IDEC

Think Automation and beyond...

Product Guide

For your Application

Value Creation Process

As a part of efforts to support the future of manufacturing and daily life, IDEC creates value through products that provide safety. At the same time, the Company undertakes a wide range of activities in a bid to resolve societal challenges.

Societal Challenges

Growing shortage of labor
Further aging of society
Frequent occurrence of industrial accidents
Onset of global warming
Decline in food self-sufficiency ratio

Core Competencies

Safety Technology and Products

Leveraging our longstanding knowledge to ensure a high level of safety

High Quality

Reliable quality backed by our technical capabilities

Research & Development   Procurement   Manufacturing

Automation

Products and solutions that enable automation and labor savings

HMI Solutions

Providing optimal solutions tailored to customer needs

Our Value in Action

Automotive

Elevators

Material Handling

Output

—Creating value for society—

Development and increased use of safe products
Providing collaborative robot systems
Developing IoT-compatible products
Designing environmentally-friendly products
Helping industrialize agriculture

Outcome

—Resolving societal challenges—

Increasing productivity and efficiency
Realizing safety
Ensuring a smaller environmental footprint

Machine Tools

Robot Systems

Special Vehicles

Think Automation and beyond...

We make the point of contact, where people interface with machines, easy, safe and secure. We create new possibilities.

One of our corporate principles is to conduct business with consideration for social contribution. Since its founding, IDEC has developed and introduced the world to numerous products and services centered on its control technology. Today, our products are used not only in factories, but in a wide range of settings in people's everyday lives where customers desire safety, ease of use, reliability and a smaller environmental footprint.

Having celebrated its 70th anniversary in March of 2017, the IDEC Group will continue to brighten the future of manufacturing and people's lives as it moves into the centennial of its existence and beyond.

Europe and Others

Sales bases: **9**
Manufacturing base: **7**
No. of employees: **1,013**

- ●●● APEM SAS (France)
- ●●● APEM Components Ltd (UK)
- ●●● MEC A/S (Denmark)
- ●●● APEM Italia Srl (Italy)
- ● IDEC Elektrotechnik GmbH (Germany)
- ● APEM AB (Sweden)
- ● APEM Gmbh (Germany)
- ● APEM Benelux (Belgium)
- ● APEM BV (The Netherlands)
- ● SACEMA (Tunisia)   Two other bases

Americas

Sales bases: **2**
Manufacturing base: **1**
No. of employees: **233**

- ● IDEC CORPORATION (USA)
- ●●● APEM Inc. (USA)

Greater China

Sales base: **9**
Manufacturing base: **6**
No. of employees: **1,501**

- IDEC (SHANGHAI) CORPORATION (PRC)
- IDEC (SHENZHEN) CORPORATION (PRC)
- IDEC (BEIJING) CORPORATION (PRC)
- IDEC TAIWAN CORPORATION (Taiwan)
- IDEC IZUMI (H.K.) CO., LTD. (Hong Kong)
- APEM Wujin Electronics Co. Ltd (PRC)
- APEM Ltd (PRC)
- TAICANG CONET ELECTRONICS CO., LTD. (PRC)
- CONET TAIWAN CO., LTD. (Taiwan)
- IDEC ELECTRONICS TECHNOLOGY (SHANGHAI) CORPORATION (PRC)
- IDEC IZUMI SUZHOU CO., LTD. (PRC)
- IDEC IZUMI TAIWAN CORPORATION (Taiwan)

Japan

Sales base: **4**
Manufacturing base: **3**
No. of employees: **972**

- IDEC CORPORATION
- IDEC FACTORY SOLUTIONS CORPORATION
- IIDEC SYSTEMS & CONTROLS CORPORATION
- IDEC AUTO-ID SOLUTIONS CORPORATION
- IDEC LOGISTICS SERVICE CORPORATION

Asia Pacific

Sales base: **3**
Manufacturing base: **1**
No. of employees: **193**

- IDEC IZUMI ASIA PTE LTD. (Singapore)
- IDEC Australia Pty. Ltd. (Australia)
- IDEC ASIA (THAILAND) CO., LTD. (Thailand)

- Sales
- Development
- Manufacturing

Asia Pacific

IDEC presence in Asia Pacific

Since 1976, IDEC has served the competitive, fast-growing Asia Pacific market by providing the very best products and services that satisfy the demanding market needs. Today we are proud that our products are used in a wide range of industry and application, from manufacturing sites to people's everyday lives.

Providing key products to the region's growth

Corporations from all over the world have entered the emerging countries in the Asia Pacific region, and continued growth is expected in broad industries. Following "IDEC's local production for local consumption" philosophy, IDEC established a subsidiary in Thailand in 2013 that produces and sell products for the customers in the region.

Combining products and education to meet growing safety needs

As the economy has grown in Asia Pacific, interest in workplace safety has increased and manufacturers are installing more and more safety devices in their manufacturing plants. IDEC continues to promote safety awareness in working environments to protect operators and machines from accidents, with our safety products such as emergency stop switches, enabling devices, controllers, interlock switches and laser scanners.

Asia Pacific Regional Headquarter in Singapore

In 2017, IDEC Izumi Asia Pte Ltd. was designated as Asia Pacific regional headquarter. By streamlining operations, we will serve our customers with our best products and services with enhanced efficiency and flexibility.

● **IDEC THAILAND**

● **IDEC IZUMI ASIA**

IDEC IZUMI ASIA PTE LTD.

Address: No. 31, Tannery Lane, #05-01,
          HB Centre 2, Singapore 347788
Tel: 65-6746-1155
Fax: 65-6844-5995
Email: info@sg.idec.com
Website: http://asia.idec.com

IDEC Asia (THAILAND) CO., LTD.

Address: 20th Fl., Sorachai Bldg., No.23/78,
          Soi Sukhumvit 63, Sukhumvit Rd.,
          Klongton-Nua, Wattana, Bangkok 10110
Tel: 66-2-392-9765
Fax: 66-2-392-9768
Email: sales@th.idec.com
Website: http://asia.idec.com

● **IDEC AUSTRALIA**

IDEC Australia Pty. Ltd.

Address: 17 / 104 Ferntree Gully Road
          Oakleigh, Victoria 3166 Australia
Tel: 61-3-8523-5900
Fax: 61-3-8523-5999
E-mail: sales@au.idec.com
Website: http://asia.idec.com

Corporate Data

IDEC CORPORATION

Established: March 26, 1947
Capital stock: US$89,631,062,14
No. of employees: 3,911 (on a consolidated basis as of March 31, 2017),
                  excluding contract and temporary employees
Stock listing: First section, Tokyo Stock Exchange
Head office: 2-6-64, Nishi-Miyahara, Yodogawa-ku,
                 Osaka 532-0004 Japan
                 Tel: +81-6-6398-2500 (main number)
Tokyo head office: 2-15-1, Konan, Minato-ku, Tokyo 108-6014 Japan
                 Tel: +81-3-5782-7690 (main number)

Human–Machine Interface

Switches

Flush Silhouette Switches

LB/LBW [bezel]
ø18.2 ø22
□18.2 □22
ø22.3 ø26
□22.5 □26

Photo: LBW

LB series: Slim 2mm-thick bezels for stylish panels. Bezel size ø22/□22 mm (panel cut-out ø18.2/□18.2 mm). LBW series: Projects only 2mm from the panel. Smart appearance with large surface for secure operation.

CW [bezel]
ø22 ø30

Flush bezel projecting only 2.5 mm from panel front, with short, 39.9 mm depth behind the panel. Third-generation safety structure.

LW [bezel]
ø25.3 ø28
□24.5 □28

Create stylish panel with flush bezels projecting only 2.0 mm from panel front. Easy to install/remove, and ideal for panels that require cleanliness and safety.

Switches/Pilot Lights

LB ø16

Only 27.9 mm panel depth. Removable contact blocks ideal for single board mounting. Pushbuttons, selector switches, and key selector switches available with up to 3PDT contacts.

A6 ø16

Light duty with 30 mm panel depth (body length: 22 mm). Suitable for a wide variety of office and factory applications.

Switches/Pilot Lights

YW ø22

Compact, lightweight, 10 mm thick contact blocks with removable operator. Separate contact block makes installation and removable easy.

HW ø22

True classic of removable contact block model. A wide variety of types available, including pilot lights with short depth suitable for distribution panel and control panel.

TW ø22

Heavy-duty ø22 switches that can withstand harsh environment.

TWS ø25

Highly reliable, heavy-duty ø25 switches suitable for industrial use.
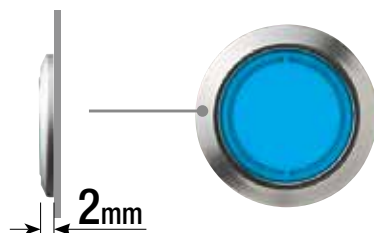
TWN/TWND ø30

Photo: TWND

IP20 contact block with integrated terminal cover and captive spring-up terminals. Blue (NO) or reddish purple (NC) contact blocks for easy visual identification. Snap-fit installation/easy removal.

Stylish & refined panels

Flush Silhouette Switches LB/LBW

Flush bezel projects only 2 mm from front of panel.
Short depth behind the panel—34.9 mm.

2mm

Universal contact blocks

ø30 TWN/TWND

Since 1958, IDEC has been relentlessly developing the control switches that provide high level of safety and operability.

Universal contact blocks are installed on:

ø22 TW*   ø22 HW*   ø25 TWS*   ø30 TWND   ø30 TWN

* Scheduled late 2017.

Pilot Lights/Buzzers/Control Boxes

Switches/Pilot Lights
MA/MC

Square-, rectangular-, and round-body miniature control units.
MC: removable contact blocks for easy mounting.
MA: Compact and space-saving (unibody: 22 mm).

Miniature Pilot Lights
AP/UP

AP: ø8/10/12/16 space-saving miniature style.
UP: ø6/7/8/9/10, available in various sizes and design.

AP6S

Short body with high voltage BA9S base LED lamp (100V AC/DC, 200V AC/DC). Round, square, rectangular, and dome style.

AP22

Outstanding visibility even in sunlight, ideal for alerting personnel of danger. High visibility from all directions, and is not susceptible to external scattered light.

Display Lights
SLC

Compact and highly bright combination display lights. Fingersafe spring-up terminals reduce wiring and labor.

Surface Mount Indicators
LH

Innovative indicators with IP67 protection. Directly mountable on equipment and aluminum frames.

Illuminated Buzzer
HW1Z

Waterproof combination buzzer and pilot light. Meets the requirement of the revised elevator standard EN81-20/50.

Control Boxes
FB

IP65 lightweight plastic enclosures for installing ø22 switches. Available with HW series switches and pilot lights, and XW series emergency stop switches.

AG/KG

A wide selection to choose from:
AG series: IP65/splash-proof, aluminum alloy die-cast
KG series: IP40/enclosed

Panel Solutions

Products inside Panel

Relays

RJ

Compact and rugged power relays. Large contact ratings.

RU

Full featured, environment-friendly universal miniature relays. No lead ore cadmium used.

RF2

2-pole force guided relay to reduce cost and installation space. Two terminal styles - socket mounting and PC board mounting.

RL

This power relay ensures stable operation even when voltage drops momentarily. Single pole rated at 30A, double pole at 25A.

RV8H

Ultra-slim, 6mm-wide interface relays suitable for high density mounting. Screw and spring clamp terminals. Release lever for easy locking and removal of relay.

Sockets

SJ

Slim and space-saving sockets with marking plate for RJ and RF2.

DF

This finger-safe socket accepts the same marking plates as the RU series relays, allowing for easy identification of circuits.

SR/SH/SM/SY/SU

DIN rail mount (standard, finger-safe, slim, spring-clamp), panel mount (solder, wire-wrap), and PC board mount.

Timer

GT3

Solid-state CMOS circuitry ensures high accuracy. Various operation modes available, such as off delay and star-delta.

GE1A

Two different time ranges to cover a wide time range. Large clear knob for easy time range setting. ON Delay function, highly precise time control, instant monitoring of operation status by LED indicators.

Slim & Space-saving

Interface Relays `RV8H`

Space-saving 6 mm width suitable for high density mounting inside control panels.

Marking plate can be installed on the release lever.

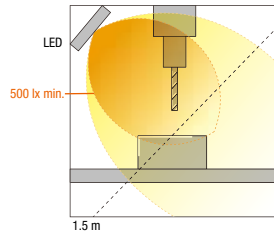Only 70 mm from the DIN rail. Shortest in its class.

Slim width: 6 mm

For Lighting Machine Tools

LED Illuminating Unit `LF1D/LF2D`

Ideal for machine tools and other industrial machines. Uniform light distribution brightly lights objects and machine tool tips, making visual checks easy.

LED

500 lx min.

1.5 m

Products inside Panel/Equipment

Switching Power Supplies

PS5R-V

Space-saving DIN-rail switching power supplies. Can be installed in six mounting directions.

PS6R

High-power and space-saving switching power supplies. 93% efficiency reduces running costs.

PS3X

Universal AC input voltage. Wide power range: 10W, 25W, 50W, 75W, 100W. Compliant with international standards.

Circuit Protectors

NC1V

IDEC's unique spring-up, fingersafe terminals reduce wiring and labor.

NH/NR

Wide range of applications from office automation and consumer use to factory automation.

Terminal Blocks

BN1U/BN-W/BNH-W

UL, CSA, TÜV approved. Available in a variety of constructions, such as spring-up screw, self-lifting, and touch-down constructions.

BY1K/BY1S

BY1K: Screw clamp. Mounting space reduced by 50%. Available with standard and ground terminal blocks. BY1S: Spring clamp. Easy wiring with just one screwdriver reduces wiring and labor.

LED Illumination Units

LF2B

Universal AC input for worldwide applications. Thin and slim profiles allow for installation in wide applications and in space-limited areas.

LF1B-N

Thin and slim profiles with IP65 protection (waterproof, dust-proof). Ideal for applications subject to water and in space-limited areas.

LF1D/2D

Rugged construction with robust housing of aluminum diecast, stainless steel, and reinforced glass. IP67F protection.

Automation Solutions

PLC/Controller/Operator Interface

PLC/Controller

FC6A

A maximum of 528-I/O, fast basic instruction execution of 42 ns. 28 types of expansion modules, various options, Web Server and Email functions available.

FT1A Pro/Lite

10A relay outputs, Ethernet, SD memory card, USB embedded. Independent dual-axis control and multistage control available.

3.8 inch **FT1A Touch**

Built-in LCD enables control and display with high visibility.

IDEC SmartRelay

FL1F

Equipped with convenience and high functionality. Multiple power supply variations.

Teaching Pendants

HG1H/HG1T

Designed to be held in one hand. Features IDEC's 3-position enabling switch and emergency stop switch. Mechanical switches such as pushbutton/key selector switches mountable.

Operator Interface

12.1 inch **HG4G**

Compact housing with a versatile interface. High performance operator interface with multimedia functions.

10.4 inch **HG3G**
8.4 inch

Excellent visibility by super-bright LED backlight. 700 cd/m² (10.4-inch), 600 cd/m² (8.4-inch).

5.7 inch **HG2G**

Excellent visibility of 800 cd/m² with highly bright LED backlight. Withstands harsh environments, and suitable for use in a wide temperature range from cold to hot environment.

4.3 inch **HG1G**

Bright and true-to-life display. Quick 1.5-sec startup, and suitable for use in environments with wide temperature range, and also powerful water jets or temporary submersion in water.

4.6 inch **HG1F**

4.6-inch STN monochrome LCD. Clear legible display of 300 × 100 pixels.

PLC for IoT Era

MICROSmart **FC6A**

Equipped with USB, Ethernet, SD memory card, and CAN J1939 interface in its compact size, FC6A programmable logic controller is best suited to the new era of IoT. Monitor and control the production sites most effectively and simply.
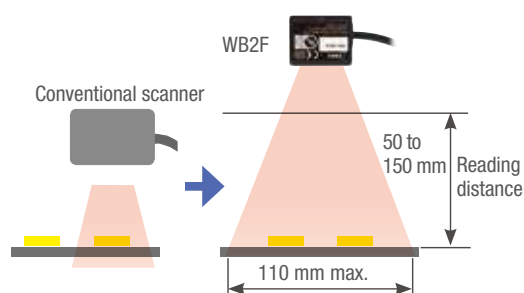
Flexible setup, mounting, and operation

2D Code Scanner **WB2F**

Smallest in its class. Reads micro symbols in a wide area from a distance of 150 mm.

WB2F

Conventional scanner

50 to 150 mm | Reading distance

110 mm max.

Photoelelectic Switches

SA1E

Simple, compact design for world-wide usage with six sensing methods.

SA1E-L

Class 1 laser with fastest response in its class. Reliably detects fast-moving objects.

SA1E-X

Coaxial optical structure and narrow beam ensure stable detection; unaffected by constriction, inclination or shaking of a bottle.

SA1U

Universal voltage types operate on 24-240V AC and 12-240V DC. DC power types operate on 12-24V DC. Four sensing methods (through-beam, polarized retroreflective, diffuse-reflective, and background suppression).
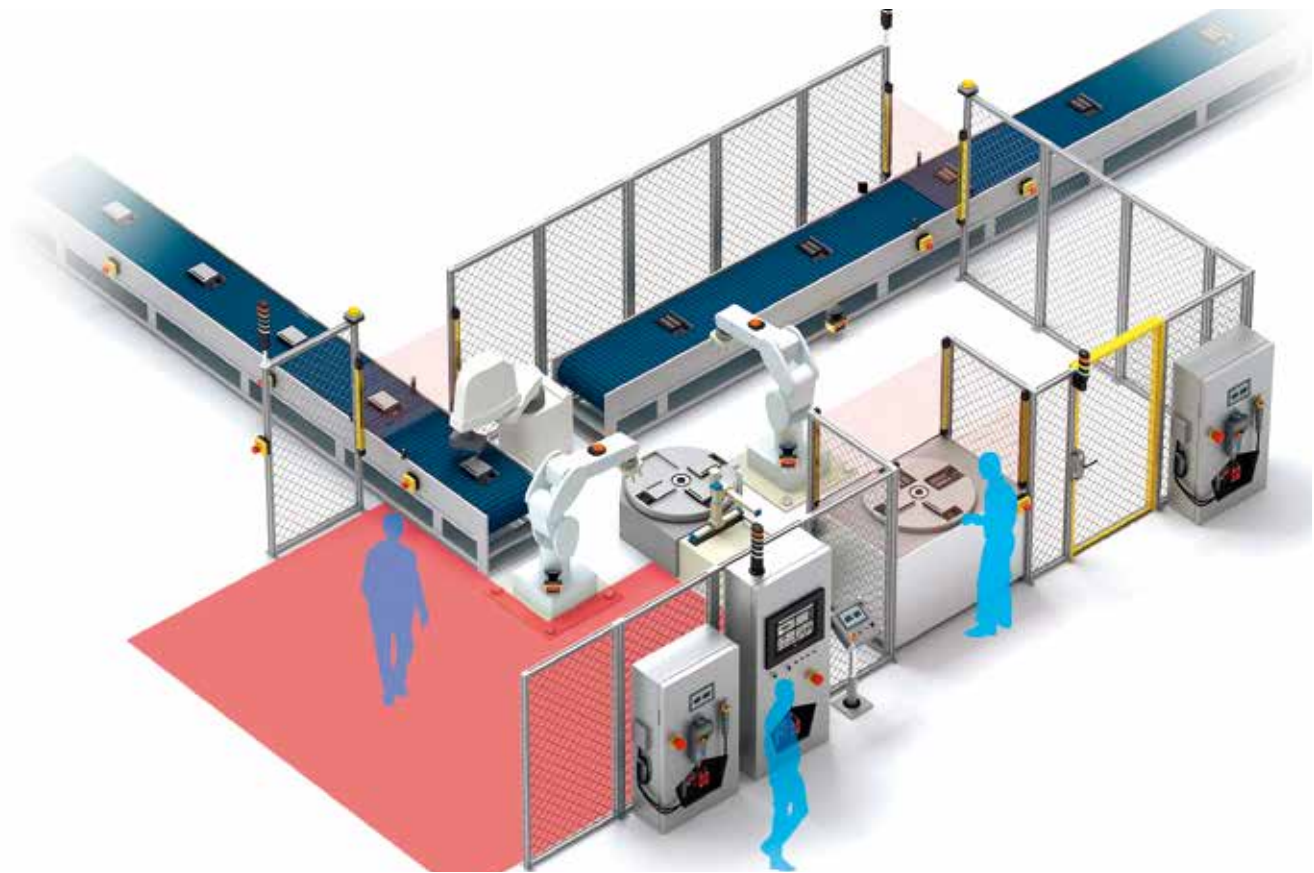
Code Scanner

WB1F

1D CCD scanner with convenient modes, such as test mode. Compact and can be installed on small equipment.

WB2F

Small, flexible and reliable 2D code scanner. Up to 150 mm long reading distance. High-resolution sensor to read small symbols in a wide area.

Safety Solutions

Emergency Stop Switches/Interlock Switches

Emergency Stop Switches

ø16 X6

Third-generation emergency stop switch with Reverse Energy Structure. Smallest in its class; only 19.5 mm depth behind the panel.

ø16 XA

Safety lock mechanism and direct opening action. Removable contact block and unibody models. Suitable for installing in space-limited applications.

ø22 XW

Innovative Safe Break Action installed. A wide variety of models to choose from, including mechanical indicator and SEMI Emergency Off (EMO).

ø30 XN

Padlockable, flush bezel, 60 mm jumbo mushroom, illuminated, and LED push-on are available.

FB

IP65 lightweight, yellow plastic enclosures for installing emergency stop switch.

Interlock Switches

HS5L

Interlock switch with solenoid. 2-contact: ideal for use on applications such as food machines and injection molding machines. 4-contact: ideal for use on limited mounting spaces such as small doors.

HS5D

Head removable detection function provides higher level of safety.

HS1L

3000N locking strength. Suitable for large and heavy doors that require high locking strength.

HS6E/6B

HS6E: Small and thinnest solenoid interlock switch with five poles and solenoid. HS6B: World-class compactness with three poles of contacts.

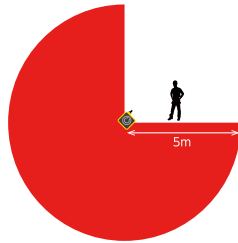## Non-contact Interlock Switches

HS7A

Compact size and easy positioning.

Distance 5m, wide sensing angle 270º

Safety Laser Scanner SE2L

By allowing only objects, not humans, enter dangerous areas, SE2L safety laser scanners ensure the safety of operators who are left in hazardous areas or those approaching the moving machines.

Distance 5 m
Sensing angle 270º
A maximum of 32 area patterns

5m

3-position enabling switches compliant with international standard

Enabling Switches HE

When faced with unexpected dangerous situation, an operator either releases or squeezes the device held in hand. By holding a device equipped with 3-position enabling switches, robot/machine operation is disabled, thus ensuring safety of operators.

Safety Products

Non-contact Interlock Switches
HS3A

RFID non-contact interlock switch, Category 4 and PLe compliant.

Actuators
Door Handle

Locks rattling doors smoothly and securely.

Slide Handle

Shock-resistant metal slide handle actuators ensure safety of operators.

Grip Style Enabling Switches
HE2G

Small, lightweight grip style enabling switches with 3-position enabling switch embedded.

Safety Light Curtains
SE4D

Robust safety light curtains with advanced and easy-to-use functionality.

Safety Controllers
FS1A

No programming required—just turn on a logic switch to complete configuration of a safety circuit. Pre-programmed logics are compliant with international standards.

Safety Relay Modules
HR

Compact design and easy maintenance for easy-to-use operation.

Force-guided Relays
RF2

2-pole force guided relay to reduce cost and installation space. Two terminal styles: socket mounting and PC board mounting.

RF1

Compact and EN compliant force guided relays. Contact configuration can be selected: Built-in LED indicator model and counter-electromotive force diode model are available.

SignaLight Towers
LD6A

Design meets functionality. Stylish oval shape with striped design for clear visibility.

Explosion-proof Solutions

Explosion-proof Products

Relay Barriers

EB3C

Input contacts can be used in any explosive gas and Zone 0 areas.

EB3L

126 types of pilot lights and buzzers can be connected for use in any explosive gas and Zone 0 areas. Illuminated pushbuttons and illuminates selector switches can be connected by combining with the EB3C.

EB3N

Explosion protection: [Exia] II C. Ideal for establishing a safety system in an explosive atmosphere. ISO 13849-1 (PLe, Cat4) approved.

Frameproof LED

EF1A

Can be used in hazardous area of Zone 1 and 2, where hydrogen or acetylene gas is present.

Operator Interface w/Touch Panel

EX4R

Intrinsically safe, frameproof operator interface with touch panel. Display is easy to see in even bright locations. Can be used in Zone 1 or 2 hazardous area where hydrogen exists. (Availability depends on the area. Contact IDEC for details.)

Operator Interface

EX1R-D3

Frameproof operator interface which can be used in Zone 1 or 2 hazardous area, equipped with a 10.4-inch HG3G operator interface. (Availability depends on the area. Contact IDEC for details.)

Flameproof LED Illumination Units

Hazardous location lighting for use in areas where explosive gases and combustible dusts exist.

Ex d IIB T4 Gb / Ex tb IIIC T130° Db

Can be used in hazardous areas of Zone 1 and 2. Heavy-duty aluminium housing with reinforced glass. Narrow-angle and wide-angle beam models available, with clear or translucent lenses.

EF1A

Ideal for use in Europe and South-east Asia

Frameproof & Increased Safety Control Boxes

EC2B

ATEX directive compliant control boxes. Corrosion-resistant stainless steel enclosure. Applicable in areas where explosive gases exist including hydrogen and acetylene.

Explosion-proof Products

Control Boxes

EC2A

Applicable for any explosive gas in Zone 1 and 2 areas. Stainless steel plate enclosure with high corrosion resistance.

EC1A

Frameproof control box extremely lightweight in aluminum alloy enclosure.

EC2B

ATEX directive compliant control boxes ideal for use in Europe and south-east Asia. Corrosion resistant stainless steel enclosure.

Control Units

EU2B

Pilot lights, pushbuttons, selector switches, and emergency switches for flameproof and increased safety control boxes.

Grip Style Enabling Switches

HE2G-X

Inherently safe grip style enabling switches that can be used in explosive atmosphere, such as paint plant. (Availability depends on the area. Contact IDEC for details.)

Core Competence

Automotive

In the production lines of automotive and automotive parts industry, productivity and safety must be achieved while meeting the user's various needs. IDEC has the products and solutions that best match each requirement.

- Minimize maintenance time and labor
- Improve accuracy of visual check with LED illumination
- Improve the performance of door interlock switches
- Achieve traceability
- Provide reliable explosion protection to hydrogen stations
- Improve visibility and reduce maintenance time and labor

Machine Tools

Miniaturization of machines, compliance to safety standards, and improved maintainability are required in machine tool industry. IDEC helps you solve your issues with our wide range of products and solutions.

- Reduce the size of machine tools
- Excellent design
- Reduce cost and labor needed for replacing relays
- Optimize LED lighting to illuminate work objects
- Prevent momentary stops of machine
- Check the surface of work objects with even LED illumination

Semiconductor

Semiconductor industry requires smaller footprint and higher throughput. IDEC products help reduce labor, wiring, installation space, and maintenance cost/labor with our expertise and experience.

- Add flexible design to semiconductor manufacturing machines
- Upgrade traceability performance while reducing cost
- Replace switches quickly in order to minimize downtime
- Reduce downtime for lighting replacement by 80%
- Reduce the size of semiconductor manufacturing equipment with the thinnest door interlock switch in its class

Food Machine

As safety and quality of foods have attracted more attention, there is a change in the trend/needs for food processing machines. Our products developed with cutting-edge technology solves your issues in food processing lines.

- Eliminate external controllers
- Create the new standard of compact operator interface
- Reduce the labor required to install products in cold environment
- Replace multiple control products with an HMI-integrated controller
- Improve safety and operability of control boxes

Material Handling

Material handling is all about automatizing process lines and making them more efficient. Now the new values are required—they must move seamlessly without unwanted stops, and operators must be able to oversee the entire operation accurately in real-time. Backed by our latest technology, IDEC has the solutions to satisfy your needs.

- Eliminate the risk of possible injury in the ceilings
- Ensure safety of low-floor automated guided vehicle
- Make up for the flaws of palletizing robots
- Reduce the risk of possible injury during maintenance work
- Maintain production efficiency and eliminate the risk of accidents

Elevators

Elevators, the vehicle often employed for public use, need to keep up with social trends and thus comply with standards/law, accordingly requiring new technologies. IDEC has products and solutions to help you comply with new elevator standards.

- Enhance elevator safety to avoid the potential business risk
- Prevent operational error and physical accidents at the time of inspection
- Employ remote monitoring to eliminate unnecessary maintenance work
- Provide simple solutions to prevent collision between the car and human
- Eliminate accidents caused by hoist malfunction

Transportation and Logistics

The more logistics is globalized, the more efficient and safer system is required. Our cutting-edge technology gives you solutions that provide both safety and productivity.

- Improve productivity with automated logistics system
- Establish collaborative safety where human and robots work adjacently
- Improve operability with ergonomics-based design

Special Vehicles

Vehicles for special purposes need specialized operability and safety to satisfy each needs. With APEM products joining our family of products, IDEC provides you with more variety of HMI products to suit specific applications.

- Improve operability with ergonomics-based design
- Design user-friendly interfaces that allow anyone to operate safely
- Meet strict environmental and durability requirements

Robotics

Production lines are increasingly employing collaborative robots to establish working environment where human and machines work in a collaborative manner. With products compliant with safety standards and collaborative safety solution, IDEC makes the ideal collaborative environment come true.

- Ensure safety of collaborative robots
- Solve labor shortage with collaborative safety robot system
- Establish new collaborative robot interface

New Businesses

Create new value. Help solve issues.

Fine Bubbles

Create new industries

As a world leader of fine bubble generation technology, we create new industries. Fine bubbles are finding their applications in a broad range of fields—not only cleaning, but also accelerating the growth of plants in agriculture and marine products in fishery—just to name a few.

▌Leading creation of international standards

GaLF series is a manifestation of IDEC's unique pressurized dissolution method to generate fine bubbles, applicable to a wide range of applications from compact, desk-top model for laboratory experiment to high-flow industrial usage. We are a founding member of FBIA (Fine Bubble Industries Association), which promotes international standardization and industrialization of fine bubble to create fine bubble market. In spring 2017, the first ISO standard of fine bubble technology was issued. Potential effect and wide application are expected with fine bubble.

ultrafine **GaLF**

agri **GaLF**

- Quality Cleaning
- Plant Cultivation
- Keeping Food Fresh

Agriculture

Automate agriculture

With experience and technologies in control, fine bubble, and manufacturing, we are a reliable provider of total solutions to the agriculture of next generation. IDEC encourages more entities to enter the new market by proving that agriculture can be profitable.

▌Next-generation agricultural plant

We offer a comprehensive support service of the next-generation, solar-combined agriculture plant from designing, construction, cultivation advice, to marketing. By automatically controlling plant growth factors such as the temperature in greenhouses, amount of light, CO_2 concentration, and watering amount, we contribute to save energy and increase production. Our goal is to achieve profitable agriculture, by maintaining stabilized yield amount and increasing sales with fine bubble technology.

- High Profitability
- Stable Production
- Energy Saving

Eco Solutions

Leverage natural energy

IDEC designs the best lighting plan for your plant, warehouse, commercial facility, and special environment. Our comprehensive, one-stop service in solar power generation system excels in generation efficiency and convenience in installation. Count on us to utilize the next-generation energy.

▌Energy Management

HEMS

▌LED Lighting

▌Engineering

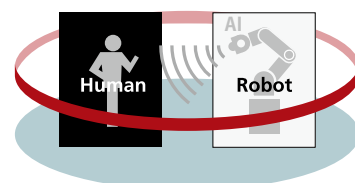- Energy Utilization
- Optimized Lighting
- O&M

Collaborative Safety Robot System

Lead human-robot collaborative safety

With knowledge and experience built up over the years, IDEC also as a reliable system integrator assists you create a collaborative safety environment. We make sure that neither productivity nor safety is uncompromised.

▌Collaborative Robot System

Human   Robot

- Robot Control Technology
- Peripherals Technology
- Safety Technology

YOUR PARTNER & EXPERT IN HMI PRODUCTS

Providing safety and security to Human Machine Interface

In March 2017, IDEC celebrated our 70th anniversary since foundation. And to concide with the event, we welcomed APEM Group, a French manufacturer of HMI products, to IDEC Group. APEM has a history of 65 years in industrial switches, joysticks, keyboards and other HMI products for markets such as construction, agriculture, specialty vehicles, aerospace, and defense. By leveraging respective product offerings and geographical presence, the IDEC Group will further increase its dynamic strengths, diversity, flexibility, efficiency and all essential aspects required to better serve our customers around the world.

A WORLD OF SWITCHING CAPABILITIES

APEM Products

PANEL SWITCHES

TOGGLE SWITCHES

Robust construction for use in harsh environment. Pinned lever as standard, preventing internal damage to the contact arm and mechanism.

PUSHBUTTONS

Excellent visibility. Large choice of options in color, shape, marking and illumination.

High reliability and performance. Military grade CECC 96401-0001 approval.

Robust construction to withstand aggressive use made with metal material.

ROCKER SWITCHES

Proven reliability. Modern appearance and intuitive ergonomics for easy one-hand operation.

PCB SWITCHES

TACTILE SWITCHES

High performance model. 10 million trouble-free actuators.

LED INDICATORS

Unlimited design possibilities. Super bright LEDs for good visibility even in bright daylight.

JOYSTICKS

Precision fingertip control. Ergonomically designed for repetitive operation over extended periods.

Multi-function hand grip control. Ergonomics and versatile design for safety critical applications.

CUSTOM

Custom products co-developed with customers. Switches, membrane keypads, and CAN bus connectivity.

UNLIMITED HMI COMBINATIONS

COMPLETE INTERFACE SOLUTIONS

ELECTRONIC & SOFTWARE DESIGN

Interface Solutions

Combines switches, pilot lights, joysticks, switch panels and other components with standard electronic boards and programming.

MARSHAL ELECTRICAL & METAL PRODUCTS CO. LTD.

Philippine Distributor:

Marshal Electrical and Metal Products Co. Ltd

216 P. Dela Cruz St., San Bartolome,

Novaliches, Quezon City

Metro Manila , Philippines 1100

tel: 936-1965

fax: 936-3280

email: sales.idec.memp@gmail.com

website: WWW.MARSHALELECTRICAL.COM

IDEC CORPORATION   💻 **www.asia.idec.com**

EP1643-0-A OCTOBER 2017

IDEC