FMVSS305 High Voltage Isolation Measurement System User's Manual

November 2024

Contents

DTS Support

The FMVSS305 High Voltage Isolation Measurement System is designed to be reliable and simple to operate. If you need assistance, DTS has support engineers worldwide with extensive product knowledge and test experience ready to help. Registered users can access the DTS Help Center web portal at support.dtsweb.com.

Registration also gives you access to additional self-help resources and non-public support information. To register, go to support.dtsweb.com/registration.

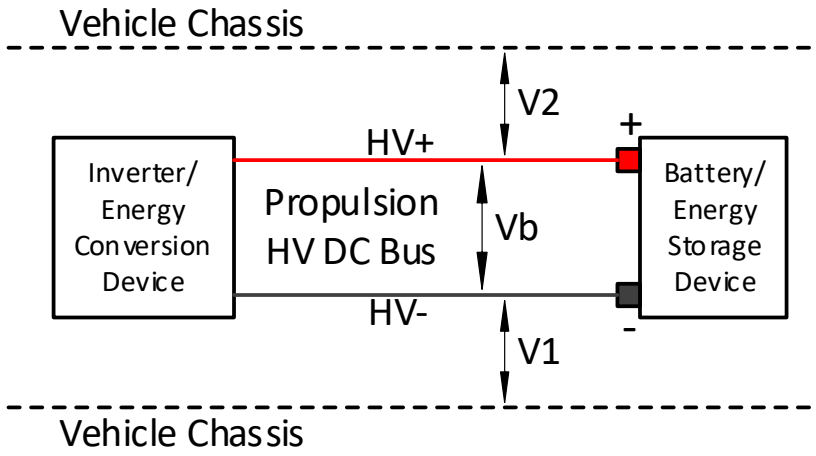
Introduction

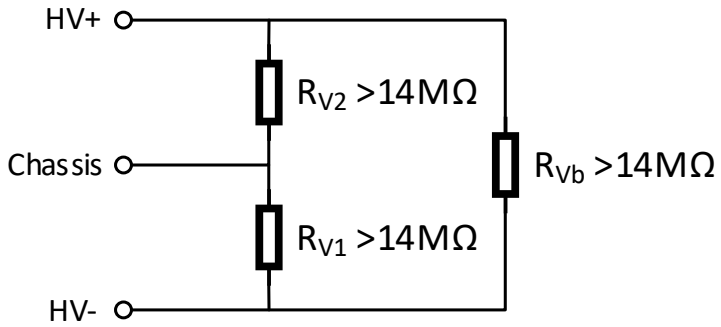
This manual supports the FMVSS305 High Voltage Isolation Measurement System, part number 13006-91020.

The FMVSS305 System supports vehicle battery testing in accordance with the 2022 FMVSS 305 testing standard specification. Capable of measuring up to 1200 VDC, it supports 800 VDC vehicle, high-voltage, DC bus architectures accommodating fully charged lithium-ion battery pack voltages. Input impedance is >14 MΩ in normal operation to limit series resistance measurement errors.

The unit includes two high-voltage (HV) input connectors, each supporting three voltage measurements on the HV DC bus, totaling six voltage measurements. One HV input connector monitors the three voltages on the battery (energy storage device) side of the bus; the other connector monitors the inverter (energy conversion device) side of the bus.

- **Vb:** HV DC Bus Positive Rail (HV+) → HV DC Bus Negative Rail (HV-)
- **V1/V1':** Vehicle Chassis → HV DC Bus Negative Rail (HV-)
- **V2/V2':** HV DC Bus Positive Rail (HV+) → Vehicle Chassis





The signal output voltages are galvanically isolated from the HV signal inputs and reduced with a ratio of 1000:1. Each HV signal input connector (HV1 and HV2) has a dedicated set of banana jack connectors and a dedicated auxiliary pendant connector to monitor the unfiltered signal output voltages. A SLICE6 DAS monitors and records the filtered signal output voltages of all six voltage measurements.

External communications, control and status signals are supported via the COMM connector. Operational input power is supported via the 15V IN connector. Should primary input power fail, the internal super-capacitor will provide a minimum of 10 s of back-up power for data recording during a crash event. Data is recorded via the SLICE6 DAS module inside the unit. DataPRO software is used to communicate with the SLICE6 DAS module.

The banana jack connectors support measurements using a handheld, digital multimeter (DMM). The HV1 and HV2 auxiliary pendant connectors support measurements with a customer-supplied pendant display. (These connectors are not supported by back-up power.) Four LEDs provide DAS status, 15 V input power status and HV status.

The test resistance (R_0) necessary for calculating the isolation resistance is provided internally with a fixed value at approximately 500 times the maximum input voltage. Two rocker switches, one each for HV1 and HV2, or the auxiliary pendant connectors control switching the test resistances into and out of circuit.

The FMVSS305 System may be used standalone or integrated with DTS equipment and cables that use the standard 19-pin COM(M) connector. See Appendix A for connector information and pin assignments. Mechanical specifications are included in Appendix B. The SLICE6 DAS User's Manual can be found on the Help Center here.

Using the FMVSS305 System

Internal DAS

The FMVSS305 System contains a SLICE6 DAS for data recording. Power to the DAS is provided via the 15 V IN connector and PC communications are supported via the COMM connector. The S6 STS LED provides DAS system status.

S6 STS (SLICE6 Status) LED Indicator

The FMVSS305 System has a single LED indicator that shows SLICE6 DAS system status.

Priority*	Condition	S6 STS
1	Idle; not connected	 (0.5 Hz)
2	Idle; connected	
3	Communicating; idle or real-time (single flash when command received)	
4	Idle (connected or not connected; low or high power)	
5	Arming or armed; not recording	
6	Armed; recording	
7	Armed; faulted or triggered	
N/A	Booting bootloader	 (5 Hz)
N/A	Booting firmware	
N/A	Network DHCP initialization (during DHCP negotiation with server; time out after 30 seconds)	 (2 Hz)

* Higher priority will override the lower priority LED state.

Note: There is no post-event indication; the LED transitions automatically based on condition.

15V IN Power Connector

This connector is used to provide primary operational power. Should primary input power fail, the internal super-capacitor will provide a minimum of 10 s back-up power for data recording only. The super-capacitor will recharge when connected to sufficient external power.

- Primary input power/super-capacitor charging voltage: 12.5 V-16.9 V range (15 VDC, 1 A nominal)
- Super-capacitor charging time: 190 s from full discharge
- Back-up power duration: minimum of 10 s
- Current draw is the highest when the back-up capacitor is charging and/or the unit is armed

Note	
	The FMVSS305 System does not contain an internal battery. Should primary input power fail, the internal super-capacitor will provide back-up power to support data recording for a minimum of 10 s.

PWR LED Indicator

The PWR LED indicates the status of input power and super-capacitor state.

	
	External power OK; super-capacitor fully charged
	External power OK; super-capacitor charging
	External power absent; super-capacitor discharging
	External power absent; super-capacitor fully discharged

Caution	
⚠	Do not perform any critical tests unless the PWR LED indicator is green.

COMM Connector

The COMM connector allow access to all communication features, network information, hardware status and signal lines. Ethernet 10/100BaseT/Tx communications, contact-closure event input, start record input and status signals are supported. An external start record signal received by this connector will initiate data collection.

This connector is compatible with all SLICE PRO and TDAS COM connectors. When used with other DTS equipment, the FMVSS305 System is an end-of-chain device.

HV1 and HV2 PENDANT (Auxiliary) Connectors

Each auxiliary pendant connector supports a remote pendant display. Unconditioned power (15V IN = auxiliary VDC out) is provided to the remote device, however these connectors are not supported by back-up power should external power fail. The current draw of any attached device should not exceed 200 mA.

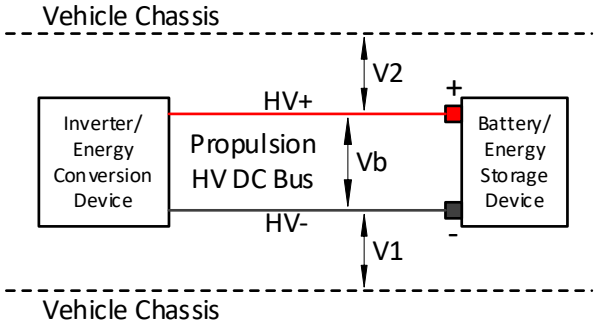
Three unfiltered signal output voltages (Vb, V1, V2) for each signal input connector (HV1 or HV2) are available to measure. The signal output voltage is reduced 1000:1 from the HV signal input voltage (e.g., 1 V in = 1 mV out). In addition, each auxiliary pendant connector provides control of the internal test resistance (R_0) solid-state relays. To control the test resistance from the auxiliary pendant connectors, the test resistance control switches must be set to the OFF position. A 5 VDC regulator is needed in the customer-supplied pendant display to produce the control signals. An internal logic circuit prevents activation of both test resistance circuits at the same time. The logic circuit along with other design features of the circuit will NOT allow the user to induce a direct short from HV+ to HV-. See Appendix A for connector information and pin assignments.

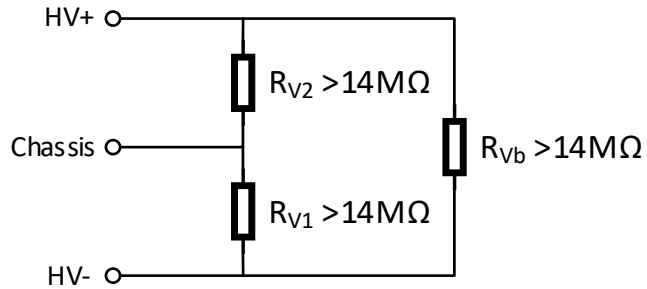
Test Resistance Control Rocker Switches

The test resistance control rocker switches control the connection of the internal test resistances (R_0) on the high-voltage signal input connectors (HV1 and HV2). These rocker switches control an interposing solid-state relay which provides galvanic isolation protection from the HV inputs to the user.

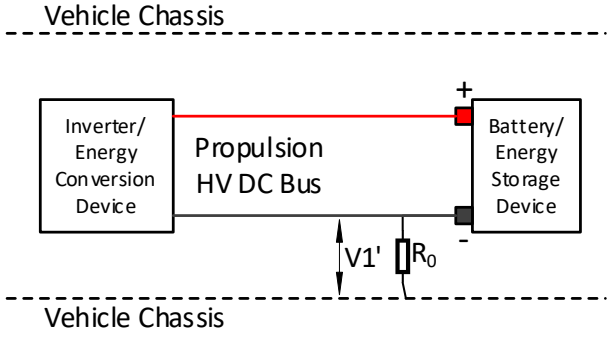
The test resistance (R_0) is necessary for calculating the isolation resistance of the energy storage device to the vehicle chassis. R_0 is provided internally with a fixed value at approximately 500 times the maximum input voltage (~600 kΩ). Each rocker switch has three positions (V1' – OFF – V2'). The terminology (') is pronounced */prime/* and is carried from the FMVSS 305 standard to denote that the voltage V1 or V2 has been changed by the addition of the test resistance R_0 across that potential. The following diagrams depict the circuit conditions of the high-voltage signal inputs for each position of the test resistance control rocker switch. (Note: HV1 and HV2 each have a dedicated test resistance circuit and control rocker switch.)

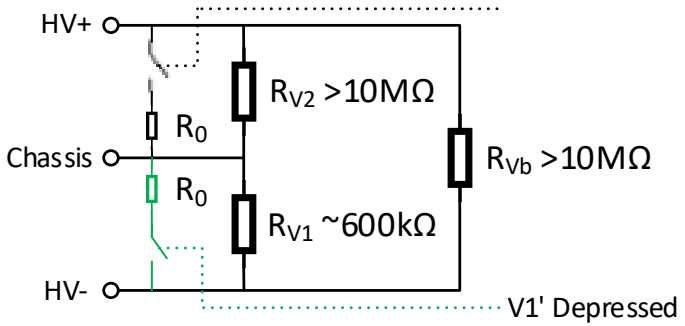
OFF





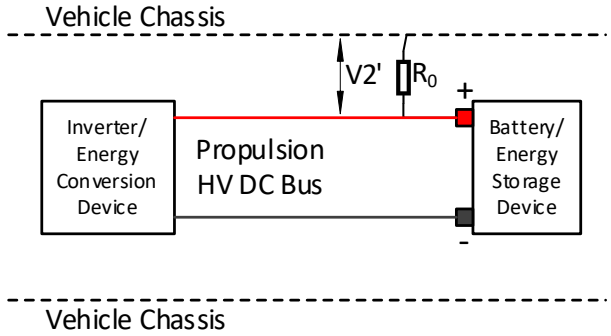
V1'

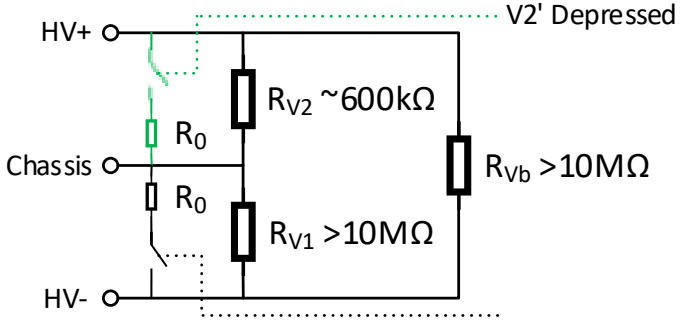




$$Ri1 = R0 (1 + V2 / V1) [(V1 – V1') / V1']$$

V2'





$$R_{i2} = R_0 (1 + V1 / V2) [(V2 – V2') / V2']$$

An interlock circuit overrides the position of the test resistance control rocker switch to the OFF circuit condition when the SLICE6 DAS is armed. This prevents inadvertent activation of the rocker switch during a crash event. Therefore, the SLICE6 DAS can only record the unaltered voltages Vb, V1, and V2.

HV1 and HV2 Signal Output Banana Jacks

The signal output banana jacks support measurement of the signal output voltages (~1.2 VDC out at 1200 VDC in) using a standard, handheld DMM. The signal output voltage is reduced 1000:1 from the HV signal input voltage (e.g., 1 V in = 1 mV out), and the signal output voltages are galvanically isolated from the HV signal inputs. The signal output banana jacks are prearranged in positive (red)/negative (black) pairs to facilitate all positive measurements. One pair of banana jacks is provided for each of the three unfiltered signal output voltages (Vb, V1, V2) corresponding to the HV1 or HV2 signal input connector. Used in conjunction with the test resistance control rocker switches (see page 10), the user may induce and measure the V1' and V2' voltage at the same banana jack pair that normally measures the unaltered V1 and V2 voltage, respectively.

- **Vb:** HV DC Bus Positive Rail (HV+) → HV DC Bus Negative Rail (HV-)
- **V1/V1':** Vehicle Chassis → HV DC Bus Negative Rail (HV-)
- **V2/V2':** HV DC Bus Positive Rail (HV+) → Vehicle Chassis

HV1 and HV2 (Amphenol) Connectors

The HV signal input connectors (HV1 and HV2) support connection to the test vehicle's high-voltage DC bus. Each connector includes a conductor for the HV DC bus positive rail (HV+), HV DC bus negative rail (HV-), and vehicle chassis. The inclusion of two connectors allows for measurements at two points on the HV DC bus (battery side and inverter/traction side). The internal input impedance between any two conductors on the same connector is >14 MΩ during normal operation. When using the test resistance rocker switch, the respective HV DC bus rail conductor to the chassis conductor will have an input impedance of approximately 600 kΩ (~500 times the maximum rated input voltage) while the other two conductors maintain an input impedance >10 MΩ. These connectors are fully isolated and reverse polarity protected. Each connector supports a maximum signal input voltage of 1250 VDC at sea level; operation of the FMVSS305 System device is not recommended at altitudes above 7,500 feet. The HV signal inputs are galvanically isolated from all signal outputs, controls, and operational power. See Appendix A for pin assignments.

HV1 and HV2 LED Indicators

These LEDs are green, yellow or red.

		
🟢	<40 VDC	
🟡	40-48 VDC	
🔴	>48 VDC	

Caution	
⚠	If the unit is connected to a HV DC bus with the contactors closed and the HV STS LED green, it is possible that the HV signal input connector is wired with reverse polarity. This can be verified by measuring the signal output voltage on the banana jacks for the active HV signal input connector. If the signal output voltage is negative when the DMM is connected with a positive-to-positive connection, the HV signal input connector is wired in reverse polarity.

Hardware Configuration Specifications

The FMVSS305 High Voltage Isolation Measurement System contains a SLICE6 DAS module[1]. SLICE6 DAS are typically delivered with a default IP address as follows:

IP address	192.168.1.x where x is determined based on the last two digits of the S/N:
	x = 10 for S/Ns with 00 or 10;
	x = 1-9 for S/Ns 01-09, respectively;
	x = 11-99 for S/Ns 11-99, respectively

Netmask	255.255.255.0

The calibration data for your equipment identifies the IP address as shipped from the factory. If the calibration data is not available, try using the default address described in the table above.

If you need information on the specifics of your equipment, please submit a request through the DTS Help Center web portal (support.dtsweb.com) and include the serial number(s) of the equipment and parameters you are asking about.

Using the SLICE Network Configuration Utility

The *SLICE Network Configuration Utility* (available from the DTS Help Center) can be used to view or change the unit's IP address.

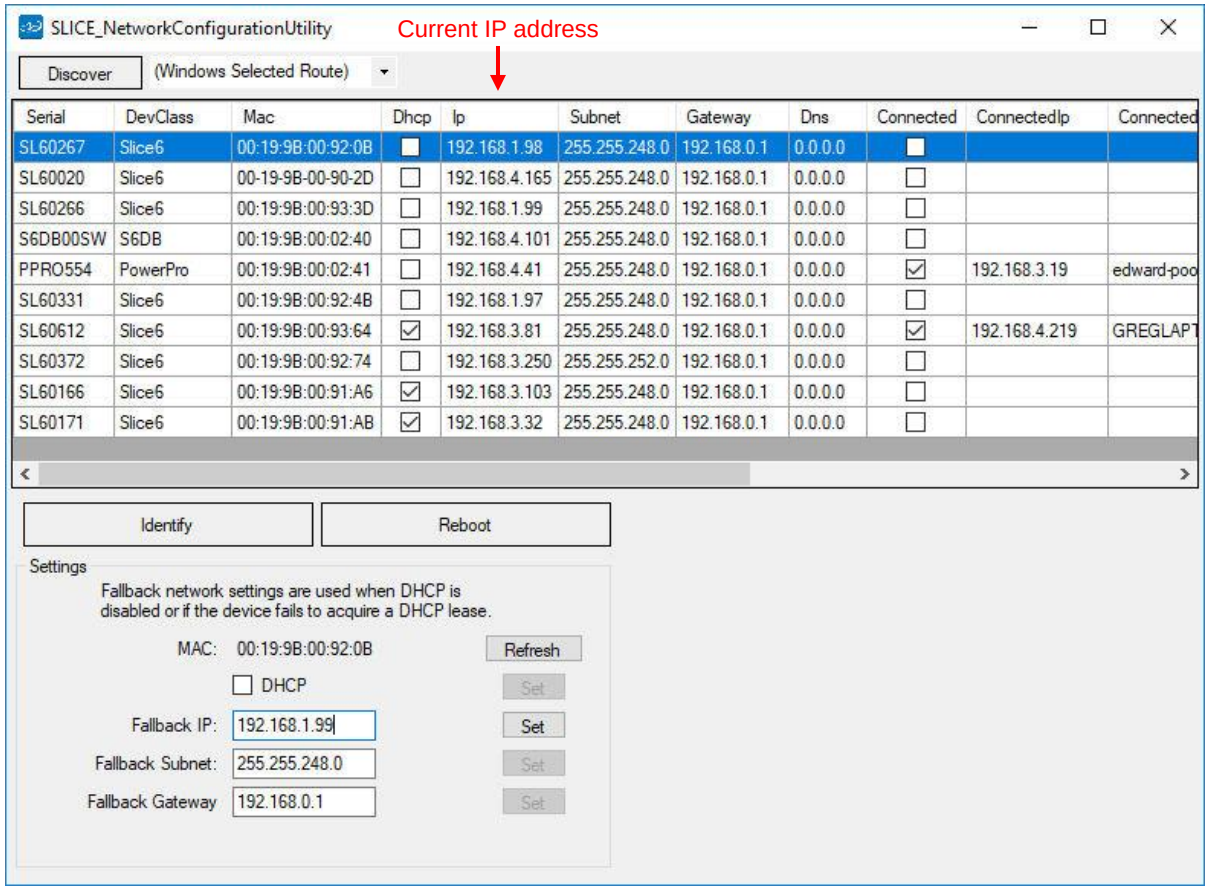
Use of the utility requires a network that supports multicast and the workstation running the utility must also allow it. Confirm that:

- The PC's Ethernet properties are not using anything that can block multicast; e.g., *DNE LightWeight Filter*.
- The Windows Firewall will allow multicast traffic.
- Any third-party anti-virus software will allow multicast traffic.

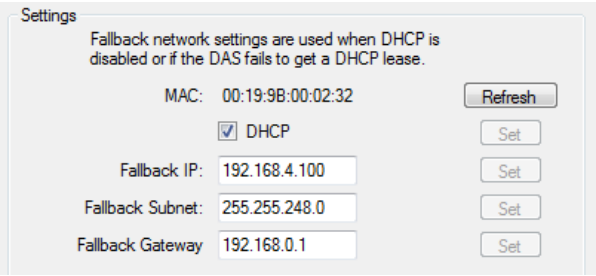
[1] The SLICE6 DAS User's Manual can be found on the Help Center here.

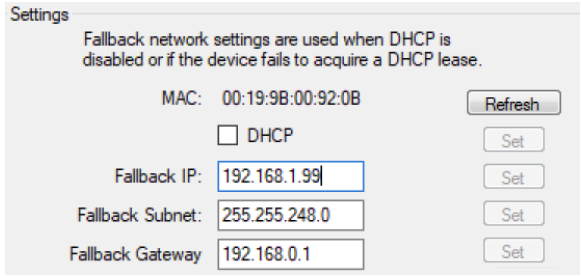
1. Open the *SLICE Network Configuration Utility*.

2. The software will immediately look for all attached devices and list them in the table. (You may also click **Discover** to refresh the list.) Note: Clicking on **Identify** for any selected device will cause the unit's LED to flash.

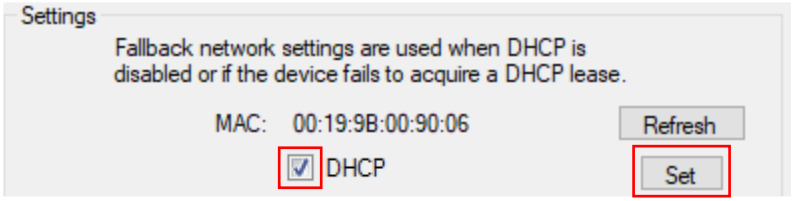


3. Select the SLICE6 device from the list. The device Settings are shown at the bottom of the window. The current IP address may or may not match the fallback IP address, depending on whether DHCP is selected.

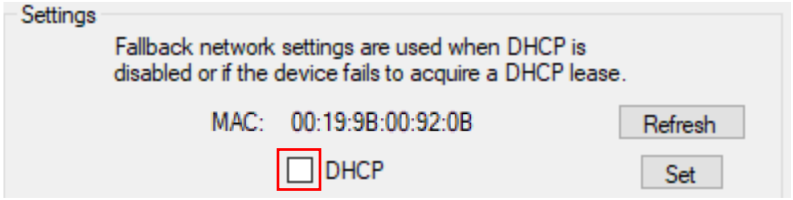




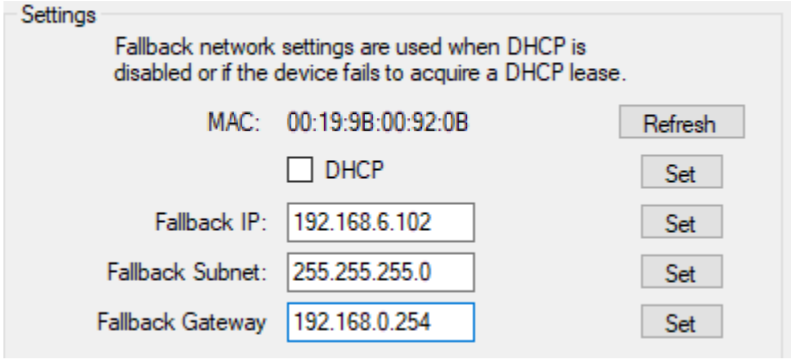
4. To enable DHCP, select the check box then select **Set**. Proceed to step 7.



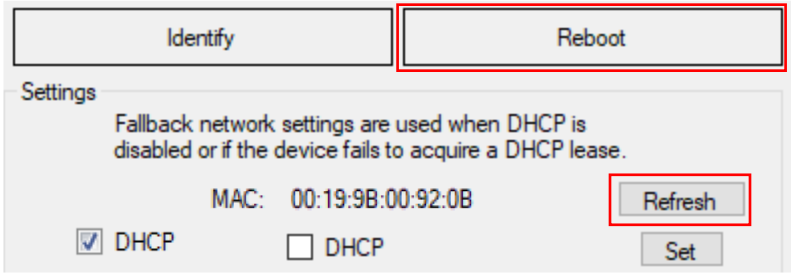
5. To disable DHCP and manually enter IP address and other information, unselect the check box.



6. Enter the new parameters and select **Set** for each item updated. (Note: The MAC address is not user configurable.)



7. Select **Refresh** to view the settings (optional), then **Reboot** the device.



DataPRO Software

DataPRO software (version 1.10 and higher) is used with the FMVSS305/SLICE6 DAS. Minimum PC specifications are:

Operating system:	Windows 7 and later; 32- and 64-bit .NET Runtime version 4.5.2 MS Access ODBC drivers[2]
Processor:	i5 minimum; i7 recommended
RAM:	8 GB minimum; 16 GB recommended[3]
Hard drive disk space:	1 GB + more for test data
Screen resolution:	1366 x 768 minimum; 1920 x 1080 recommended

Additionally, DTS recommends a network that supports gigabit Ethernet (GbE).

Data Collection Concepts

The discussion below provides a general introduction to data collection. Please see the software manual for a detailed discussion and implementation specifics.

The SLICE6 DAS is a standalone data logger. Once the FMVSS305 System is armed, the PC can be disconnected if desired. After receiving a Start Record or Event signal, the DAS autonomously collects data, storing it to flash memory with no user interaction. After the test, the user reconnects the PC to download the data.

There is also a real-time mode in the control software that allows the user to check channel inputs on an oscilloscope-looking screen. (This data can be logged.)

[2] Usually included with Microsoft Office.
[3] More RAM is important for high channel counts and longer/higher sample rates.

Data Collection Modes

The SLICE6 DAS supports four data collection modes: Circular Buffer, Recorder, Hybrid Recorder, and Continuous Recorder. (Note: The software cannot simultaneously display the data while the system is recording.)

Circular Buffer Mode

Using Circular Buffer mode, the user can program the SLICE6 DAS to record pre- and post-Event data. Time Zero (T=0) is marked when the Event signal is received.

Due to the nature of flash memory, the system cannot be armed in Circular Buffer mode indefinitely. Please see page 22 for information on how to calculate data storage duration when using Circular Buffer mode.

Recorder Mode

Data collection begins when a Start Record signal is received and continues for the time specified in the test set-up. If an Event signal is received sometime after the Start Record signal, this is marked as T=0.

Hybrid Recorder Mode

Data collection begins when a Start Record signal is received and continues until the unit receives an Event signal. The unit then records for the post-Event time specified by the user. The Event signal marks the T=0 point and all data recorded is available for download.

Continuous Recorder Mode

Data collection begins when a Start Record signal is received and continues until the Start Record signal is released. The unit will then re-arm for another event. The LEDs on the unit will flash blue slowly then rapidly, and then the status LED will become solid blue, indicating the unit is fully armed. The unit will continue to record new events until it records the number of events specified by the user. If an Event signal is received after the unit has re-armed, the unit will disarm and no longer attempt to re-arm.

Start Record and Event Initiation

The SLICE6 DAS supports multiple methods of initiating Start Record and Event signals. Typically, Start Record and Event are initiated via an external hardware interface that provides a discrete contact closure (CC) signal to initiate recording (Recorder mode) or mark T=0 (Circular Buffer mode).

All SLICE6 DAS data collection modes support multi-event arming. A unit armed in a multiple-event mode will re-arm when an event completes. The unit will stop re-arming when the number of events specified by the user has been recorded.

SLICE6 DAS can be placed in an auto-arm mode that will cause the unit to arm automatically when the power is cycled. This available with any available data collection mode.

Additionally, Circular Buffer mode supports level triggering. This method continuously samples the incoming data and begins data collection if the data is above or below predefined levels. For example, it might be useful to begin data collection when a certain accelerometer experiences a force above 200 g. Using level trigger and Circular Buffer mode, SLICE6 DAS can support this or any level-trigger signal on any channel.

Caution	
	Level trigger is NOT recommended when the FMVSS305 System is used in destructive testing.

Finally, if the FMVSS305 System remains connected to the PC during data collection, the control software can be used to initiate data collection.

The table below summarizes the data collection modes and event/triggering options.

	Supports T=0 Start Record	T=0 methods supported	Data record window
Circular Buffer	Yes	Hardware (CC), software (PC) or level trigger	User-defined pre- and post- T=0 durations
Recorder	Yes	Hardware (CC), software (PC) or level trigger	User-defined duration after T=0
Hybrid Recorder	Yes	Hardware (CC), software (PC) or level trigger	User-defined post-Event duration
Continuous Recorder	Yes	Hardware (CC), software (PC), or level trigger	User-defined duration after T=0, with recording multiple events possible

Data Memory Size

With 15 GB of flash memory available for data storage, the SLICE6 DAS can record ~52 minutes of data at the maximum sampling rate (6 channels at 400 ksps). Since the recording capacity is very large, it is generally best to limit sampling rates and event durations to the minimum necessary to avoid large and cumbersome data files. Large files take longer to download and may also be time-consuming to post-process or difficult to share. Use of the Region of Interest (ROI) download can save a great deal of time if implemented properly.

Sampling Rates

User-selectable sampling rates are available from 2,000 sps to 400,000 sps.

# of Channels*	Maximum Sampling Rate (per channel)
6	400,000 samples per second (sps)

* All channels are recorded even if they are not programmed.

With 15 GB available for data storage, there are 7,500 M samples available (1 sample = 2 bytes). To determine the maximum recording time, divide the number of samples by the product of the sampling rate and the number of channels.

$$\frac{7{,}500{,}000{,}000}{\text{Sampling rate (sps)} \quad X \quad \text{\# of channels}} = \text{\# of seconds}$$

Example: 6 channels of data at 400,000 sps

$$\frac{7{,}500{,}000{,}000}{400{,}000 \quad X \quad 6} = 3{,}125 \text{ sec (52 minutes)}$$

Circular Buffer Limitations

Due to the nature of flash memory, the system cannot be armed in *Circular Buffer* mode indefinitely. To determine the maximum time available, use the equation below:

0.8 * recording time = maximum time available in *Circular Buffer* mode

Example: 0.8 * 3,125 sec = 2500 sec (41 minutes)

In this example, the test must occur within 41 minutes, after which time the unit stops recording data.

Care and Handling

The FMVSS305 High Voltage Isolation Measurement System is designed to operate reliably in dynamic testing environments. While it is resistant to many environmental conditions, you should not subject the unit to harsh chemicals, submerge it in water, or drop it onto any hard surface.

Caution	
	Electronic equipment dropped from desk height onto a solid floor may experience up to 10,000 g. Under these conditions, damage to the exterior and/or interior of the unit is likely.

When not in use or if shipping is required, we suggest that you place the unit in the padded container originally provided with your unit.

Each FMVSS305 System is supplied with calibration data from the factory. DTS recommends annual recalibration to ensure that the unit is performing within factory specifications. The FMVSS305 High Voltage Isolation Measurement System and the SLICE6 DAS are *not* user-serviceable and should be returned to the factory for service or repair.

Safety

The FMVSS305 System measures voltages as high as 1200 V. Use common-sense safety measures when near the unit during operation. Users should never attempt to open the unit for service or repair.

Safety Warning: HIGH VOLTAGE	
	The FMVSS305 System measures voltages as high as 1200 V. While safe to touch, no safety feature can replace the use of proper PPE when near the unit during operation.

Shock Rating

The FMVSS305 System is rated for and fully tested to 100 g, 12 ms duration, in 5 axes.

Mounting Considerations

Securely bolt the unit to the test article or dynamic testing device to provide the best shock protection. Mounting methods and hardware selection should be calculated to withstand expected shock loading and allow proper grounding.

Check bolt tightness periodically to ensure the unit is securely fastened to the baseplate and the baseplate is securely fastened to the testing platform. See page 28 for mechanical specifications.

Environmental Considerations

The FMVSS305 System is a low-power device with negligible self-heating and it is unlikely that self-heating will be an issue in real-world testing.

Operation of the FMVSS305 System is not recommended at altitudes above 7,500 feet.

Should you have any questions about using the FMVSS305 System in your environment, please contact DTS.

Grounding

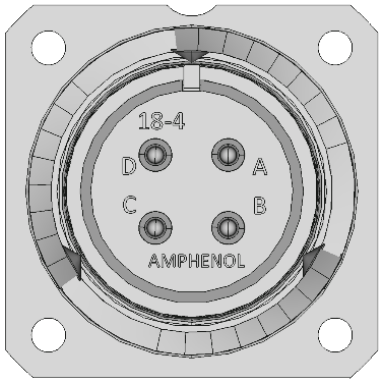
DTS strongly recommends that the all equipment be properly grounded to minimize any data noise due to high-current transients. The test vehicle or dynamic testing device should be connected to earth ground. Test equipment should be grounded to each other and bolted to the test article. DTS recommends checking continuity between the enclosures of each unit to confirm resistance readings of <1 ohm.

If the installation does not permit bolting the FMVSS305 High Voltage Isolation Measurement System and connected DAS to a common ground, DTS recommends connecting ground wires between the various enclosures.

Contact DTS if you have any questions regarding proper methods to ground the system.

Appendix A: Connector Pin Assignments

HV1 and HV2 connectors
(GTC030R18-4P-025)



(panel view)

Suggested cable connector P/N:
GTC06R18-4S-025
(DTS P/N 80000-03101-R)

Pin	Function
A	Chassis
B	-VDC in
C	No connection
D	+VDC in

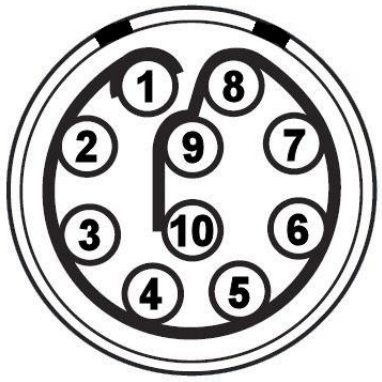
15V IN connector
(EEG.2B.304.CLN)

(panel view)

Suggested cable connector P/N:
FGG.2B.304.CLADxx*

Pin	Function
1	+VDC in
2	Ground
3	No connection
4	No connection

HV1 and HV2 PENDANT (Auxiliary) connectors
(EEA.2B.310.CLL)



(panel view)

Suggested cable connector P/N:
FGA.2B.310.CLADxx*

Pin	Function
1	VDC out (unconditioned; = VDC from 15V IN; 200 mA maximum)
2	Ground
3	V2 SW (apply 5 V to activate)
4	V1 SW (apply 5 V to activate)
5	V2+
6	V2-
7	V1+
8	V1-
9	Vb+
10	Vb-

* xx denotes diameter of cable to be used; e.g., 52 = 5.2 mm. See www.lemo.com for more information.

COMM connector
(EEG.2B.319.CLN)

(panel view)

Suggested cable connector P/N:
FGG.2B.319.CLADxx*

Pin	Function
1	ON (active low)
2	Arm status
3	Shield
4	Start recording input, optically coupled (apply 5 V with respect to pin 16) and maximum input current 20 mA
5	Common
6	Status output, 5 V via 110 ohm (referenced to common (pin 5))
7	(+) Status input, optically coupled (apply 5 V with respect to pin 16) and maximum input current 20 mA
8	Ethernet Tx (-) (10/100BaseT/Tx)
9	Ethernet Tx (+) (10/100BaseT/Tx)
10	Not connected

Pin	Function
11	Not connected
12	Not connected
13	Not connected
14	Not connected
15	+Event, isolated, contact closure to pin 19
16	(-) Common for start record input (pin 4) and status input (pin 7)
17	Ethernet Rx (-) (10/100BaseT/Tx)
18	Ethernet Rx (+) (10/100BaseT/Tx)
19	-Event, isolated, contact closure to pin 15

* xx denotes diameter of cable to be used; e.g., 52 = 5.2 mm. See www.lemo.com for more information.

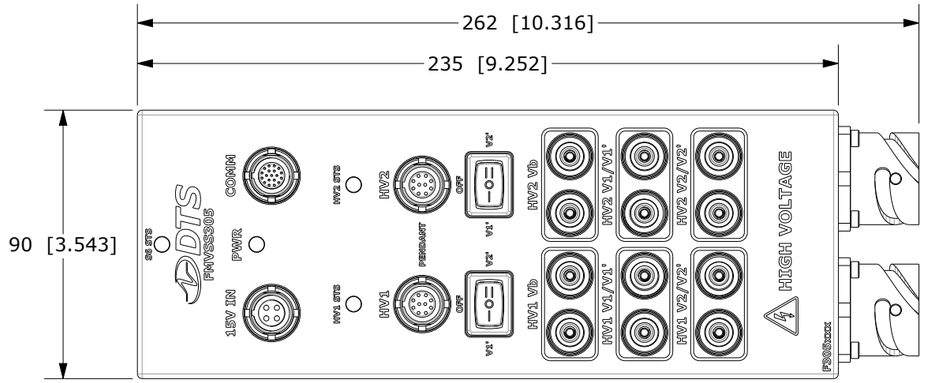
Banana Jack connectors
(CT2908-2 (Red); CT2908-0 (Black))

(panel view)

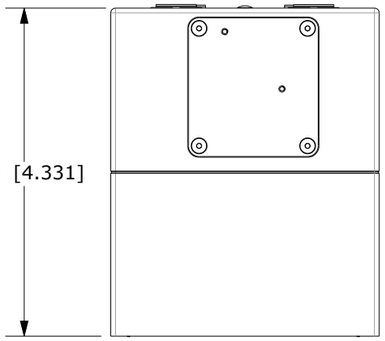
Pin	Function
Red	Positive
Black	Reference

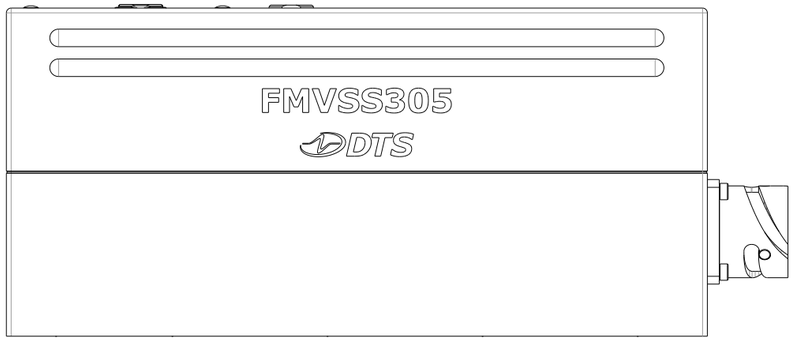
RoHS
Manufacture/fabricate to meet the EU RoHS Directive 2011/65/EU and RoHS Annex II phthalates

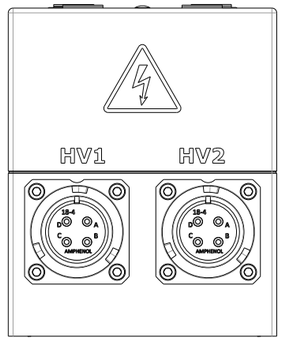
REV	ZONE	DESCRIPTION	DATE	BY
0		INITIAL RELEASE	2024-07-25	JC
1		ADDED MASS & 2ND MOUNTING PLATE OPTION (PG.2)	2024-08-08	JC

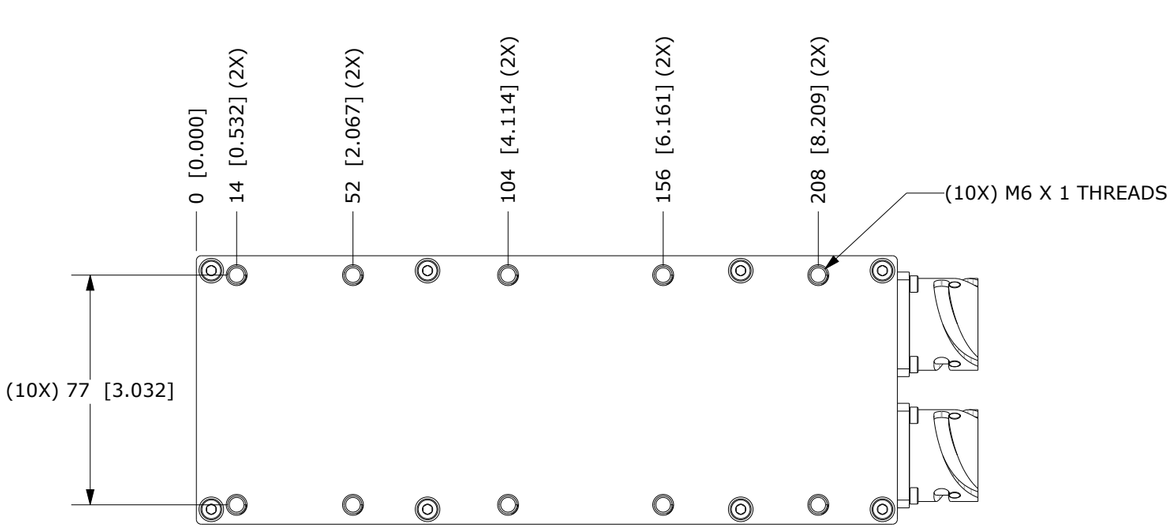


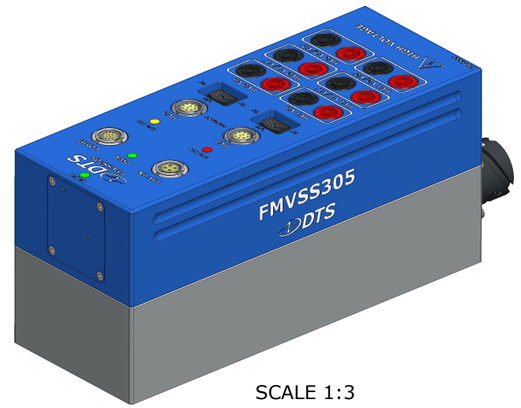
SCALE 1:3











SCALE 1:3

MASS: 2.7 KG (5.95 LB)

DTS SEAL BEACH, CA 90740
562-493-0158
www.dtsweb.com

MATERIAL:
6061-T6 ALUMINUM
W/ BLUE & CLEAR ANODIZE

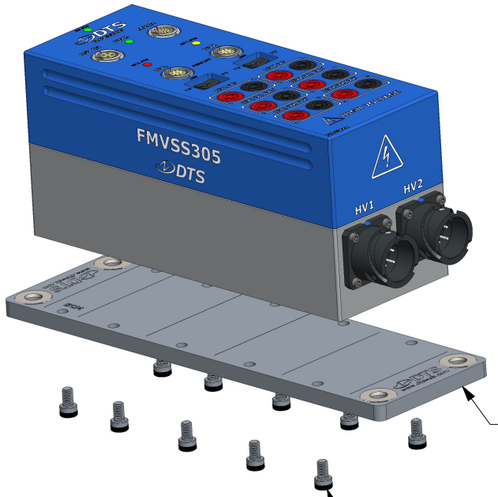
UNLESS OTHERWISE SPECIFIED:
UNITS = MM [INCH]
DIMENSIONAL TOLERANCES ±.254 [0.010"]
INTERPRET PER ASME Y14.5. DO NOT SCALE.

DESCRIPTION:
FMVSS305 HIGH VOLTAGE ISOLATION MEASUREMENT SYSTEM, MOUNTING DRAWING

DTS P/N: 13006-91020
REV: 1
DRAWN: J CASEY
DATE: 2024-07-25
SIZE: B
SCALE: 2:1
SHEET: 1 OF 2

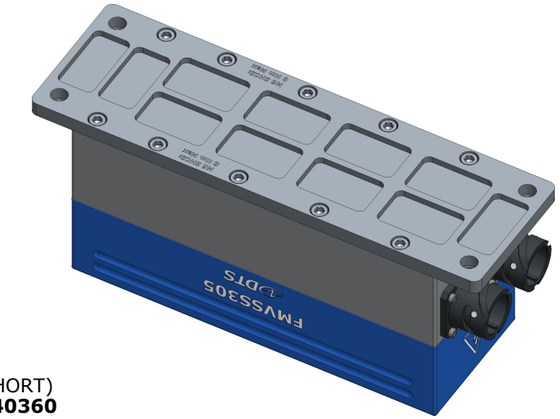
MDL:
FMVSS305_MNT_DRW
DRW:

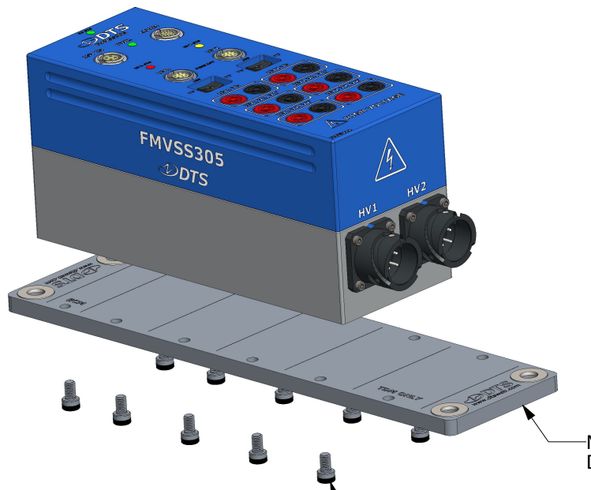
MOUNTING PLATE OPTIONS



MOUNT PLATE (SHORT)
DTS P/N **13000-40360**

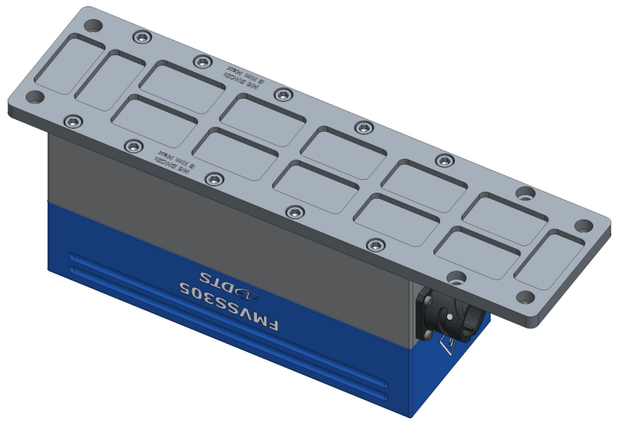
(10X) FASTEN TO MOUNT PLATE USING
M6 X 10 SHCS. TIGHTEN TO 53 IN-LB (6 N-M)

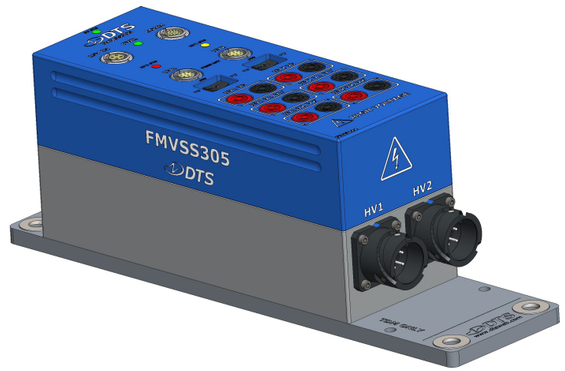




MOUNT PLATE (LONG)
DTS P/N **13000-40720**

(10X) FASTEN TO MOUNT PLATE USING
M6 X 10 SHCS. TIGHTEN TO 53 IN-LB (6 N-M)





DESCRIPTION: FMVSS305 HIGH VOLTAGE ISOLATION MEASUREMENT SYSTEM, MOUNTING DRAWING			
DTS P/N: 13006-91020			REV: 1
DRAWN: J CASEY			
DATE: 2024-07-25	SIZE: B	SCALE: 3:5	SHEET: 2 OF 2

Accessories and Options

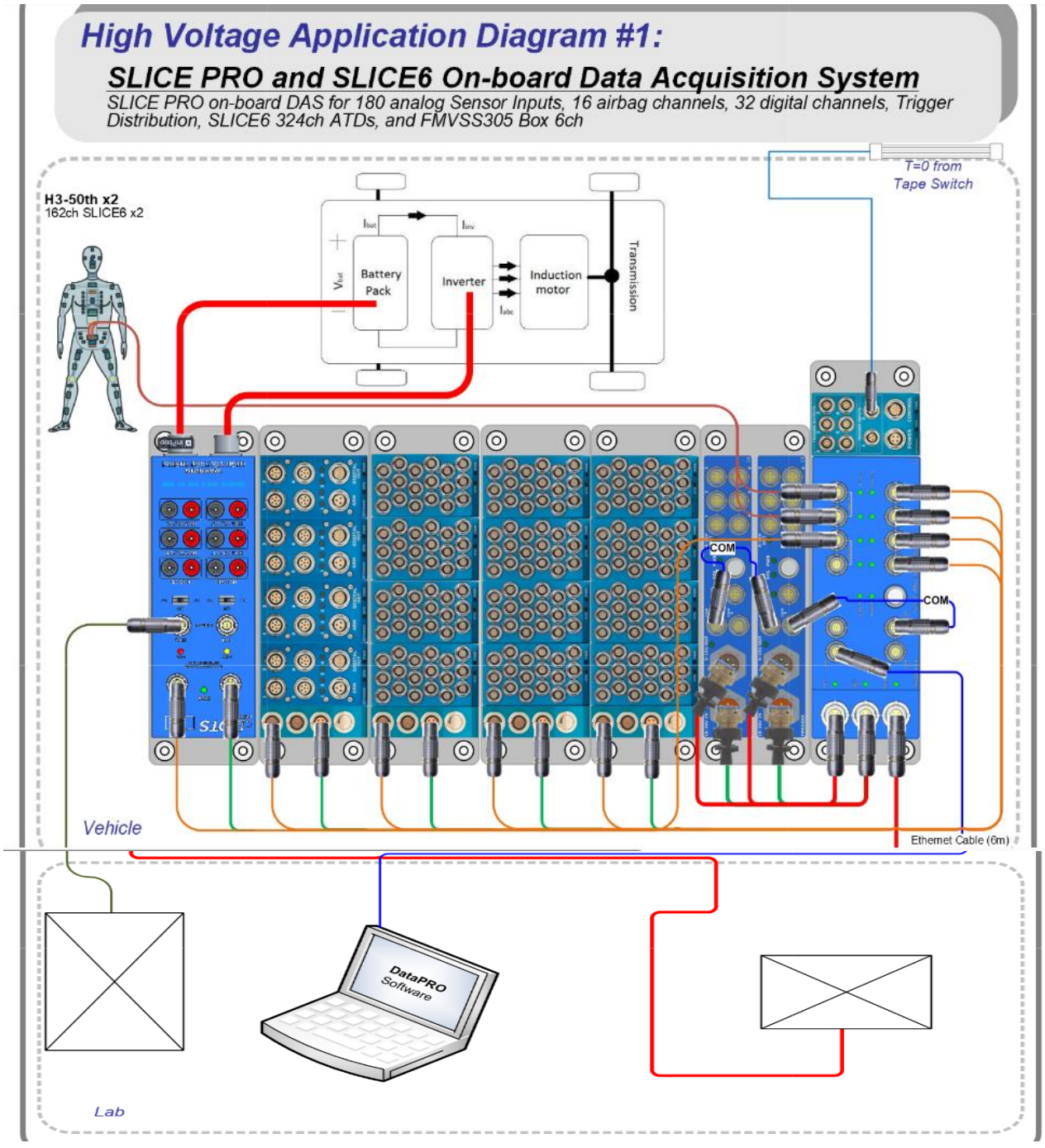
DTS recommends that you use the equipment and cables we supply to ensure compatibility and performance. See below for a list of available cables or contact your DTS representative.

Description	DTS Cable Part Number
SLICE PRO Baseplate Kit for Ethernet Controller + 4 SIMs (includes baseplate and 10 screws (SHC, 18-8; M6 x 10 mm))	13000-40360
Conn, 4-position socket (female), 13 A high voltage (High Voltage Input mating connector; Amp P/N GTC06R18-4S-025) (strain relief not included)	80000-03101-R
Cable, SYSTEM port to COM port + POWER port (CPY)	10600-0003x[4]

[4] x = multiple lengths available

Application Example

Vehicle Application



Revision History

Rev	Date	By	Description
0	21 Nov 2024	E. Kippen	Initial release.