



## > INTERCEPTION SYSTEMS AND ACCESSORIES

### > ESE LIGHTNING AIR TERMINALS

## > DAT CONTROLER® REMOTE

### > GENERAL DESCRIPTION

**DAT CONTROLER® REMOTE** is an Early Streamer Emission (ESE) air terminal based on the electrical characteristics of lightning formation. The air terminal triggers the continuous upward leader before any other object within its radius of protection. This feature is referred to in the regulations as the **advance time of an ESE air terminal** ( $\Delta T$ ). The earlier the upward leader is triggered, the larger is the distance where the downward leader is intercepted, thus protecting a greater area against lightning (standards limit it to  $\Delta T \leq 60 \mu s$ ).

**DAT CONTROLER® REMOTE** is remotely testable, that checks the state of the air terminal daily and sends the result to a receiver device using M2M communication.

The result can be viewed from a **web portal**, where alarms, notifications, reports, etc. can also be managed.



Ref.	Description
AT-2515	DAT CONTROLER® REMOTE 15
AT-2530	DAT CONTROLER® REMOTE 30
AT-2545	DAT CONTROLER® REMOTE 45
AT-2560	DAT CONTROLER® REMOTE 60

### AT-REMOTE TESTER

- ✓ M2M and RF communication
- ✓ Completely autonomous system thanks to its solar panels.
- ✓ Certified resistance in extreme environmental conditions (salt mist test and humid sulphurous atmosphere treatment).
- ✓ Certified withstand current: 20 x 100 kA (10/350  $\mu s$ ).
- ✓ Insulation above 95% under rain.
- ✓ Certified protection radii.

REMOTE  
TESTER





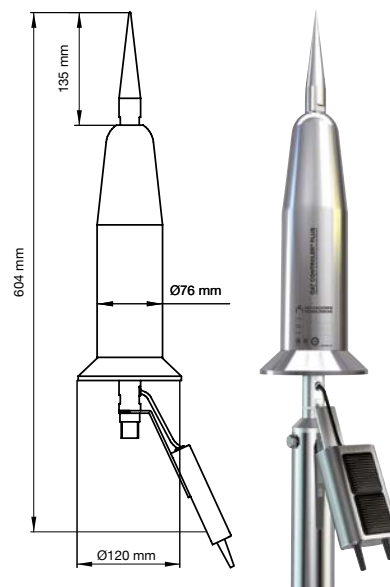
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> TECHNICAL CHARACTERISTICS

Material:	AISI 316L stainless steel
Weight:	3.9 kg
IP Code:	IP67
Working temperature:	-25 °C to 88 °C
Type of air terminal:	Electropulsator (emits impulses)
Internal insulation:	Polyurethane resin
Fixing:	M20 male thread
Regulation:	NF C 17-102:2011, UNE 21186:2011 y NP 4426:2013.

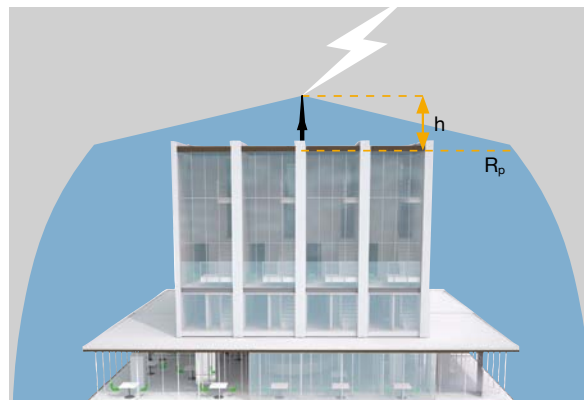
The installation of **DAT CONTROLLER® REMOTE** air terminals shall follow NF C 17-102:2011, UNE 21186:2011 and NP 4426:2013. "Lightning protection: ESE lightning air terminals".



> DAT CONTROLLER® REMOTE ADVANCE TIMES ( $\Delta T$ )

**DAT CONTROLLER® REMOTE** air terminals have passed all the tests according to the standards. For safety and ease of calculation, the results have been rounded down thus certifying the following advance times ( $\Delta T$ ) in microseconds:

Ref.	Model	$\Delta T$ certified
AT-2515	DAT CONTROLLER® REMOTE 15	15 $\mu s$
AT-2530	DAT CONTROLLER® REMOTE 30	30 $\mu s$
AT-2545	DAT CONTROLLER® REMOTE 45	45 $\mu s$
AT-2560	DAT CONTROLLER® REMOTE 60	60 $\mu s$



> DAT CONTROLLER® REMOTE PROTECTION RADIUS IN METRES ( $R_p$ )

Ref. →	PROTECTION LEVEL I (D=20 m)				PROTECTION LEVEL II (D=30 m)				PROTECTION LEVEL III (D=45 m)				PROTECTION LEVEL IV (D=60 m)				
	AT-2515	AT-2530	AT-2545	AT-2560	AT-2515	AT-2530	AT-2545	AT-2560	AT-2515	AT-2530	AT-2545	AT-2560	AT-2515	AT-2530	AT-2545	AT-2560	
h (m)	2	13	19	25	31	15	22	28	35	18	25	32	39	20	28	36	43
	4	25	38	51	63	30	44	57	69	36	51	64	78	41	57	72	85
	6	32	48	63	79	38	55	71	87	46	64	81	97	52	72	90	107
	8	33	49	64	79	39	56	72	87	47	65	82	98	54	73	91	108
	10	34	49	64	79	40	57	72	88	49	66	83	99	56	75	92	109
	20	35	50	65	80	44	59	74	89	55	71	86	102	63	81	97	113
60	35	50	65	80	45	60	75	90	60	75	90	105	75	90	105	120	

**h (m):** Height of the air terminal over the element to be protected (in metres).  
**D (m):** Rolling sphere radius (in metres).



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DAT CONTROLLER® REMOTE terminals offer the highest performance guarantees:

#### 1 REGULATION REQUIREMENTS\*

According to the standards NF C 17-102:2011, UNE 21186:2011 and NP 4426:2013 «Early Streamer Emission Air terminals»

- Salt mist test ✓
- Humid sulphurous atmosphere test ✓
- Withstand current test: 100 kA (10/350 µs) ✓
- Advance time  $\Delta T$  test ✓

#### 2 BEYOND THE STANDARDS: ADDITIONAL FEATURES

##### AENOR MARK



- In accordance with the AENOR RP 058 specific regulation for ESE air terminals ✓
- Monitoring samples taken by AENOR technicians ✓
- Tests in official and independent laboratories ✓

Certified withstand current 100 kA, 20 impulses (10/350 µs)

- Direct application of 20 impulses of current (10/350 µs) with a peak current higher than 100 kA and specific energy greater than 2.5 MJ/Ω ✓

Performance under rain (insulation above 95%)



- Test according to IEC/EN 60060-1:2012 ✓
- The patented design of the DAT CONTROLLER® REMOTE prevents rain creating contact between the metal housing at atmospheric electric potential (in blue) and the grounded metal axis (in red) ✓
- The source feeding the triggering device of an ESE air terminal is the high difference in the potential between its insulated metal frames during a thunderstorm. It is necessary to guarantee such a difference in potential in the event of rain.

Checking the state of the air terminal

- Daily remote verification with data available in real time through a web application using M2M. ✓

\*The last edition of the standard NF C 17-102:2011, UNE 21186:2011 and NP 4426:2013 requires, **consecutively and on the same sample**, the following tests:

1. Environmental tests, in atmospheres with a high salt and sulphur concentration, in order to ensure the correct operation of the air terminal in highly corrosive atmospheres.
2. Current test, applying 3 impulses of 100 kA with a 10/350 µs wave to the air terminal in order to ensure it works after repeated lightning strikes.
3. Advance time test for calculating the  $\Delta T$  factor which will determine its protection radius.



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## &gt; DAT CONTROLER® REMOTE CERTIFICATIONS



## RADIUS PROTECTION CERTIFICATE AND REGULATION COMPLIANCE

Radius protection certificate for each model and level calculated according to standards NF C 17-102:2011, UNE 21186:2011 and NP 4426:2013.

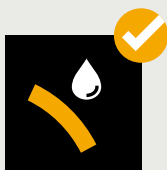


## AENOR PRODUCT CERTIFICATION NO. 058/000005

- Certified resistance to extreme environmental conditions (salt mist test and humid sulphurous atmosphere treatment).
- Certified withstand current: 100 kA (10/350  $\mu$ s).
- Certified advance time  $\Delta T$  (Annex C, NF C 17-102:2011/UNE 21186:2011/NP 4426:2013).

WITHSTAND CURRENT CERTIFICATE FOR 20 IMPACTS OF 100 KA (10/350  $\mu$ s)

Direct application of 20 current impulses (10/350  $\mu$ s) with a peak current higher than 100 kA and specific energy greater than 2.5 MJ  $\Omega$  (with positive and negative polarity), according to IEC/EN 60060-1 and IEC 61083-1.



## CERTIFICATE OF PERFORMANCE UNDER RAIN

**Insulation above 95%**

These tests have been performed according to standard UNE-EN 60060-1:2012 in the Electrical Technology Institute (ITE).

- Comparative dry/rain tests with continuous voltage (simulating the electric field during a storm).
- Comparative dry/rain tests with switching impulses (simulating the approach of the downward leader).
- Comparative dry/rain tests with lightning impulses.



## CERTIFICATE OF COMPATIBILITY WITH DIRECTIVE RTTE FOR RADIOCOMMUNICATIONS

Certificate in accordance with standards EN 60950-1:2006, EN 301 489-1:2011 & EN 301 489-7

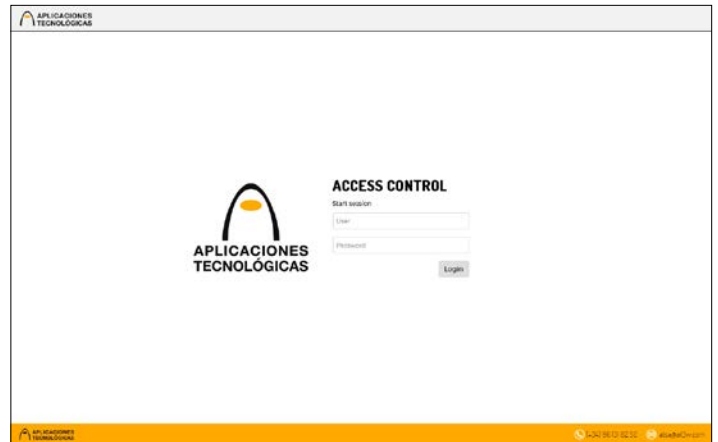


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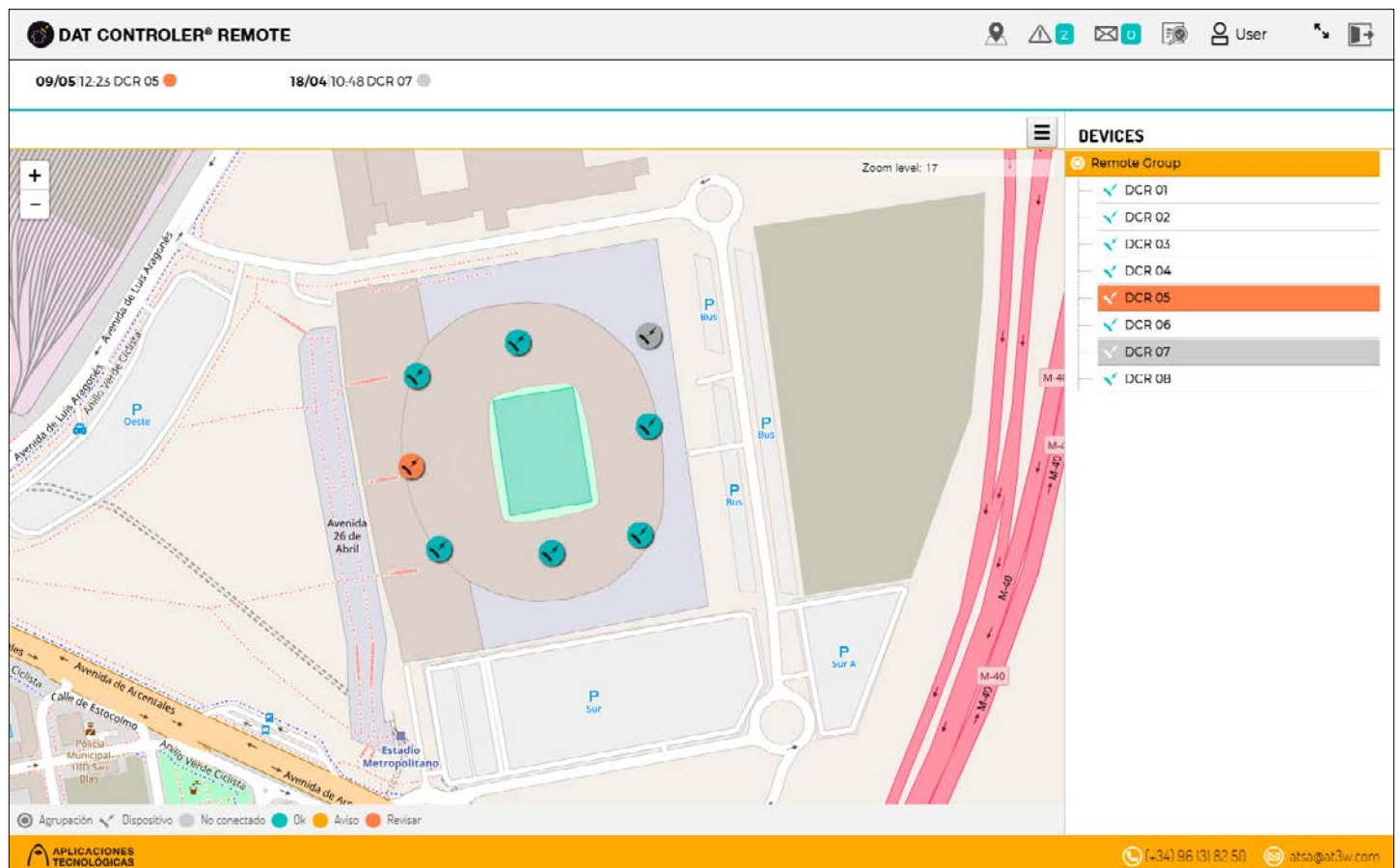
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> WEB PORTAL

DAT CONTROLLER® REMOTE lightning air terminals are controlled from a web application that provides daily information regarding the state of each installed air terminal and issues an alert if any error is detected.



Example of lightning air terminals installed in different headquarters of the same company:



Screen that shows the status of the different lightning air terminals and emplacements.



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> WEB PORTAL

**DAT CONTROLER® REMOTE** 📍 ⚠️ 2 📧 0 📄 👤 User 🔄 📄

09/05 12:23 DCR 05 ● 18/04 10:48 DCR 07 ●

**SUMMARY** Group: All Device: All 🔍 ⬇️ ● Not connected ● Ok ● Check

Group	Client	Installation	Device	Location	Identifier	Model	Status	Date
Remote Group	Client 1	Central	DCR 01	( 40.437154 , -3.599675 )	072000117077	AT-2560	<span style="color: teal;">●</span>	11/05/2018 20:29
Remote Group	Client 1	Central	DCR 02	( 40.436103 , -3.600869 )	072000217078	AT-2560	<span style="color: red;">●</span>	09/05/2018 12:23
Remote Group	Client 1	Central	DCR 03	( 40.436872 , -3.600796 )	112004117076	AT-2560	<span style="color: teal;">●</span>	05/05/2018 20:13
Remote Group	Client 1	Central	DCR 04	( 40.435404 , -3.600558 )	072000417071	AT-2560	<span style="color: teal;">●</span>	28/04/2018 16:30
Remote Group	Client 1	Central	DCR 05	( 40.435369 , -3.599295 )	112004217077	AT-2560	<span style="color: teal;">●</span>	19/04/2018 09:14
Remote Group	Client 1	Central	DCR 06	( 40.435522 , -3.598315 )	112003917074	AT-2560	<span style="color: teal;">●</span>	18/04/2018 17:00
Remote Group	Client 1	Central	DCR 07	( 40.436448 , -3.598215 )	112003717072	AT-2560	<span style="color: teal;">●</span>	18/04/2018 10:48
Remote Group	Client 1	Central	DCR 08	( 40.437711 , -3.598215 )	112004017075	AT-2560	<span style="color: grey;">●</span>	18/04/2018 10:48

📞 (+34) 96 131 82 50 📧 atsa@at3w.com



Screen that shows the list of the installed devices and alerts.