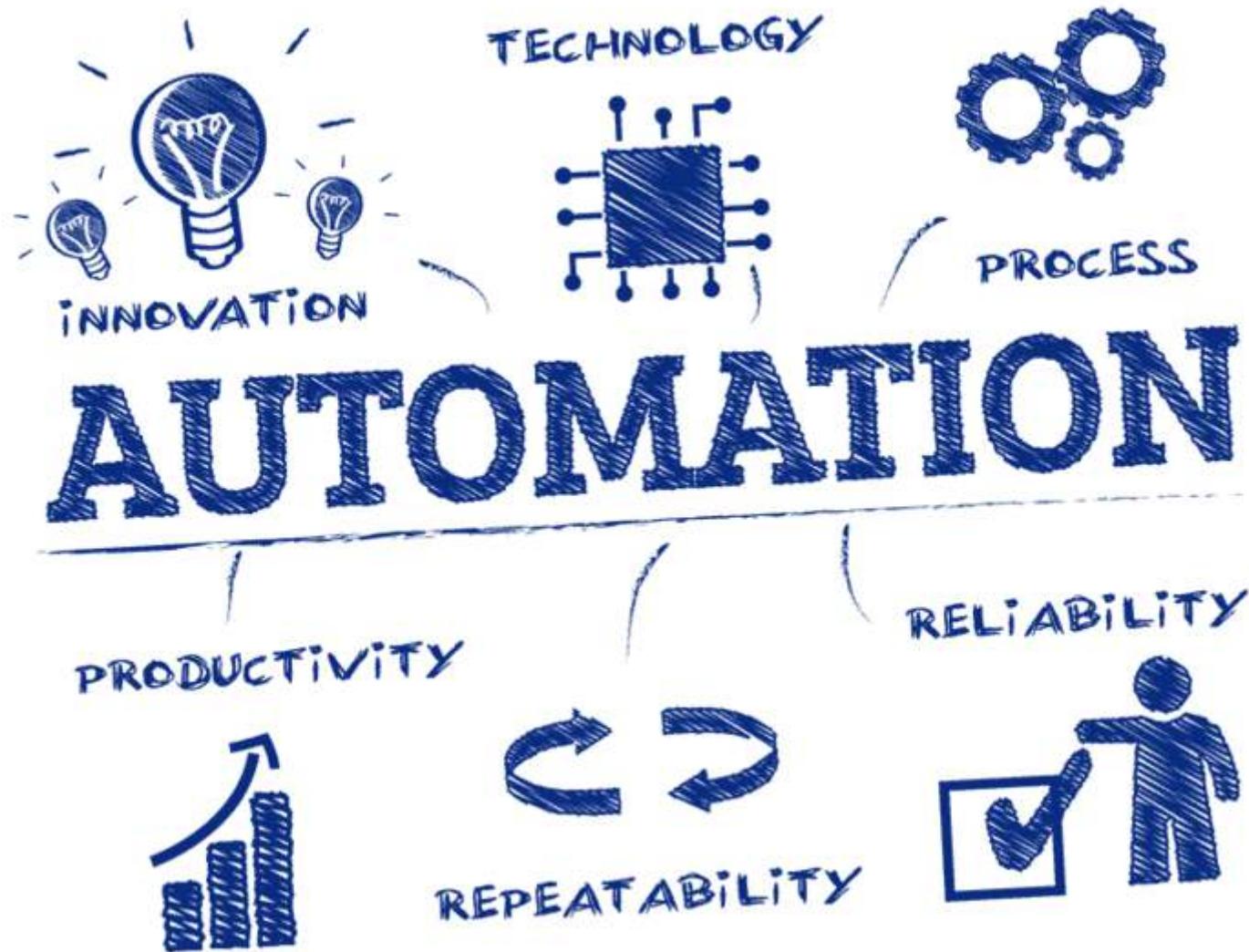
Mixer

Fan/Pump

Wood chipper

Compressor





EmoSmart - 4.3" & 7"



Controlled By

 | 



Excellent performance

- **High speed Processor** for higher computing performance.
- ABS enclosure for Greater vibration resistance and higher tolerance for ambient environments compared with other enclosures.
- High pixels, **high resolution** and **high brightness** display.

EmoSmart : 4.3 "



Peripheral Interfaces:

- Supports **USB Host 2.0 Ports & USB Client 2.0 Ports.**
- Built-in communication Ports: **RS232/422/485.**
- **Built-In Ethernet** Ports in 7"

EmoSmart : 7 "



EmoSmart HMI – Selection Guide & Specification

Model	Display Size	Resolution	Processor	Programming Port	Communication Ports	Power Supply	Dimension [w*H*D] mm
HMI004	4.3 Inch	480*272	32-bit 300MHz RISC	Micro USB	COM1: RS422/485 COM2: RS232	24VDC	142 X 86 X 30.3
HMIWE07	7.0 Inch	800*480	32-bit 300Mhz RISC	USB Client	Com1:RS232/422/485	DC24VDC	201 X146 X 36
HMI007	7.0 Inch	800*480	Cortex A8 600Mhz	USB Client	COM1: RS232/422/485, COM2: RS232/485, Ethernet	24VDC	201 X 146.6 X 36.5



EmoLog – 08X06/12X12



emo
LOG



Key Feature

- Support **Ladder and Instruction List Programming**.
- STM32 high-performance MCU platform**
- Available 14 & 24 I/Os CPUs with Transistor & relay configuration
 - Built in **2 High Speed digital inputs** Max. **200kHz** frequency
 - Built-in **2 high speed outputs** output Max. **100khz** frequency
- Configure up to **256 I/O points**.
- Built-in RS422/RS485** Communication port.
- Program memory up to **128Kb**.
- Built –in **Real Time Clock**.
- Reliable and stable **high speed micro USB** port for programming download/monitor.
- Support optional board up to 2 no's (For AI/AO, Ethernet Port)
Compatible for N: N protocol and RS485 communication port, you can create a network of up to 8 CPU.
- Operating Temperature **55 °C**



emo
LOG



Emotron –EmoLog -Selection Guide & Specification

Model	Type	Total I/Os	DI	DO	Com	High Speed Input (200kHz)	High Speed output (100kHz)	EX Board (optional)	Expandable	System Storage	Programming Port	Power Supply	Dimension [W*H*D] mm
PLC080 6R	Relay	14	8	6	Com1-RS422 Com2-RS485	2	0	1	NO	16K	micro USB	24VDC	75X107 X87
PLC080 6T	Transistor	14	8	6	Com1-RS422 Com2-RS485	2	2	1	NO	16K	micro USB	24VDC	75X107 X87
PLC121 2R	Relay	24	12	12	Com1-RS422/ RS485 Com2-RS485	2	0	1	Yes - Upto 16	64K	micro USB	24VDC	137X107 X87
PLC121 2T	Transistor	24	12	12	Com1-RS422/ RS485 Com2-RS485	2	2	1	Yes - Upto 16	64K	micro USB	24VDC	137X107 X87



Emotron –EmoLog –EX Board

CG Model	Description	Type	PLC0806T/R	PLC01212T/R
EX-2ADI2DAI	2 Channel analog input. (Current 4 to 20mA). 2 Channel analog Output. (Current 4 to 20mA).	Analog Input/ Analog Output	X	✓
EX-2ADI	2 Channel analog input. (Current 4 to 20mA)	Analog Input	✓	✓
EX-2ADV2DAV	2 Channel analog input. (Voltage -10 to 10V). 2 Channel analog Output. (Voltage -10 to 10V).	Analog Input/ Analog Output	X	✓
EX-2ADV	2 Channel analog input. (Voltage -10Vdc to +10Vdc)	Analog Input	✓	✓
EX-2DAI	2 Channel analog Output. (Current 4 to 20mA)	Analog Output	✓	✓
EX-2DAV	4 Channel analog Output. (Voltage -10Vdc to +10Vdc)	Analog Output	✓	✓
EX-2PT2ADV	2 Channel Platinum temperature Input. PT100, 3 Wire & 2 Wire; 2 Channel analog input Voltage (-10Vdc to +10Vdc).	Temperature Input/ Analog Input	X	✓
EX-2PT2DAI	2 Channel Platinum temperature Input. PT100, 3 Wire & 2 Wire; 2 Channel analog output Current 4mA to 20mA.	Temperature Input/ Analog Output	X	✓
EX-2PT2DAV	2 Channel Platinum temperature Input. PT100, 3 Wire & 2 Wire; 2 Channel analog output Voltage -10Vdc to +10Vdc.	Temperature Input/ Analog Output	X	✓
EX-2PT	2 Channel Platinum temperature Input. PT100, 3 Wire & 2 Wire	Temperature Input	✓	✓
EX-2PTS	2 Channel Platinum temperature Input. PT100, 3 Wire & 2 Wire	Temperature Input	✓	✓
EX-2RS485	2 Channel RS485.	Communication	✓	✓
EX-2TC2DAI	2 Channel Thermo Couple Input (J & K type 2 wire) 2 Channel analog output Current (4 to 20mA).	Temperature Input/ Analog Output	X	✓
EX-2TC	2 Channel Thermo Couple Input (J & K type 2 wire).	Temperature Input	✓	✓
EX-4ADI	4 Channel analog input. (Current 4 to 20mA)	Analog Input	X	✓
EX-4ADV	4 Channel analog input. (Voltage -10Vdc to +10Vdc)	Analog Input	X	✓
EX-ETH	Modbus TCP. Support in PLC1212T/T Only. Max 8 devices can be connected in one Ethernet Board.	Communication	X	✓



Emotron –EmoLog –Expansion Module

CG Model	Description	Type	PLC0806T/R	PLC01212T/R
EXP-16EX	16 Channel Digital Input Transistor. DC 24V, PNP/NPN Type.	Digital Input	X	✓
EXP-16EYR	16 Channel Digital Output Relay. Less than 30VDC.	Digital Output	X	✓
EXP-16EYT	16 Channel Digital Output Transistor. DC 5V to 30V. PNP Type. Negative output	Digital Output	X	✓
EXP-1WT	1 Channel 24 bit resolution weight input.	Weight	X	✓
EXP-1WT-L	1 Channel 18 bit resolution weight input. Low price than EX-1WT.	Weight	X	✓
EXP-2WT	2 Channel 24 bit resolution weight input.	Weight	X	✓
EXP-2WT-L	2 Channel 18 bit resolution weight input. Low price than EX-2WT.	Weight	X	✓
EXP-4AD	4 Channel Analog Input. (-10vto+10v) and/or 4mA-20mA, -20mAto+20mA.	Analog Input	X	✓
EXP-4DA	4 Channel Analog Output (-10v to +10v) and/or 20mA to +20mA.	Analog Output	X	✓
EXP-4LTC	It's a temperature control module having 4 channel Thermo Couple Input gives 4 Channel transistor output (OC) with PID control.	Temperature Control	X	✓
EXP-4PGA	Enhanced 4 Channel Pulse Output. Maximum 200Khz	Pulse Output	X	✓
EXP-4PGB	Basic 4 Channel Pulse Output. Maximum 200Khz	Pulse Output	X	✓
EXP-4PT	4 Channel Platinum temperature Input. Type PT100 3 wire (100 Ohm).	Temperature Input	X	✓
EXP-4TC	4 Channel Thermo Couple Input. Type J & K.	Temperature Input	X	✓
EXP-8EX	8 Channel Digital Input Transistor. DC 24V, PNP/NPN Type.	Digital Input	X	✓
EXP-8EYR	8 Channel Digital Output Relay. Less than 30VDC.	Digital Output	X	✓
EXP-8EYT	8 Channel Digital Output Transistor. DC 5Vto30V. PNP Type. Negative output	Digital Output	X	✓
EXP-8iTC	8 Channel Thermo Couple Input. Type K, S, E, N, B, T, J and R.	Temperature Input	X	✓



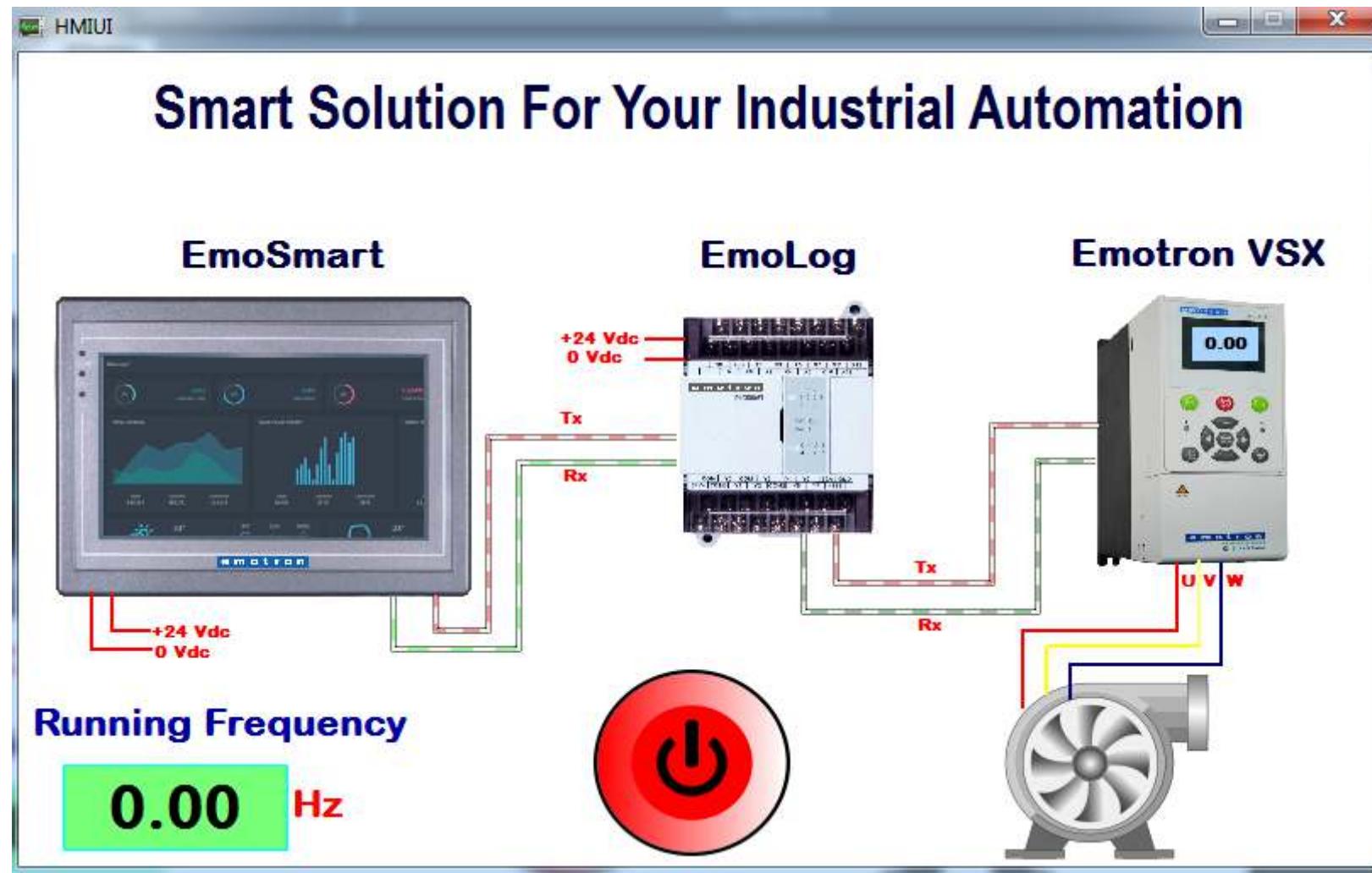
PC Tool –EmoWizard Com

emotron
DEDICATED DRIVE
A CG Product



- Easy commissioning and troubleshooting of VSX / VSM
- Viewing and exchanging data with the drive & PC
- Statistics data can be plot with help of Oscilloscope
- Ease of use parameter viewing and editing.







Committed to quality and reliable services, we follow “One world One Quality Program”

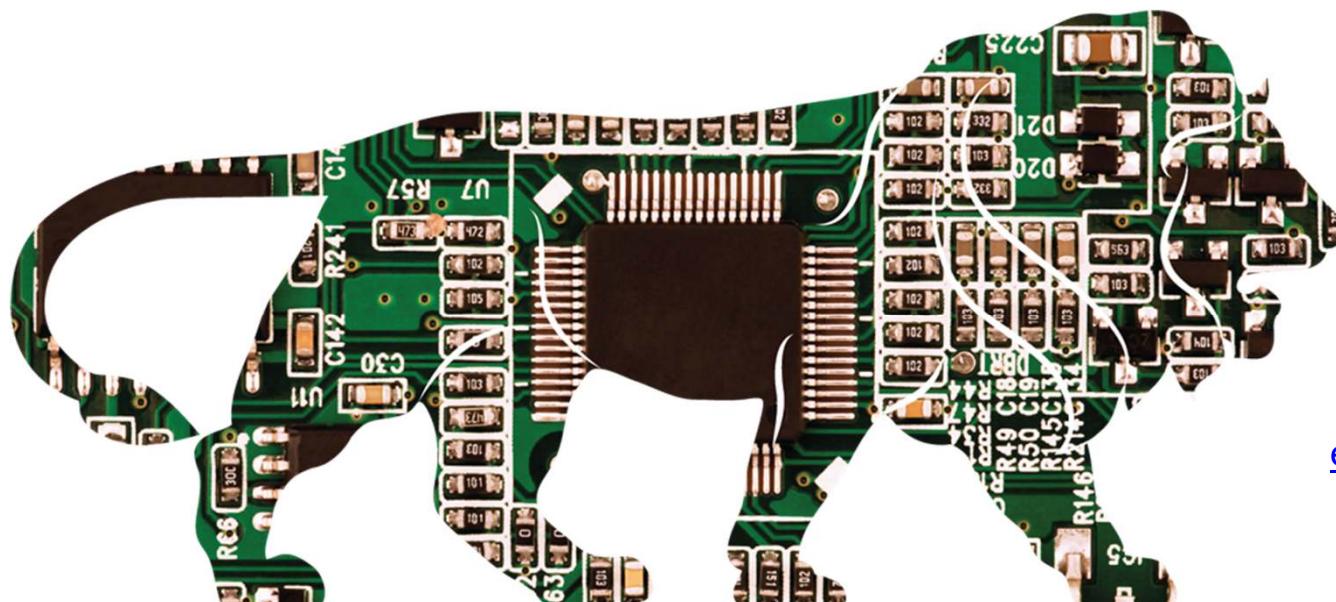
Suppliers cater to both Swedish as well as Indian plant

Strong supply chain base of UL compliant vendors

“European Design, Swedian product, Made in India and Sweden, Made for the world”



We put all our energy into saving yours



Thank you!

emotron.com

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