EAPL
Products Catalogue 2010-11

Electronic Timers | Tachometers | Digital Counters | Digital Temperature Controllers | Time Switch | Phase Monitoring Device
Power Supply Modules | Programmable Annunciator | Energy Management System | Hour Meter

Change, is the only static element in the ever changing world

Well this says, why we are successful today and we happen to be the most sought after brand amongst the varied choices available in the automation market.

Over the years we have made 'change' a milestone to be achieved in every aspect of our automated world. In a world were automation and innovation go hand in hand, we make sure that we periodically improvise our products so that our clients receive the best.

Our journey to success has come with feathers on our cap…
ISO 9001standards, UL (US) certification & National award for the outstanding manufacturer has been achieved after covering the whole country and our presence was felt in the global market..

EAPL sets its standards much higher than merely targeting at its sales figures. We strive to deliver quality products on time and give life long services. This not only builds the rapport with our customers, but also gives a human face to our company through its dealer network.

Our company utilizes an array of tool centers for quality control such as Government approved design house and software centers. Automated testing rules out the possibilities of man made errors in calibration and measurement.

EAPL Products for the Elite Clients

Some of the latest in SMD technology are Timers, Tachometers, Counters, Temperature controllers, Time switches, Phase monitoring device, Power supply modules, Annunciators and A RANGE OF ENERGY METERS WITH SOFTWARE are amongst the 100 products adoring the EAPL tag.

We are proud to showcase our clients, who are top consultants and firms including M/S EIL Delhi, M/s BHEL and DGQA for defense applications.

"Offering the best Quality products & Faster delivery to Customers is our motto"

A 5255 **UL** REGISTERED FIRM ISO 9001-2008

Approved by

पावरग्रिड

DGQA
सुरक्षा से विकास

NICCON
ISO 9001 Company

NUCLEAR POWER CORPORATION OF INDIA LIMITED

सेल SAIL

ABB

ENGINEERS INDIA LIMITED
(A Govt. Of India Undertaking)

NLC

बी एच ई एल
BHEL

Award for Business Excellence

ELCINA
- DUN & BRADSTREET

D&B
Decide with Confidence

■ Features

- Din sized enclosure for Track / Screw mounting
- Front terminal protective cover for safety
- LED indication for timing in progress
- Time delay selectable in 4 ranges except A1D1(SR), A1D1(WB), A1DH-1 & A1DN-X (CSA)
- A1DA - External potential free command contact for timing initiation
- A1DS - Transfer time delay of 40m Secs / 100m Secs (Selectable)
- A1DN - X (CSA) 20m Secs (Factory set)
- **Dimensions: 22.5 x 75 x 102mm (W x H x D)**

Ordering Information

Model	Function	Source Voltage	Time Range	Output	CSA Approved	CE Approved
A1D1(CSA)	On-Delay	240V AC	0.3 Secs to 30 Mins	2 c/o Relay	✓	✓
A1D1-X (CSA)	On-Delay	X-Version	0.3 Secs to 30 Mins	2 c/o Relay	✓	✓
A1D1-X (60M)	On-Delay	X-Version	0.6 Secs to 60 Mins	2 c/o Relay	✓	✓
A1DE-X	Interval	X-Version	0.3 Secs to 30 Mins	2 c/o Relay	✓	✓
A1DN-X (CSA)	Auxiliary Relay Timer	X-Version	20m Secs	2 c/o Relay	✓	✓
A1DCS-X	Equal On-Off Cyclic	X-Version	0.6 Secs to 60 Mins	2 c/o Relay	✓	—
A1D1	On-Delay	8 V to 30 V DC	0.3 Secs to 30 Mins	2 c/o Relay	—	—
A1DA	Signal Off-Delay	240V AC / 110V AC	0.3 Secs to 30 Mins	1 c/o Relay	—	—
A1DS	Star-Delta Timer	240V AC / 110V AC	0.6 Secs to 60 Secs	1 c/o Star, 1 c/o Delta	—	—
A1D1 (SR)	On-Delay (Single Range)	12V DC	18 Secs to 180 Secs	2 c/o Relay	—	—
A1D1 (WB)	On-Delay (Wide Band)	266-456V AC	3 Secs to 30 Secs	1 c/o Relay	—	—
A1DH-1	Power Off-Delay	240V AC	18 Secs to 180 Secs	2 c/o Relay	—	—

X -Version: 24V AC to 240V AC & 24V DC to 220V DC, A1D1-X with higher time range are available on request.

■ Features

- Din sized enclosure for Track / Screw mounting

B1DCA-T

- Independently selectable ON and OFF time
- HOLD & RESTART facility during power fail conditions
- Program enable or disable facility for tamper proof operation

B1DS

- Transfer time delay of 40m Secs / 100m Secs user selectable
- **Dimensions: 45 x 75 x 116 mm (W x H x D)**

Ordering Information

Model	Function	Source Voltage	Time Range	Output
B1DCA-X	Cyclic Adjustable On-Off timer	X-Version	0.6 Secs to 60 Mins	2 c/o Relay
B1DCA-T	Cyclic Adjustable On-Off timer	240 VAC / 110 VAC	0.1 Secs to 10 Hrs	2 c/o Relay
B1DF	On-Delay with Instant Contact	240V AC / 110V AC	0.3 Secs to 30 Mins	1 c/o Relay 1 Instant
B1DH-Q	Power-Off Delay	110V AC / DC to 240V AC / 220V DC	6 Secs to 60 Secs	2 c/o Relay
B1DS	Star-Delta Timer	440V AC	6 Secs to 60 Secs	1 c/o Star, 1 c/o Delta

X-Version: 24V AC to 240V AC & 24V DC to 220V DC, B1DCA-T With higher time range are available on request

■ Features

- Din sized enclosure for Panel / Track / Screw mounting
- Front terminal protective cover for safety
- Knob lock to protect from unintentional change of time setting
- Large transparent knob for precise time setting
- Multifunction timer with ON delay / Interval / Equal cyclic ON / Equal cyclic OFF (H1D1-X, H3D1)

H1DA-X

- Accepts any voltage from 12V AC/DC to 240V AC / 220V DC as signal between command contacts for timing initiation
- **Dimensions: 48 x 48 x 94.5mm (W x H x D) (Screw Type)**
  48 x 48 x 94mm (W x H x D) (Plug-in Type)

Ordering Information

Model	Function	Source Voltage	Time Range	Output	CSA Approved
H1D1-X(CSA)	Multi-function timer (11 Pin) plug in type	X Version	0.3 Secs to 60 Mins	2 c/o Relay	✓
H3D1	Multi function timer (8 terminals) Screw type	X Version	0.3 Secs to 60 Mins	2 c/o Relay	–
H1DA-X	Signal Off Delay timer (11 pin) plug in type	X Version	0.6 Secs to 60 Mins	2 c/o Relay	✓
H1DT-10(CSA)	On Delay (11 Pin) plug in type	X Version	1 Secs to 10 Secs	2 c/o Relay	✓
H1DT-30(CSA)	On Delay (11 Pin) plug in type	X Version	3 Secs to 30 Secs	2 c/o Relay	✓
H1DT-60(CSA)	On Delay (11 Pin) plug in type	X Version	6 Secs to 60 Secs	2 c/o Relay	✓
H4DT-10	On Delay (8 pin) plug in type	X Version	1 Sec to 10 Secs	2 c/o Relay	–
H4DT-30	On Delay (8 pin) plug in type	X Version	3 Secs to 30 Secs	2 c/o Relay	–
H4DT-60	On Delay (8 pin) plug in type	X Version	6 Secs to 60 Secs	2 c/o Relay	–

Digital Timers

■ Features

- Din sized enclosure for panel mounting
- Digital dual display for set value and process value with external start signal
- Program enable & disable facility for range and time duration
- Hold / Restart facility during power failure conditions
- Front and back reset facility
- Over Voltage protection
- Function On Delay / Interval & Cyclic Adjustable

Digital Multifunction Timer (H3PT-MU, C3PT-MU)
- Selectable start signal facility - No start, pulse or continuous
- Selectable relay change over (1 instant & 1 Delayed or 2 Delayed)

- **Dimensions: 48 x 48 x 115 mm (W x H x D) H3PT-MU**
  72 x 72 x 128.5 mm (W x H x D) C3PT-MU
  96 x 96 x 112 mm(W x H x D) E3PT

Ordering Information

Model	Function	Source Voltage	Time Range	Output
H3PT-MU	Digital Multifunction Timer (Up Counting)	85V to 270V AC / DC	0.1 Sec to 99 Hrs 59 Mins	1 Instant & 1 Delayed or 2 Delayed
C3PT-MU	Digital Multifunction Timer (Up Counting)	85V to 270V AC / DC	0.1 Sec to 99 Hrs 59 Mins	1 Instant & 1 Delayed or 2 Delayed
E3PT	Digital On Delay Timer with instant contact	85V to 270V AC / DC	0.1 Sec to 99 Hrs 59 Mins	1 Delayed, 1 Instant

Hour Meter

Model HM-100/HM-200/HM-500/HM-300 is being obsolete and new product will be Released shortly in 72x72 enclosure

Features

- Enclosure suitable for screw mounting
- State of art microcontroller design
- User friendly programming for ON / OFF time selection independently
- 7 segment display indication for channel & timing operation
- Over Voltage Protection
- External contacts for timing initiation
- Hold / Restart facility during power failure
- Pause facility provided(Not Applicable for ST15-M2 & ST-4-M1)

SEQUENTIAL TIMERS (Model ST-10M1/ST10-M2/ST6-M1)
- Multiple sequential timers can be cascaded to obtain more channels
- **Dimensions: 200 x 130 x 45mm (W x H x D)**

COMBINATION TIMERS (MODEL S1DC8-M3)
- Combination timers 8 relay x 8 combination = 64 program
- Erasing of program by reset terminal
- **Dimensions: 200 x 130 x 45mm (W x H x D)**

SEQUENTIAL TIMERS (MODEL ST15-M2)
- Continuous Differential Pressure Switch signal's & Start signal's command Contact (Potential free)
- Facility for copying first channel program to all channel
- **Dimensions: 200 x 130 x 45mm (W x H xD)**

Analog Sequential Timer (MODEL ST4-M1)
- Enclosure suitable for din rail
- Analog Sequential Timer
- Cyclic Adjustable ON / OFF timer
- **ON / OFF time is common for all channels**
- **Dimension: 110 x 86 x 68mm (W x H x D)**

Ordering Information

Model	Function	Source Voltage	Time Range	Output
ST10-M1*	Sequential switching 10 channels	85V to 270V AC / DC	0.1 Sec to 99Hrs 59 Mins	1 NO Relay for each channel
ST10-M2*#	Sequential switching 10 channels	85V to 270V AC / DC	0.01 Sec to 99Hrs 59Mins	1 Triac for each channel
ST6-M1*	Sequential switching 6 channels	85V to 270V AC / DC	0.1 Sec to 99Hrs 59Mins	1 NO Relay for each channel
S1DC8-M3	Combination switching 8 channels	85V to 270V AC / DC	1 Sec to 99Hrs 59Mins	1 NO Relay for each channel
ST15-M2*#	Sequential switching 15 Channels	85V to 270V AC / DC	0.01 Sec to 99 Hrs 59 Mins	1 Triac for each channel
ST4-M1	Sequential switching 4 Channels	240V AC	0.1 Sec to 1 Hr	1 NO Relay for each channel

*ST-10M1/ST6-M1 suitable for 24V DC is available on request only for bulk requirement. * This models is also available with IP66 enclosure
Suitable for AC loads only

Features

- Din sized enclosure for panel mounting (TS-203) / Din rail mounting (TS-203B)
- Time switch with 4 switching per day
- 2 Nos AA (1.5V DC) size Battery operated real time clock in 24 Hour format
- LCD display for real time clock
- User friendly programming
- Program Enable and Disable facility (For TS-203B only)
- Manual over ride facility
- RTC Programming enable & disable facility
- **Dimensions: 72 x 72 x 84 mm (W x H x D) for TS-203**
  130 x 86 x 65 mm (W x H x D) for TS-203B

Ordering Information

Model	Function	Source Voltage	Output
TS-203	4 Switching, Digital Daily Time Switch	240V AC	1 c/o 16A Relay
TS-203B	4 Switching, Digital Daily Time Switch	240V AC	1 c/o 16A Relay

*Time switch with voltage 12V /24V DC are available on request for bulk requirements

Features

- Dual Function Mode (On / Off or Self Tuned)
- Wide Voltage Range (85V to 270V AC / DC)
- Universal Input (J / K / PT-100)
- LED Indications for Sensor , Relay and Functions
- Single / Dual Set Point
- User Friendly Programming through Increment / Decrement keys
- Over Voltage protection
- Sensor and function lock
- **Dimensions: 48 x 48 x 115 mm (W x H x D) for H3TX Models
   72 x 72 x 128.5 mm (W x H x D) for TX7 Models
   96 x 96 x 112 mm (W x H x D) for EX9 Models**

Ordering Information

Model	Description	Source Voltage	Sensor	Range
H3TX-Ua	Single set point with single display (Relay Output)			
TX7-Ua				
EX9-Ua				
H3TX-2U	Single set point with Dual Display (Relay Output)			
TX7-2U				
EX9-2U				
H3TX-2H-U*	2 set point with Dual Display - Heater Type (Relay Output) (ON / OFF Type)	85V to 270V AC / DC Universal Voltage	J K PT-100 (Self tuned) PT-100 (ON-OFF)	0^0 C to 600^0 C 0^0 C to 1200^0 C 0^0 C to 300^0 C -100^0 C to 300^0 C
TX7-2H-U*				
EX9-2H-U*				
H3TX-2A-U*	2 set point with Dual Display - Alarm Type (Relay Output) (ON / OFF Type)			
TX7-2A-U*				
EX9-2A-U*				
H3TX-S-U	Single set point with SSR drive output (12V DC, 20mAmps)			
TX7-S-U				
EX9-S-U				

* 0^0C to 300^0C for PT100 Sensor

Counters

Features

- Din sized enclosure for panel mounting
- Front / Rear reset facility provided
- Memory retention in case of power failure
- Over Voltage protection

CT-5

- Digital display with Up counting
- Counts selectable with thumb wheel switch
- Input signal from proximity switch NPN / PNP or limit switch (Potential free)

H3CT-5U

- Input signal from proximity switch NPN / PNP or limit switch
- Hold & Restart facility during power failure
- Input Sensitivity selection

- **Dimensions
   48 x 48 x 115mm (W x H x D) for H3CT-5
   72 x 72 x 128.5mm (W x H x D) for CT-5**

Ordering Information

Model	Description	Source Voltage	Range	Output
H3CT-5U (Up Counting)	Preset Counter (LED display), 5 digit	85V to 270V AC / DC	1 to 99,999 Counts	1 c/o, 5A Relay
CT-5	Preset Counter (LED display), 5 digit	85V to 270V AC / DC	1 to 99,999 Counts	1 c/o, 5A Relay

Digital Non Contact Tachometer

■ Features

- Hand Held Non contact tachometer
- Microcontroller based design with world class Indian software
- Non-Contact sensing through reflected light beam on reflective sticker
- LCD Display
- Input sensing indication through LED
- Memory facility to retain measured value
- Portable, Lightweight, Strong and Elegant ABS Enclosure
- Accuracy: ± 1RPM for $< 5,000$ RPM and $\pm 0.05\%$ of the reading for $> 5,000$ RPM
- **Calibration Certificate Provided Along With Tachometer -**
  Traceable To National & International Standard

Ordering Information

Model	Function	Source Voltage	Range
DT2001B	Digital Hand Held Non Contact Tachometer	6V DC (1.5V x 4AA Size Batteries)	1 to 99,999 RPM (with one reflecting mark)

Phase / Voltage Monitoring Device

■ Features

- Auto / Manual operation
- External contacts for restart
- Changeover relay for control action

PMD-01 Phase Monitoring Device

- Monitors phase sequence, phase failure, phase unbalance & under voltage in a 3 phase system & trips under such condition
- LED indication for power, relay status and fault condition
- All parameters factory set.

VMD-03/VMD-01 Voltage Monitoring Device

- Monitors under voltage and over voltage & trips under such condition
- Under Voltage and Over Voltage settable.
- Common trip delay settable.
- **Dimension: 45 x 75 x 116mm (W x H x D) for VMD and PMD**

PVMD / PVIMD (Digital Version)

- Monitors phase sequence, phase failure, phase unbalance, over voltage & under voltage in a 3 phase system & trips under such condition (PVMD)
- Monitors phase sequence, phase failure, phase unbalance, over voltage, under voltage, over current & under current in a 3 phase system & trips under such condition (PVIMD)and indicates the type of fault..
- Unwanted parameters can be bypassed.
- Terminals provided for external CT connection, programmable upto 500 CT primary and CT-Secondary by default – 5
- Trip Delay time can be selected individually for each parameter.
- **Dimension: 96 x 96 x 112 mm (W x H x D)**

Ordering Information

Model	Function	Source Voltage	Output
PMD 01	Phase Monitoring Device	440V AC, 3 Phase	1 c/o relay*
VMD 03	Voltage Monitoring Device	440V AC, 3 Phase	1 c/o Relay
VMD 01	Voltage Monitoring Device	240V AC, 1 Phase	1 c/o Relay
PVMD (NEW)	Digital Phase & Voltage Monitoring Device	3 Phase, 4 wire	2 c/o relay (NO)
PVIMD (NEW)	Digital Phase, Voltage & Current Monitoring Device	3 Phase, 4 wire	2 c/o relay (NO)

*PMD-01 with 2c/o Relay on request for bulk quantity

■ Features

- SMPS Design
- Compact and light weight design
- Versatile and Easy Snap-On mounting on Din rail
- Very low Ripple and Noise
- Regulated and Adjustable output
- Over voltage Protection
- Short circuit / Over Load Protection

- **Dimensions:**
  MS-01 45.5 x 75.4 x 116 mm (W x H x D)
  MS-02 110 x 88 x 61 mm (W x H x D)
  MS-03 155 x 88 x 79 mm (W x H x D)
  MS-05 22.5 x 75 x 102 mm (W x H x D)

Ordering Information

Model	Function	Source Voltage	Output
MS-01	Power Supply Modules	192-264V AC	24V DC, 1A / 15 V DC,1A
MS-02	Power Supply Modules	170-300V AC	24V DC, 2.1A / 15V DC, 2.1A / 12V DC, 4.2A / 5V DC, 6.0A
MS-03	Power Supply Modules	170-300V AC	24V DC, 5A
MS-05	Power Supply Modules	170-300V AC	5V DC, 1A

■ Features

- Sleek ABS enclosure
- Super bright LED for fault indications
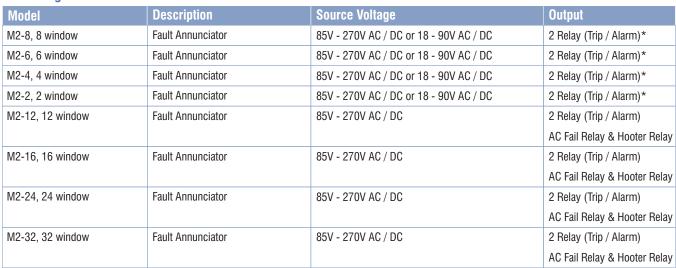- Relay output for fault terminals

M2-8 / M2-6 / M2-4 / M2-2 (NEW)

- 8 / 6 / 4 / 2 window annunciator with 2 relay contact
- Cascading of Annunciator for more window
- Test / Mute / Ack / Reset facility available
- Alarm & Trip relay available
- Programming of windows for NC / NO
- **Dimensions: 73.5 x 142.5 x 78 mm (W x H x D)**

M2-32 / M2-24 / M2-16 / M2-12 (NEW)

- 4 sequence of Operation (Manual RESET, Auto RESET, FIFO Manually RESET with Ring back)
- Cascading of Annunciator for more window
- Test / Mute / Ack / Reset facility available
- Alarm & Trip relay available
- Programming of windows for NC / NO / or T/NT
- Terminals for standby source of 12VDC available for AC Failure
- AC Fail relay available (C/NO)
- **Dimensions: 291 x 186.5 x 69 mm (W x H x D)**

Ordering Information

Model	Description	Source Voltage	Output
M2-8, 8 window	Fault Annunciator	85V - 270V AC / DC or 18 - 90V AC / DC	2 Relay (Trip / Alarm)*
M2-6, 6 window	Fault Annunciator	85V - 270V AC / DC or 18 - 90V AC / DC	2 Relay (Trip / Alarm)*
M2-4, 4 window	Fault Annunciator	85V - 270V AC / DC or 18 - 90V AC / DC	2 Relay (Trip / Alarm)*
M2-2, 2 window	Fault Annunciator	85V - 270V AC / DC or 18 - 90V AC / DC	2 Relay (Trip / Alarm)*
M2-12, 12 window	Fault Annunciator	85V - 270V AC / DC	2 Relay (Trip / Alarm) AC Fail Relay & Hooter Relay
M2-16, 16 window	Fault Annunciator	85V - 270V AC / DC	2 Relay (Trip / Alarm) AC Fail Relay & Hooter Relay
M2-24, 24 window	Fault Annunciator	85V - 270V AC / DC	2 Relay (Trip / Alarm) AC Fail Relay & Hooter Relay
M2-32, 32 window	Fault Annunciator	85V - 270V AC / DC	2 Relay (Trip / Alarm) AC Fail Relay & Hooter Relay

*Repeat relay on request

■ Features

- Measurement of Basic, Power & Energy Parameters
- On site programmable PT/CT ratio
- Accuracy Class 0.2/0.5/1.0
- Low VA burden
- SCADA / PLC Compatibility
- Protection from Dust & water as per IP.51

Specification

Specification	
Sensing	True RMS, 1 Sec updation time
Measurement	Active, Reactive, Apparent Power & Energy
Accuracy	Class 1.0 (Class 0.5 & 0.2 are also available on request)
Standard	IEC 62052-11 IEC 62053-21 IEC 62053-22 IEC 62053-23
Operating Condition	
Operating Temperature	-10^{0}C to +55^{0}C (14^{0}F to 131^{0}F)
Storage	-25^{0}C to + 80^{0}C (-13^{0}F to 176^{0}F)
Humidity	upto 85% RH @ 40^{0}C (Non condensing)
Display	Value - 6 digit, 7 segment, 0.56" LED
	Parameter - 6 digit, alpha numeric, 0.54" LED
Current Input	AR, AY, AB
	10m A - 6A typical (10A max)
CT ratio selectable	Primary 5-50k Amp maximum
	Secondary 1-5 Amps
Voltage Input	3ø, 4 wire RYBN
	110/415V LL nominal
	Range 80-520 VLL (Withstands up to 600 V)
PT Ratio Selectable	Primary (100 Volts - 999 Kilovolts)
	Secondary (80 Volts - 500 Volts)
Auxillary supply	85-270 V AC/DC
Frequency	50 Hz ± 2%
Data retention	10 years minimum
Resolution	6 digit
Meter constant	3200 pulse/KWH
Safety	Insulation Resistence >100M ohms @ 500V DC
	Di-Electric strength 2.5KV AC, 50Hz for 1 minute
	(Between current carrying & non-current carrying parts)
Communication (optional)	RS-485 RTU modbus communication
Baud rate	Selectable 2400/4800/9600
Mechanical	
Dimension (mm)	96 X 9 6 X 112mm (W X H X D)
Enclosure material	Glass filled polycarbonate
Weight	333 grams
Password	User settable 4 digits password

Ordering Information

Model	Description
EMS-01	Multi Function Meter
EMS-02	VAF & PF Meter
EMS-03	KWH Meter
EMS-09	BASIC & ENERGY Meter
EMS-17	DUAL Source Energy Meter
EMS-18	VAF Meter

N commune
Enhanced Energy Management Software

'N Commune is an indigenous EAPL's Energy Management Software for EMS series of Energy Instruments. Designed for Windows based platform, this software does online data acquisition and monitoring – N-Commune displays all Basic, Power, Energy, Power Factor, I/E of Energy, V&I distortions & Harmonic Power. It is ideal and effective software for data analysis of an electrical system both at supply and load ends. It helps to minimize the wastage and losses of energy at various points of the system, there by conserves energy, saves cost, enhances the efficiency of the system by avoiding failures and also achieves optimum output.

Features

1. Compatible to MS Windows XP and higher versions
2. User friendly programming – easy to install & operate
3. Option to scan devices connected in the network
4. Screens
   - Basic and Power parameter
   - V & I distortion
   - Harmonic Power
   - Energy Parameter
5. Reports
   - Single device energy report
   - Single device summary report
   - Multiple device Energy report
   - Load-Center wise energy report
   - Shift wise Energy report

   Graphs
   - Single device graph
   - Multiple device graph
6. Settings screen can be configured with device name, device type, load center & Shift timings
7. Password protection for Settings screen

Note
- Design & Specification are subject to change without notice.
- User is recommended to confirm the suitability of EAPL product range for intended application
- EAPL is not responsible for consequential damage out of use of its products.