# REAL-TIME LIGHT-GAS GUN CONTROL SYSTEM

for HYPER DYNAMIC MATERIAL TESTING

The muzzle velocity of a light-gas gun reaches up to 10 km/s (6mps). Catching the moment of impact with high-speed cameras and firing X-ray flashes is a challenging task for the test engineer. Supported by this special trigger prediction system, it's simple.

A single master control panel allows the engineer to handle multiple light-gas guns on one site. Therefore, each gas gun is equipped with multi-channel data acquisition and a control subsystem. Systems and the control panel are connected via a fiber optic cable to an optical matrix switch. Via software, the test engineer selects the gas gun to control for the next test.

- **Signal monitoring and display**
- **›200 measurement channels**
- **Symbiotic combination of analog inputs and digital control outputs**
- **Different input types from kS/s to GS/s**
  single ended / differential / isolated / sensor
- **Single system setup and control via modern touch screen technology**
- **Managed fiber based MULTI-ROOM acquisition and control**
- **Control of pressure & valves**
- **Interconnects to PLC e.g. lock**
- **Safety control reaction ‹10ns**
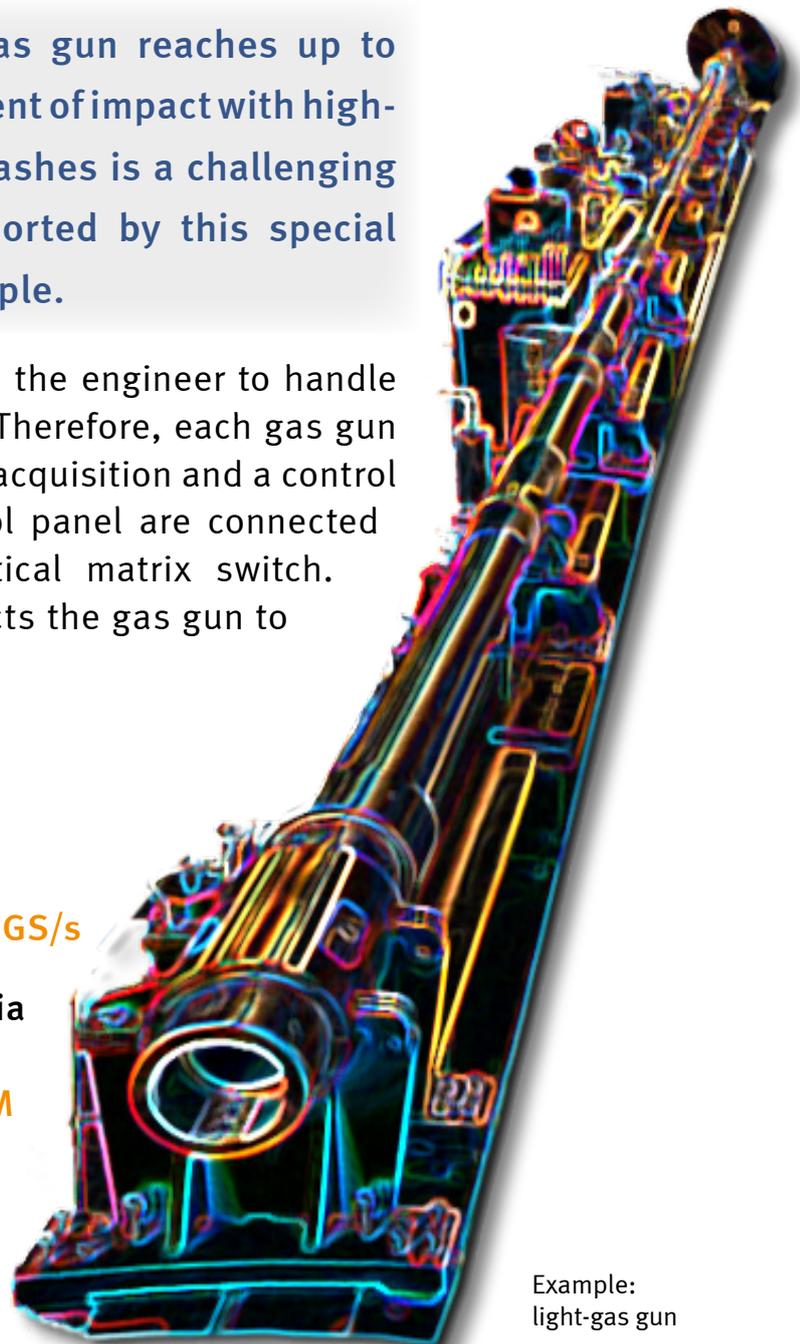
Example:
light-gas gun

HIGH-SPEED CAMERA TRIGGER SYSTEM

for HIGH ENERGY TEST LABS

The flexible high-speed camera trigger system for hypervelocity impact testing reliably and precisely triggers high-speed cameras and flashes for varying particle velocity.

The particle velocity is measured with 2-4 sensors and the moment of impact calculated at a specific distance in real-time. This way, the high-speed camera can be started μs before the expected impact, and a set of flashes can be fired in an accurately timed sequence, exactly coinciding with the moment of impact.

Raw sensor data and resulting digital control signals are measured internally and can be displayed and documented in the project archiving file system.

- **Trigger prediction in real-time**
  Calculation ‹20ns
  Prediction ‹‹μs
- **redundant 2-4 sensor velocity measurement**
- **›64 trigger output signals with individual delay settings**
- **Different types of output**
  electrical / fiber optical signaling / relay
- **Modern configuration and control**
- **Customer specific GUI**
- **Symbiotic combination of analog inputs and digital control outputs**
- **Sensor and control signal logging**
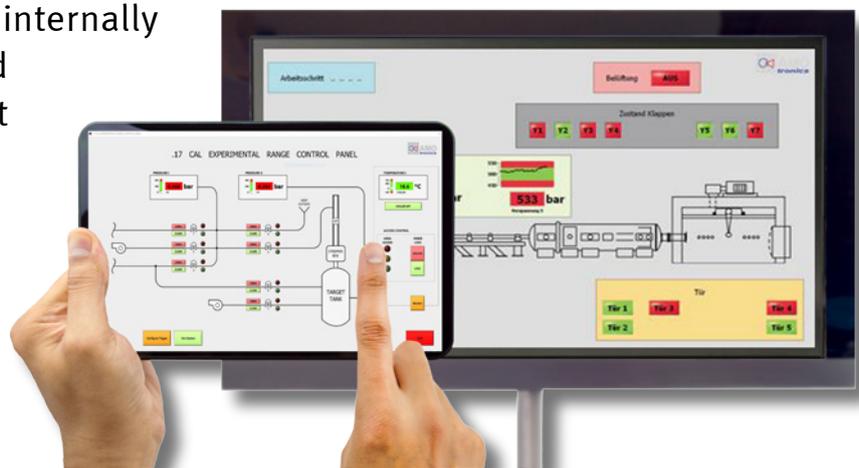
Example: The easy-to-use configuration software allows users to define distance and individual pre-trigger or delay settings for multiple output signals. PC based master control and slave display screens share required information and grant control to predesignated users only.