

# HIGH DURABILITY TIME CLOCK DISPLAYS



## Analogue and Digital Public Display and Console Clocks



AS9100D Certificate Number : C0210021-AS3



# HIGH DURABILITY TIME CLOCK DISPLAYS

## M350 Series - Digital Console Clocks

### Overview

The M350 LED Console Time Display is ideal in any control room environment or operations control centre where clear and precise time display is needed. The unit dimensions conform to standard DIN dimensions and are readily incorporated into any console design.



A comprehensive range of digit colours, digit sizes and data interfaces are available to suit operation with a variety of system equipment configurations and master clocks, compatible with 50 industry standard serial timecodes as well as NTP. Operational display modes include Time of Day and Date Display options.

All displays clocks are provided with a TCXO based real time clock which maintains an accurate time display during periods of holdover should there be a loss of synchronised master clock time.

Each console clock has a two button menu interface allowing display brightness adjustment as well as menu access and configuration for UTC or local time setting preferences.

In addition, all units have a built in web based configuration server allowing full access to the menu configurations and IP address, subnet & gateway settings, thereby facilitating additional monitoring and remote setup capability.

All units are built to ISO9100D aerospace quality standards and are designed and supplied as long life, highly durable display units, specifically for use in high integrity and high reliability applications.

### Typical applications include:

- Rail - Network Control Room
- Airports - Air Traffic Control Room
- Defence & Aerospace - Mission Control
- Security Control e.g. Police HQs, universities, hospitals, etc

Features		Options and ratings	
<ul style="list-style-type: none"> <li>• High-intensity LED digits</li> <li>• Simple to configure for specific applications with a large range of options (see table)</li> <li>• Excellent readability</li> <li>• TCXO based Real Time Holdover Clock</li> <li>• Suitable for interior applications</li> <li>• User configuration via web browser</li> <li>• Standard DIN IEC 61554 (DIN 43700) dimensions</li> <li>• Fully CE &amp; RoHS Compliant</li> </ul>	Single/Double Side	Single sided	
	No. of Digits	6	
	Digit Size (mm)	[13x6] or [20x4+13x2] or [25x4+20x2] or [25x6]	
	Digit Type	Seven Segment	
	Digit Colours	Red or Yellow or Green	
	Input Signal	NTP or RS422 / RS485 / RS232 Serial Timecodes	
	Power	Power Over Ethernet (PoE) or Mains (90-264VAC 50/60Hz)	
	Front	Acrylic	
	Application	Indoor equipment panel consoles	
	Serial Interface	RS232 or RS422 or RS485 Link configured - 9 Way D Socket	
	Network Interface	RJ45 100BaseT - NTPv3 [RFC1305]	
	Case Finish	Clear Chem Film per MIL-DTL-5541F Class 2 Type 2	
	Environmental	Operating 0°C to +50°C 0-95% R.H. Non Condensing	
	TCXO Holdover	1 <sup>st</sup> year 1ppm : 600µs in 24 hrs	
Sync Indication	Flashing display colons indicate holdover		

Digit Height (mm)	Overall Dimensions (including Bezel)			Cutout Dimensions		Weight(Kg)	Power (W)
	Width(mm)	Height(mm)	Depth (mm)	Width(mm)	Height(mm)		
13	144	72	200	138	66	2	15
20 x 4 + 2 x 13	144	72	200	138	66	2	15
25 x 4 + 20 x 2	192	96	200	186	90	2	15
25 x 6	192	96	200	186	90	2	15

# HIGH DURABILITY TIME CLOCK DISPLAYS

## M355 Series - Public Digital Display Clocks

### Overview



The M355 LED Time Display is ideal in any interior public display application where clear and precise time display information is needed.

A comprehensive range of digit colours, digit sizes and data interfaces are available to suit operation with a variety of system equipment configurations and master clocks, compatible with 50 industry standard serial time codes as well as NTP. Operational display modes include Time of Day and Date Display options.

All displays clocks are provided with a TCXO based real time clock which maintains an accurate time display during periods of holdover should there be a loss of synchronised master clock time.

The units have a built in web based configuration server allowing full access to the menu configurations and IP address, subnet & gateway settings, thereby facilitating full monitoring and remote setup capability allowing brightness, UTC and/or local time preferences to be controlled.

All units are built to ISO9100D aerospace quality standards and are designed and supplied as long life, highly durable display units, specifically for use in high integrity and high reliability applications.

### Typical applications include:

Rail, sea and airport terminals, public stadiums and venues, banks, factories, hospitals and public halls.

Features		Options and ratings
<ul style="list-style-type: none"> <li>• High-intensity LED digits</li> <li>• Simple to configure for specific applications with a large range of options (see table)</li> <li>• Excellent readability</li> <li>• TCXO based Real Time Holdover Clock</li> <li>• Suitable for interior applications</li> <li>• User configuration via web browser</li> <li>• Fully CE &amp; RoHS Compliant</li> <li>• Section 12 Compliant - Rail Fire &amp; Safety</li> </ul>	Single/Double Side	Single or double sided
	No. of Digits	4 (HH:MM) or 6 (HH:MM:SS)
	Digit Size (mm)	60mm / 100mm / 150mm / 200mm
	Digit Type	Seven Segment
	Digit Colours	Red or Yellow or Green
	Input Signal	NTP or RS422 / RS485 / RS232 Serial Timecodes
	Power	Power Over Ethernet (PoE) or Mains (90-264VAC 50/60Hz)
	Front	Acrylic or Glass (Section 12 compliance for Rail fire & safety)
	Application	Indoor public displays
	Serial Interface	RS232 or RS422 or RS485 Link configured - 9 Way D Socket
	Network Interface	RJ45 100BaseT - NTPv3 [RFC1305]
	Case Finish	Black Anodised to MIL-A-8625 Type 2, Class 2
	Environmental	Operating 0°C to +50°C 0-95% R.H. Non Condensing
	TCXO Holdover	1 <sup>st</sup> year 1ppm : 600µs in 24 hrs
Sync Indication	Flashing display colons indicate holdover	
Mounting	Ceiling or Wall - supplied with brackets	

Size	Display Information	Digit Height (mm)	Width (mm)	Height (mm)	Depth (mm)	Weight (kg)	Max viewing Distance (m)
4 digit	[ HH:MM ]	60	325	81	82	1.6	25
	[ HH:MM ]	100	468	136	82	2.2	50
	[ HH:MM ]	150	625	190	82	3	75
	[ HH:MM ]	200	820	250	82	4.2	100
6 digit	[ HH:MM:SS ]	60	362	81	82	1.8	25
	[ HH:MM:SS ]	100	633	136	82	2.5	50
	[ HH:MM:SS ]	150	930	190	82	3.7	75
	[ HH:MM:SS ]	200	1220	250	82	5.5	100

# HIGH DURABILITY TIME CLOCK DISPLAYS

## M355-LF - Line Frequency Display



### Overview

The M355-LF LED Time Display is ideal in any interior public display application where a clear indication of AC line frequency in digital format is required. The display can be used in conjunction with any time and frequency equipment with the required output interface.

These displays are suitable for interior applications where clear presentation of AC line frequency is required, e.g. Power Grids and laboratory environments.

The line frequency display provides precise and convenient reference for visual monitoring of mains frequency output. The display can operate as a stand-alone unit, or it can be used as a remote display in conjunction with a Master Clock, which includes AC Measurement capability.

Features		Options and ratings
<ul style="list-style-type: none"> <li>• AC Line frequency display to 3 decimal places</li> <li>• High-intensity LED digits</li> <li>• Excellent readability</li> <li>• Suitable for interior applications</li> </ul>	<b>Single/Double Side</b>	Single
	<b>No. of Digits</b>	6
	<b>Digit Size (mm)</b>	60mm / 100mm
	<b>Digit Type</b>	Seven Segment
	<b>Digit Colours</b>	Red or Yellow or Green
	<b>Input Signal</b>	Line AC
	<b>Power</b>	Mains (90-264VAC 50/60Hz)
	<b>Front</b>	Acrylic
	<b>Application</b>	Indoor public displays
	<b>Case Finish</b>	Black Anodised to MIL-A-8625 Type 2, Class 2
	<b>Environmental</b>	Operating 0°C to +40°C 0-95% R.H. Non Condensing
	<b>Line Frequency Measurement Input</b>	110 - 240 V AC +/- 10% 48-62 Hz
	<b>Line Frequency Measurement Accuracy</b>	+/- 0.001 Hz
	<b>Display Format Resolution</b>	Line frequency to 3 decimal places
	<b>Approvals</b>	CE Compliant
<b>Mounting</b>	Ceiling or Wall - supplied with brackets	

# HIGH DURABILITY TIME CLOCK DISPLAYS

## M373 Series - Outdoor Public Digital Display Clocks

### Overview

The M373 LED Time Display is ideal in any interior or exterior public display application where clear and precise time display information is needed.



A comprehensive range of digit colours, digit sizes and data interfaces are available to suit operation with a variety of system equipment configurations and master clocks, compatible with 50 industry standard serial time codes as well as NTP. Operational display modes include Time of Day and Date Display options.

All M373 units are provided with a TCXO based real time clock which maintains an accurate time display during periods of holdover should there be a loss of synchronised master clock time. All units are sealed to IP65 (IEC529) and are glass fronted for compliance with Section 12 Railway Fire & Safety Regulations.

The units have a built in web based configuration server allowing full access to the menu configurations and IP address, subnet & gateway settings, thereby facilitating full monitoring and remote setup capability allowing brightness, UTC and/or local time preferences to be controlled.

All units are built to ISO9100D aerospace quality standards and are designed and supplied as long life, highly durable display units, specifically for use in high integrity and high reliability applications.

### Typical applications include:

Rail, sea and airport terminals, public stadiums and venues, banks, factories, hospitals and public halls.

Features		Options and ratings	
<ul style="list-style-type: none"> <li>• High-intensity LED digits</li> <li>• Robust construction to IP65 (IEC 529)</li> <li>• Simple to configure for specific applications with a large range of options (see table)</li> <li>• Excellent readability day or night</li> <li>• TCXO based Real Time Holdover Clock</li> <li>• Suitable for interior and exterior applications</li> <li>• User configuration via web browser</li> <li>• Fully CE &amp; RoHS Compliant</li> <li>• Section 12 Compliant - Rail Fire &amp; Safety</li> </ul>	<b>Single/Double Side</b>	Single or double sided	
	<b>No. of Digits</b>	4 (HH:MM) or 6 (HH:MM:SS)	
	<b>Digit Size (mm)</b>	60mm / 100mm / (4 x 100mm + 2 x 60mm)	
	<b>Digit Type</b>	Seven Segment	
	<b>Digit Colours</b>	Red or Yellow or Green	
	<b>Input Signal</b>	NTP or RS422 / RS485 / RS232 Serial Timecodes	
	<b>Power</b>	Power Over Ethernet (PoE) or Mains (90-264VAC 50/60Hz)	
	<b>Front</b>	Glass : Section 12 compliance for Rail fire & safety	
	<b>Application</b>	Indoor and outdoor public displays	
	<b>Serial Interface</b>	RS232 or RS422 or RS485 Link configured - 9 Way D Socket	
	<b>Network Interface</b>	RJ45 100BaseT - NTPv3 [RFC1305]	
	<b>Case Finish</b>	Painted : RAL9007 Aluminium Grey or RAL 9005 Jet Black Option for alternative colours per order :- e.g. RAL9006, Grey NCS-6502	
	<b>Environmental</b>	Operating : -20°C to +50°C 0-100% R.H. Non Condensing : IP65	
	<b>TCXO Holdover</b>	1 <sup>st</sup> year 1ppm : 600µs in 24 hrs	
	<b>Sync Indication</b>	Flashing display colons indicate holdover	
<b>Mounting</b>	Ceiling or Wall - supplied with brackets		
<b>Vibration</b>	0.125mm (0-50Hz) 0.025mm (50-100Hz)		
<b>Shock</b>	Free drop of 250mm		

Size	Display Information	Digit Height (mm)	Width (mm)	Height (mm)	Depth (mm)	Weight (kg)	Max viewing Distance (m)
4 digit	[ HH:MM ]	60 x 4	405	168	136	4.6	25
	[ HH:MM ]	100 x 4	560	260	210	5.2	50
6 digit	[ HH:MM:SS ]	60 x 4	405	168	136	4.8	25
	[ HH:MM:SS ]	100 x 4 + 60 x 2	690	260	210	5.5	50
	[ HH:MM:SS ]	100 x 6	690	260	210	5.7	50

# HIGH DURABILITY TIME CLOCK DISPLAYS

## M385 Series - Smart Analogue Display Clocks

### Overview

M385 Smart analogue clocks provide a high quality, high readability time display solution in any interior or exterior application where clear and precise analogue time display information is needed, night or day.



A wide range of sizes, back lighting options and data interfaces make these clocks suitable for a variety of applications ranging from small internal offices and waiting rooms to large public venues, such as parks and public concourses.

The network enabled units have a built in web based configuration server allowing full access to the menu configurations and IP address, subnet & gateway settings, thereby facilitating full monitoring, remote setup and local time preferences to be controlled.

All units are designed and supplied as long life, highly durable clocks ideal for high reliability applications. Options for timekeeping from the master clock system include pulsed, serial or NTP interfaces. All clocks automatically adjust to the correct master clock time upon receipt of a valid time code signal.

### Typical applications include:

Rail, sea and airport terminals, public stadiums and venues, banks, factories, hospitals and public halls.

Features	Options and ratings	
<ul style="list-style-type: none"> <li>• Suitable for interior &amp; exterior use</li> <li>• Robust construction to IP55 (IEC 529)</li> <li>• Excellent readability day or night</li> <li>• TCXO based Real Time Holdover Clock</li> <li>• User configuration via web browser</li> <li>• Fully CE &amp; RoHS Compliant</li> <li>• Automatic adjustment to time signal</li> </ul> 	<b>Single/Double Side</b>	Single or double sided
	<b>Hands</b>	Hours & Minutes or Hours, Minutes & Seconds
	<b>Clock Diameter (mm)</b>	230mm / 300mm / 400mm / 600mm / 800mm
	<b>Back light Illumination</b>	None / Fluorescent / LED
	<b>Colours</b>	Grey / White / Clear anodised aluminium - RAL737
	<b>Input Signal</b>	NTP or RS422 / RS485 / RS232 Serial Timecodes
	<b>Power</b>	Power Over Ethernet (PoE) or Mains (90-264VAC 50/60Hz)
	<b>Connections</b>	Internal terminal blocks for power and data
	<b>Application</b>	Indoor and outdoor public displays
	<b>Serial Interface</b>	RS232 or RS422 or RS485 Link configured - Terminal blocks
	<b>Network Interface</b>	NTPv3 [RFC1305]
	<b>Environmental</b>	Operating : -20°C to +50°C 0-95% R.H. Non Condensing : IP55
	<b>TCXO Holdover</b>	1 <sup>st</sup> year 1ppm : 600µs in 24 hrs
	<b>Service Life MTBF</b>	> 85000 Hrs
<b>Mounting</b>	Ceiling or Wall - supplied with brackets	
<b>Viewing Distances</b>	230mm diameter - 10 metres 300mm diameter - 20 metres 400mm diameter - 30 metres 600mm diameter - 60 metres 800mm diameter - 100 metres	

# Satisfied customers include..

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## Sales Contacts and Global Representatives

### TFS UK Head Office

Mrs Laura Cain  
 Sales Coordinator  
 TFS, Witham, CM8 3AL, UK  
 Tel : +44 (0) 1376 5141 14  
 laura.cain@timefreq.com

### Europe, Middle East, Africa, Australia

Mr David Wright  
 Director of Sales, Europe, Middle East,  
 Africa, Australia  
 Tel : +44 (0) 1694 722891  
 dwright@timefreq.com

### Asia, China, India, Japan

Mr Neil Pitman  
 Director of Sales - Asia  
 China, India, Japan  
 Mobile : +44 (0) 7973 859342  
 neil.pitman@timefreq.com

<p><b>Austria, Germany &amp; Switzerland</b>  <b>Semic RF Electronic GmbH</b>                  Contact : Wolfgang Gruber                  Tel: +0049 89 614 1520                  Email: sales@semic.de                  Web : www.semic.de</p> <p><b>Australia &amp; New Zealand</b>  <b>Unitronix</b>                  Contact : Tim Marshall                  Tel: +0061 02 4977 3511                  Email: sales@unitronix.com.au                  Web : www.unitronix.com.au</p> <p><b>Brazil</b>  <b>Sigtron Instrumentos e Servicos Ltda</b>                  Contact : Eduardo Stralacci                  Tel: +0055 11 5031 7359                  Email: eduardo@sigtron.com.br                  Web : http://sigtron.com.br/</p> <p><b>China, Hong Kong &amp; Macau</b>  <b>Spectrum &amp; Master Comms. Technologies</b>                  Contact : Mr William Lai                  Tel: +852 2529 1111 / Mobile +852 9378 9271                  Email: smcthk@netvigator.com</p> <p><b>Indochina (Vietnam, Laos, Cambodia)</b>  <b>Hanova JSC</b>                  Contact : Mr Hai Le                  Tel: +84 91 351 4905                  Email: hai.le@hanova.vn                  Web : www.hanova.vn</p> <p><b>India</b>  <b>PDAC Microsystems Pvt Ltd</b>                  Contact : Mr Pradeep Dhar                  Tel: +91 40 40247626 / Mobile +91 80082 95670                  Email: pradeep@pdac.in                  Web : www.pdac.in</p> <p><b>Janus Trading Co</b>                  Contact : Mr Santosh Krishnan                  Tel: +91 124 408 6641                  Email: santosh@januscorp.in                  Web : www.januscorp.in</p> <p><b>Signowave Solutions Private Limited</b>                  Contact : Santosh Kulkarni                  Tel : +91 40 6717 2356 / Mobile : +91 70327 09060                  Email: santosh.kulkarni@signowave.com                  Web : www.signowave.com</p>	<p><b>Israel</b>  <b>IES Electronics Agencies (1986) Ltd</b>                  Contact : Avi Nataf                  Tel: +00972 37530700                  Email: info@nisko-ies.com                  Web : www.nisko-ies.com</p> <p><b>Italy</b>  <b>Millimetrica RF &amp; Microwave Components SRL</b>                  Contact : Aldo Cagno                  Tel: +0039 011 317 9910                  Email: acagno@millimetrica.it                  Web : www.millimetrica.it</p> <p><b>Japan</b>  <b>Nacelle Co Ltd</b>                  Contact : Mr Hisato Tadokoro                  Tel : +81 3 5921 6099                  Email : tadokoro@nacelle.co.jp                  Web : www.nacelle.co.jp</p> <p><b>Korea</b>  <b>ETooB</b>                  Contact : Jaydon Lee                  Tel : +82-2-6677-3409                  Email : jaydon.lee@etooob.co.kr                  Web : www.etooob.co.kr</p> <p><b>Malaysia</b>  <b>Alam Sinergi Teknik Sdn. Bhd.</b>                  Contact : Mr HH Chew                  Tel: +60 3 7847 5925 / Mobile: +60 13 5131068                  Email: hhchew@alamsinergitekNIK.com</p> <p><b>North America : USA &amp; CANADA</b>  <b>Brandywine Communications Inc.</b>                  Tel: +1 877 367 7962 Fax: +1 714 755 0175                  Email: info@brandywinecomm.com                  Web : www.brandywinecomm.com</p> <p><b>North Africa, Mauritania, Morocco, Tunisia, Algeria, Libya, Egypt, Chad, Mali</b>  <b>ProComSat</b>                  Contact : Hussein Ait Si Selmi                  Tel: +0021321548618                  Email: hussein@procomsat.com                  Web : www.procomsat.com</p> <p><b>Spain &amp; Portugal</b>  <b>Tecnologia GPS S.A.</b>                  Contact : Jose Luis Esteban                  Tel: +34 91 323 72 30                  Email: comercial@tecnogps.es                  Web : www.tecnogps.es</p>	<p><b>Philippines</b>  <b>Imaginet International Inc</b>                  Contact : Mr Blair Duncan                  Tel: +63 2 895 9755 / Fax : +63 2 895 9766                  Email: blair@imagnet.com.ph                  Web : www.imagnet.com.ph</p> <p><b>Singapore</b>  <b>PROGRESO Networks (S) Pte Ltd</b>                  Contact : Victor Tang                  Tel: +65 6509 9600 / Mobile +65 9735 1700                  Email: victor@progreso.com.sg                  Web: www.progreso.com.sg</p> <p><b>Thailand</b>  <b>CSG Solution (Thailand) Company Ltd</b>                  Contact : Mr Chinnaret Kusathisiriphan                  Tel: +66 2 575 2971 / Mobile +66 94 951 6524                  Email: chinnaretx@csgs.co.th                  Web: www.csgs.co.th</p> <p><b>Turkey</b>  <b>Merit Elektronik</b>                  Contact : Levent Celebi                  Tel: +0090 312 472 7495                  Email: leventc@meritelektronik.com.tr                  Web : www.meritelektronik.com.tr</p> <p><b>South Africa</b>  <b>Satellite 2000 Systems International Inc</b>                  Contact : Fred Joubert                  Tel: +001 818 991 9794                  Email: sales@sat-2k.com                  Web : www.sat-2k.com</p> <p><b>U.A.E.</b>  <b>Zener Fire &amp; Security LLC</b>                  Contact : Ranjith Nambiar                  Tel: +0021321548618                  Email: ranjith@zenerfire.com                  Web : www.zenerfire.com</p>
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25 Eastways, Witham, Essex, CM8 3AL, UK  
 Phone +44 (0) 1376 5141 14 | Fax +44 (0) 1376 5161 16  
 Email : enquiries@timefreq.com



153 Warner Ave, Tustin, CA 92780, USA  
 Phone +1 714 755 1050  
 Email : Info@brandywinecomm.com

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