



# iDCS

Industrial / DCS / SCADA Trainer  
with Wireless Intelligent Controller

Note: Specifications are subject to change.

*Tesca Technologies Pvt. Ltd.*

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Tesca' has over 3 decades of experience in the field of Industrial Automation. Add to it the knowledge & presence in Indian higher Education Market, it is this perfect blend of vast experience and knowledge which gives iDCS the edge in delivering one of the best designed Industrial Distributed Control System to train young students and the future of India. The concepts of Distributed Control Systems, SCADA and Industrial communications can be exhaustively studied using this setup.

iDCS is designed around ADAM-3600, an Intelligent Remote Controller with multiple wireless function capability, multiple I/O selection, wide temperature range & support flexible communication protocol for real world industrial applications. The Intelligent RTU controller has logic capability of usual PLC as well as latest advanced features for DCS.

The ADAM-3600 is designed for use in the Internet of Things (IoT) for Remote diagnosis, Maintenance, Visual management & Strategy Development. iDCS can also be seamlessly Integrated with SCADA for Remote Monitoring & Control.

Ease of Experimentation and Learning for students is achieved by mounting the controller on a panel with easy access to all signals. Modular Breakout Panels for easy interfacing with simulated I/O's & with Plug in Modules (PIM's ) for performing various experiments are also provided. Process mimics as well as real world applications also connect with iDCS. A suitable software package used in the industry for configuring the controller and PLC Programming languages is also included in the package.

## Features

- Intelligent Industrial controller mounted on ESD protective Workbench
- On-board 24V 6A Power-Supply
- I/O Signals brought out on breakout panels for interfacing
- PLC Programming IEC-61131-3 standards with KW-Multiprog
- Provision for Industry standard DIN-rail mounted units
- Examples for PLC Programming & LabVIEW based
- Experiments Included.
- Ergonomic Design with Ease of Interfacing



## Specifications



DCS Controller

Protocols

Programming

Ports

Wireless Communication

Powerful Platform : 32-bit Processor with Run time Engine supporting

IEC-61131-3 Programming Language

Modbus/RTU, Modbus/TCP, DNP3

IEC-61131-3 SoftLogic

PLC Programming supports Instruction List (IL), Structured Text (ST),

Ladder Diagram (LD), Functional Block Diagram (FBD) &

Sequential Function Chart (SFC)

Serial Port 1 x RS232- DB9, 1 x RS485- Terminal Block

Ethernet Port 2 x RJ-45 10/100 Mbps

WIFI Supporting 802.11bgn

GPRS. 15 cm External Dipole Antenna (Optional)



DCS Breakouts Panels

Analog Inputs (DE)

Analog Input : 8 Channel differential of DCS Controller on Banana-sockets

- Resolution 16-bit

- Input Type  $\pm 10V / 4\sim 20mA$

- Isolation 2,000 VDC



Digital Inputs (Sink)

Digital Input: 8 Channel, Sink type of DCS Controller on Banana-sockets.

- Input Type Wet Contact, Protection Voltage +40 VDC,

- Isolation 2,000 VDC

- LED indicator per channel. Test-signal for Diagnostic check

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Digital outputs (Sink)	Digital Output: 4 Channel Sink type of DCS Controller on Banana-sockets. - Output : Open Collector (Sink), Rated Voltage 8–30 VDC - Isolation 2,000 VDC - LED indicator per channel. Test-signal for Diagnostic check	
Controller Ports	DCS Controller Ports terminated on - 2 x RJ45 connector (Ethernet Ports), - 1 x 9DTM (Serial RS-232 Port), - 1 x 3-contact Pluggable-Screw-Terminal-Block (Serial RS-485 port)	
Slot-A: Analog Outputs (DE)	Analog Output: 4 channels of DCS AO-Expansion Module on Banana-sockets - Resolution 12-bit , - Output : VDC $\pm 10$ V / 0–20 mA or 4–20mA (Differential) - Isolation 3,000 VDC	
Slot-B : Digital Inputs (Sink)	Digital Input: 8 Channel, Sink type of DCS Controller on Banana-sockets. - Input Type Wet Contact, Protection Voltage +40 VDC, - Isolation 2,000 VDC - LED indicator per channel. Test-signal for Diagnostic check	
Slot-C : Digital Outputs (Sink)	Digital Output: 8Channel Sink type of DCS Controller on Banana-sockets. - Output : Open Collector (Sink), Rated Voltage 8–30 VDC - Isolation 2,000 VDC - LED indicator per channel. Test-signal for Diagnostic check	
Slot-D : Expansion Mod	Expansion Module pre-wired on Banana-sockets for Expansion to plug in either of ; - Analog Input Module - Analog Output Module - Digital Input Module - Digital Output Module - Thermocouple Module	

#### DCS Experiment Breakouts

24VDC Power Supply	On-board 24VDC Power supply Terminated on 6xMIC connectors for PIM's - Pluggable - Screw - Terminal Block for user connections. - Fuse protection and LED indicator for each group.	
Push Button Switches (NO)	4 x Momentary Push-buttons signals on Banana-sockets - For interface with 24V Digital Input port of DCS. - LED indicator per Push-button.	
Toggle Switches (DPDT)	4 x SPDT Toggle switches signals on Banana-sockets - To interface with 24V Digital Input port of DCS. - LED indicators for each switch throw.	
Rotary Switches (3-way)	2 x 3 - way Rotary switches signals on Banana-sockets - To interface with 24V Digital Input port of DCS. - LED indicators for each switch throw.	
Indicators & Buzzer	8 x LED Indicators and 1 x Buzzer signals on Banana-sockets - To interface with 24V Digital Output port. - Test-signal for diagnostic check.	

#### DCS Plug In Modules ( PIM's ) : Standard Modules are available in 2 sizes - 1DIN and 2DIN

PIM-DVM-1CH-20V	Digital VoltMeter1 (Size: 1-DIN) - Single Channel Range : +/-20V, 3.5 digits of 7-seg LED/ LCD display	
PIM-DAM-1CH-20mA	Digital Ammeter1 (Size: 1-DIN) - Single Channel Range : 0-20mA, 3.5 digits of 7-seg LED/ LCD display	
PIM-VS1-2CH-20V	Variable Voltage Source1 (Size: 1-DIN) - 2-channels Range: +/-10V. Switch for polarity selection.	
PIM-CS1-2CH-20mA	Variable Current Source1 (Size: 1-DIN) - 2-channels Range: -20mA, Switch for polarity selection.	
PIM-FP1	Facia Plate1 (Size: 1-DIN) - With Cut-out for mounting user-selected 96 x 96 Industrial DIN Module - 4xBanana-sockets and 24V Power Connector provided on Facia plate	

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PIM-DVM-2CH-20V	Digital Volt Meter2 (Size: 2-DIN) - Two channel Range : +/-20V, 3.5 digits of 7-seg LED / LCD display
PIM-DAM-2CH-20mA	Digital Ammeter2 (Size: 2-DIN) - Two channel Range : 0-20mA, 3.5 digits of 7-seg LED / LCD display
PIM-VS2-4CH-20V	Variable Voltage Source2 (Size: 2-DIN) - 4-channels Range: +/-10V, Switch for polarity selection.
PIM-CS2-4CH-20mA	Variable Current Source2 (Size: 2-DIN) - 4-channels Range: -20mA, with for polarity selection.
PIM-FP2	Facia Plate2 (Size: 2-DIN) - With Cut-out for mounting user-selected 96 x 96 Industrial 2 DIN Module - 8xBanana-sockets and 24V Power Connector provided on Facia plate



## Ordering Information

Ordering Code	Description
iDCS-R1	Industrial DCS / SCADA Training System for Intelligent Remote Controller, ESD Worktable with 8 Breakout-Panels, 5 Experiment Breakouts & Complete Documentation 8 Plug-in-Modules – Two each of Digital Voltmeter, Digital Ammeter, Voltage Source & Current Source
TR-iDCS-RTU-PC	Intelligent RTU ADAM-3600 Controller with wireless module for iDCS, Latest Laptop Preloaded with Examples for PLC programming languages & LabVIEW based Experiments, Set of 50 Patch Cords with stackable Banana plugs

Dyna-iDCS Accessories	
Application Mimic Modules	Real application Mimic Modules / Panels are available
SCADA Software	Supervisory Control and Data Acquisition Software
HMI Module	HMI Panel Module in different sizes & form factors

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