

TECHNION



TEC152

All in One

*Developed and
Manufactured
in Finland*



A versatile partner for any machine

Everything comes together in **TEC152**. It is a high-performance controller with a comprehensive I/O set of 73 ports. For this product, we implemented full support for 12V systems and both voltage and current controlled valves. The design of the controller allows customers to add a customized I/O board inside the IP67 enclosure. This sets **TEC152** apart from other controllers on the market and provides our customers with maximum versatility.

Outstanding control features

Have you ever felt that your machine could be more productive and user-friendly if you had more calculation power in your control system? Are the response times of critical functions slower than they could be because the CPU is occupied with simple routine tasks? **TEC152** is the answer to your problems. With it, you will be able to utilize DSP libraries and floating point variables without sacrificing response times and with the multi-tasking features of CODESYS V3 you will be able to manage your application in different time layers and control the priority of tasks. The processing capacity of the controller is outstanding and time-critical functions have been allocated their own separate block in the hardware layer. Control functions cannot get any better!

True 12V/24V design

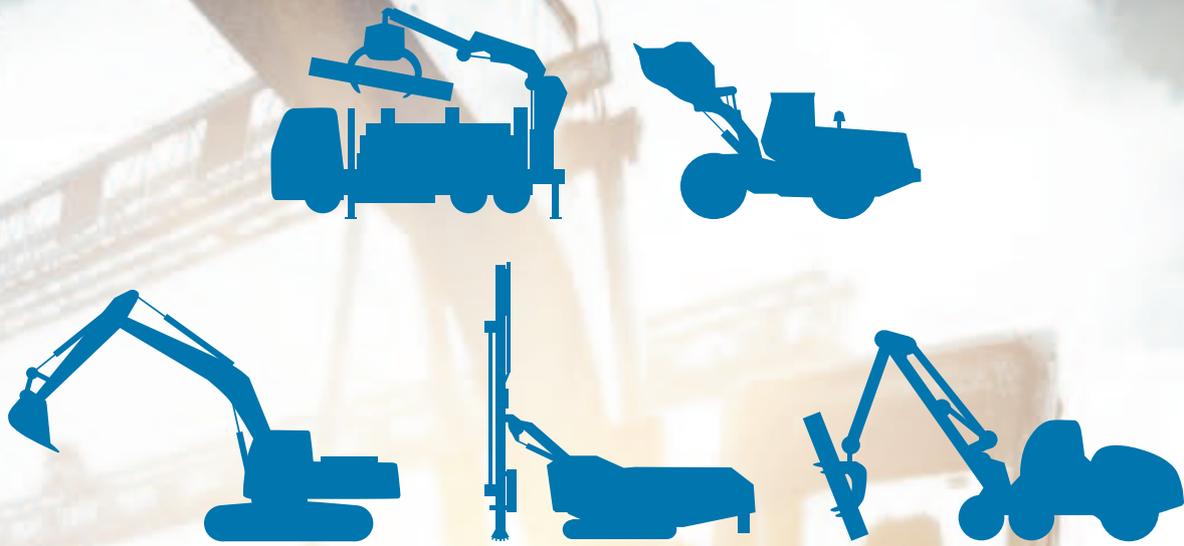
TEC152 is fully functional in both 24V and 12V systems as a standard feature without any configuration or separate order codes required. Just plug the controller in the battery voltage system and it will work even during cranking (voltage drops during start-up). Typically 12V systems need a higher current for hydraulics control than 24V systems. We took this into account and created a configurable 1A or 2A current feedback range without loss of resolution. We also designed all the digital inputs with scalable threshold voltage levels, ensuring 100% compatibility with 12V machines. The system has a guaranteed and stable 12V sensor supply during voltage drops. Feel free to use **TEC152** in both voltage versions with full compatibility and without any functional risks.

Customize your product

Do you want to integrate a special feature into your controller to differentiate or protect your application on the market? Would you like to add a special interface for a sensor or a communication port? **TEC152** makes this possible. The design of the controller supports the installation of a customized I/O board, and we have reserved a space for two sealed M12 connectors on top of the aluminum cover for interfacing with the board. The controller can be designed based on your specifications or we can help you specify the ideal solution to match your requirements. It is also possible to put your brand on the controller and turn **TEC152** into your special product. Please contact a local Technion sales office with your ideas so that we can design together a solution that meets your needs.

Suitable for all machines, perfect for mobile cranes

The I/O configuration of the **TEC152** hardware has been designed to meet the requirements of various machines by implementing features such as full support for both current and voltage controlled (Sauer-Danfoss) valves. This is especially important in crane applications where both options are typical and need to be supported in the same controller unit. When combined with the **xCrane** application, **TEC152** offers you an all-inclusive crane control solution. **xCrane** is an open application developed by Technion which provides fully functional crane control features for both valve types. Although **TEC152** is an excellent tool for controlling cranes, it remains a general-purpose controller that can be used with almost any machine.



Find the best match for your application



I/O Table

					MY NEED	
OUTPUTS (32)	HIGH SIDE OUTPUTS	16	MAX 2.5A PWM OUTPUT			
	RATIOMETRIC OUTPUTS	8	SAUER-DANFOSS VALVE CONTROL ⁽¹⁾			
	LOW SIDE OUTPUTS	8	SW CONF	1A / 2A CURRENT FEEDBACK MAX 1A LOW SIDE DIGITAL OUTPUT		
INPUTS (30)	GENERAL PURPOSE INPUTS	12	SW CONF	8	PNP DIGITAL INPUT	
				4	PNP / NPN DIGITAL INPUT	
				12-BIT ANALOG INPUT 0...10V		
	HIGH PRECISION INPUTS	10	SW CONF	12-BIT ANALOG INPUT 0...5V		
				12-BIT ANALOG INPUT 0...10V		
				PNP DIGITAL INPUT		
				6	12-BIT ANALOG INPUT 4...20mA	
				4	12-BIT ANALOG RESISTANCE 1.5kohm	
	PULSE INPUTS	2	VR SENSOR INPUT			
			6	SW CONF	25kHz PULSE INPUT ⁽²⁾	
PNP DIGITAL INPUT						
12-BIT ANALOG INPUT 0...10V						
SUPPLY SOURCES (6)	REFERENCE OUTPUTS	4	SW CONF	5V @ 50mA (0.5%) 10V @ 50mA (0.5%)		
	SENSOR SUPPLY VOLTAGES	2	REGULATED 12V@250mA			
FIELD BUSES (5)	RS-232	1				
	CAN	4	CAN OPEN MASTER / SLAVE SUPPORT, J1939			
I/O EXPANSION OPTION FOR CUSTOMER SPECIFIC I/O						

1) Ratiometric outputs can also be configured as inputs, see TEC152 Technical Manual for details.
 2) Pulse counter reserves 1pin (with direction 2pins), quadrature encoder reserves 2pins (with index 3pins).

Product Specification

CPU	MPC5674F
Memory	FLASH 4MB, for CODESYS application 2MB Data FLASH 16MB, for CODESYS application 9.5MB RAM 1.25MB, for CODESYS application 0.75MB Retain memory 3.5kB, for CODESYS application 3.5kB
Supply voltage range	9V - 32V (operational overvoltage 36V)
Supply current, logic	0.3A
Supply current, outputs	20A, max
Housing	Aluminium 215 x 200 x 45 (W x L x H)
Temperature range, operating	-40...+75°C
Temperature range, storage	-40...+85°C
Protection	IP67
Connectors	121 Positions (Tyco Sealed MQS/JPT 1241434-1) M12 (2pcs) reserved for I/O extension
CAN x 4pcs	ISO 11898-2
Serial	RS-232
Electrical requirements	ISO 16750-2
Mechanical requirements	ISO 16750-3
Climate requirements	ISO 16750-4
Automotive EMC directive	UNECE regulation No.10
Construction machinery - EMC	EN 13309:2010
Agricultural and forestry machinery - EMC	EN ISO 14982:2009
Earth-moving machinery - EMC	ISO 13766:2006
Application development environment	CODESYS V3



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Order Options

TEC152-001	Standard version, no additional options
TEC152-nnn	Customized product option with I/O expansion board

Technion Partner