

COSDEM







PRESENTATION

Summary Company Cosdem Process	2 3 4 5
MACHINE RANGE	
COSDEM 1 NEW SYSTEME (COSDEM 2 & 3) COSDEM 4 COSDEM IP	6 7 8 9
EQUIPMENT	
Crimp Dies Crimp Dies Integration Integration Integration Smoke extractor Lugs Lugs Lugs Support	10 11 12 13 14 15 16 17 18 19 20
QUALIFICATION	
Test resources Test resources	21 22
CONTRIBUTION COSDEM	
Profits	23
COMMUNICATION	

Show	24
------	----



AMR ELECTRONIQUE

Located in Saint just (FRANCE) over 35 years AMR Electronique develops and manufactures new production processes for winding trades. Our expertise how has steadily developed which allows us today to accompany our customers in areas such as:

- The agglomeration winding son with polymerization by Joule Effect
- Analysis and qualification of enameled wire (for new product)
- Connection without unenamelling with COSDEM
- Prototyping of specific products manufactured for the imposed constraints
- The qualification and validation of connections
- Bench Test motors

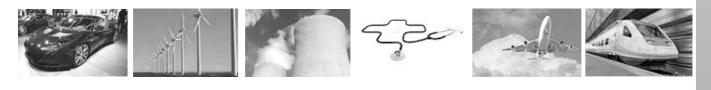
QUALITY AND MEANS

Now present in 5 continents, we give special attention quality tools in both :

- Analysis and qualification means
- Production
- Production management of our equipment

AREAS OF ACTIVITIES

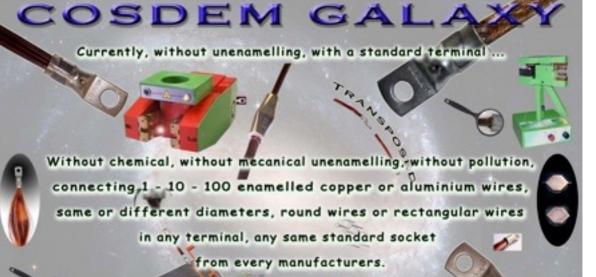
AMR Electronique delivers reliable and sustainable business solutions to our partners in Aeronautics, Automotive, Energy, Medical, Nuclear, Railway ...





This process, perfected by AMR, ensures the connections of magnet wires :

- Copper or Aluminium,
- Same or different diameters,
 - Round, flat or CTC
- Single or multi wiresenamelled, tinned or bare,



connecting 100 or up enamelled wires only needs 10 seconds !!!

and that : -in a same socket

a same terminal -a same barrel -a same lug -standard to all the manufacturers

by:

-heat confining -soft or hard solder with filler metal

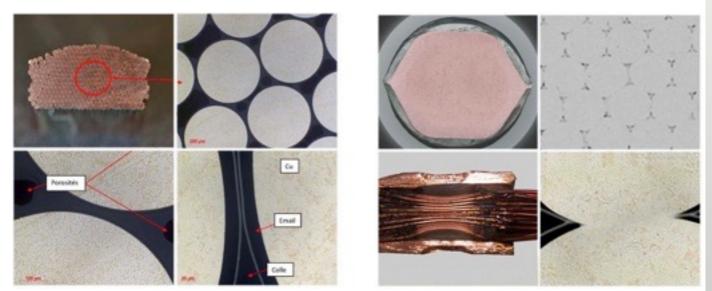
PROCESS

Cross section after crimping

The joint action of the couple pressure X heat applied through a socket, barrel, lug or terminal, induces the creeping of the enamel, which ensures the connection of the enamelled magnet wires.

The process is suitable for any composition and any type of enamel.

Cross section before crimping



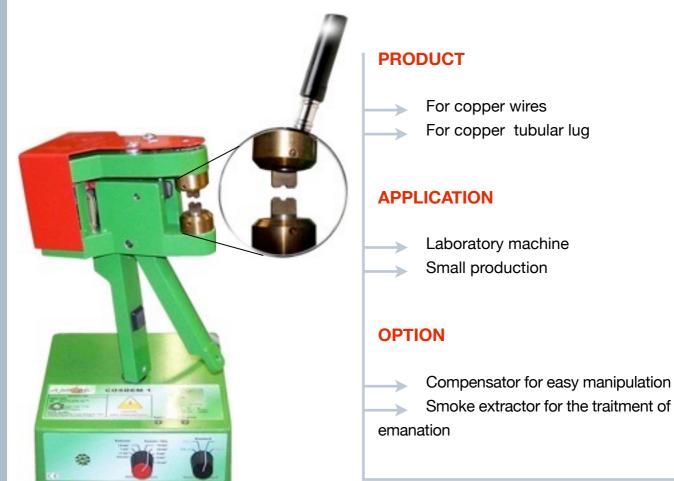
The use of welded wire is no longer inevitable.

Thanks to COSDEM, complex compositions (like litz wires cables) can be now used with high performance insulation.

The prospects of technological and economic developments of your coils have currently no limits.

Cf AMR publication : "Litz wires and coil" "Polymeres and electrical insulation" "Enameled wires and coil" "Rotating machines and coil "

COSDEM 1



Ph	Physical specifications Crimping tool							
Height	240 mm							
Length	165 mm							
Width	80 mm							
Weight head	2,5 Kg							
Weight cabinet	1,5 Kg							
Output voltage:	1V - 500 A - 500 Hz							
Connection capacities	from 0,25 up to 10 mm2							
Power supply	230 V, 50 Hz,							
	Monophased							
Int	erchangeable jaws with specific prints on request							

COSDEM 2 & 3 MK 6.0 S



PRODUCT

- For copper or aluminium wires
- For copper or aluminium tubular lug

APPLICATION

- Series production,
- New development,

INTERFACE

- Viewing crimp curves
- Technical Data : Pressure / Temperature

ALL IN ONE SYSTEME

Compensator for easy manipulation
Smoke extractor for the traitment of emanation

	Physical specifications Crimpir	ng tool
	COSDEM 2	COSDEM 3
Height	140 mm	180 mm
Length	255 mm	310 mm
Width	160 mm	210 mm
Weight	12 kg	18 kg
Connection capacities	from 10 mm2 to 70 mm2	from 50 mm2 to 185 mm2
Output voltage	1V - 2000 A - 500 Hz /Ga	Ivanic insulation > 8 kV
Smoke extraction	To be defined depending on the sec	tion and the volume of production
	Physical specifications Power s	supply
Height	900 r	nm
Length	600 r	nm
Width	600 r	nm
Weight	70 -	kg
Power supply	230 V , 50 Hz	400 V, 50 Hz / 440 V, 60Hz
	Monophased 16 A	Three-phased 20 A
Automatic range	from 10 mm2 to 70 mm2	from 50 mm2 to 185 mm2
Optional	High temperature Wires (Cut through $<$	or soldering 650° C)
	Interchangeable jaws with specific prints	on request

COSDEM 4



PRODUCT

For copper or aluminium wires

For copper or aluminium tubular lug

APPLICATION

- Series production,
- New development,

INTERFACE

- Viewing crimp curves
- > Technical Data : Pressure / Temperature

OPTION

Compensator for easy manipulation
Smoke extractor for the traitment of emanation

	Physical specifications Crimping tool
Height	200 mm
Length	360 mm
Width	210 mm
Weight	22 Kg
Sm	oke extraction by ventilation with interchangeable filter
Output voltage	1V - 2000 A - 500 Hz /Galvanic insulation > 8 kV
Connection capacities	from 150 mm2 to 630 mm2
	Physical specifications Power supply
Height	380 mm
Length	210 mm
Width	525 mm
Weight	20 Kg
Power supply	400 V, 50 Hz / 440 V, 60Hz
	Three-phased 25 A
Automatic range	from 150 mm2 to 630 mm2
Optional	High temperature Wires (Cut through < or soldering 650° C)
	Interchangeable jaws with specific prints on request

COSDEM IP



PRODUCT

- For copper or aluminium wires
- For copper or aluminium tubular lug

APPLICATION

Larges Series production, (severals thousand per day)

→ New development,

INTERFACE

- Viewing crimp curves
- -> Technical Data : Pressure / Temperature

ALL IN ONE SYSTEME

Implementation on the production line

Smoke extractor for the traitment of emanation

Physical specifications Crimpir	ig tool				
COSDEM 1 IP	COSDEM 2 IP				
120 mm	180 mm				
250 mm	310 mm				
100 mm	210 mm				
4 kg	12 kg				
from 0,5 mm2 to 10 mm2	from 10 mm2 to 70 mm2				
utput voltage 1V - 2000 A - 500 Hz /Galvanic insulation > 8 kV					
To be defined depending on the sec	tion and the volume of production				
Physical specifications Power s	supply				
900 r	nm				
600 r	nm				
600 r	nm				
60 k	(g				
230 V , 50 Hz	230 V , 50 Hz				
Monophased 16 A	Monophased 16 A				
from 0,5 mm2 to 10 mm2	from 10 mm2 to 70 mm2				
High temperature Wires (Cut through $< c$	or soldering 650° C)				
Interchangeable jaws with specific prints	on request				
	COSDEM 1 IP 120 mm 250 mm 100 mm 4 kg from 0,5 mm2 to 10 mm2 1V - 2000 A - 500 Hz /Ga To be defined depending on the sect Physical specifications Power 9 900 r 600 r 600 r 600 r 600 k 230 V , 50 Hz Monophased 16 A from 0,5 mm2 to 10 mm2 High temperature Wires (Cut through < 0)				



The design of the crimping dies should consider :

- Composition of your cable
- Copper or aluminium cross section
- Your cable geometry (Round, Rectangular or Square)
- From connector use

	(Del	C	2				Sertis	sage de	s Fils Ém	aillés		XXXX	
Roeders o D dos 1			Section days	heatheadar (1) Marit (1)	110,84 mm3 11,88 mm		1 200	NFC 2	20-130				-
Nombre d	A 200 121		Section date	Aughente (11)		~					a - Addama	- 60 - /	10. CM
di den i				alant (3)			Cacilla	and a second sec		and the second	1	Nº YA	Dr. All
1						L	44		60.4			1 = 8.54 g = 1	
Normbra d	le Pile (2)		Section days	hallente (3)		<u>.</u>	Completion	empould hit to	dasi dar Le (Preize)	Eujonege		100	
di den i	Allia (30		0 depute	alant (X)			040 140000						
							Section Or #	0	Section No.	incide de la			
Reperidente - d	to File (4)		Dection day	Augilante (14)			1 - 2 - 2 - 4	Destination .	CORRECT DAMA				
al den i				plost (4)			Lin pi med	13,88	\$6,00 mm/	128,00 0002	12002 12		
Dé	termina	tion aut	tomatiqu	e de la c	cosse		220	Rapport de services pe	569	a sujution	L	1	a
	54.5	365.3	19.06	245.5	2,35		111.04 0.02	0.67	199, 54 mm J	15.57 mm	17,52 mm	0.56 mm	7.45 min
											ALC: NO.		
	0	osses a	& MANCI	RONS			Sealer La an		- passed day	· mindister	L	L	a
		519		548	4		517	#5	547	0			
							100 - COLU	100 m 1			Coefficient a		.0.4
Section	0	Section	9	Section			Saint-Tailore	HIP/NDR	Section Externs	reunated.	@ sigulvolant	L-Jate(Angle/2)	(3.7an (Ample/33)
Nominale	Intérieur	Babbricurs	Exhibiter	Extérieure Béela	Epolosian .		Please Caprila	and the second second	Sundie (naprile martinenige)	antine rande	pour and section candle		in our busines with
						100	sectorage)	Rapport da Burtingage	- secondaria	and the second s	Percent under		
	1.4	2.5	3,30	8,5	6.75		Linus and	0.99	5.04.mm2	2,53 mm	2,79 min.		
2,5 mm3	2,4	4.5	4,00	12,8	8,85		Com b7,C	0.55	6,94 mm2	2,97 mm	3,27 mm	5.63.600	3,43, 100
E served B	2.7	1.7	8.00	19,8	3,13		5 at 10 mind	0.70	13,73 mm3	4,18 mm	6,00 100	2,30 (61)	2,00 mm
0.0003	3.3	8.5	5,50	33.8	3,55		A 10 mill	0.75	18,67 minit	A,65 min	5,87 milli	2.53 mm	A.1.9 mot
Mines?	4.3	14,5	6.80	34.3	1,25		No. of Concession, Name	6.12	25,84 mm3	3,64 mm	6,25 mm	3, 00 min	3,69 mm
15 mml	8.5	33,3	8,00	79.9	1,35			6,73	28,43 mm3	8.17	2,429 80.00	2,72 mm	3.34 milli
35 mm2	2.4	44.5	81.00	95.0	1.55			9.71	67.86 mm3	9.10 ster.	10.33 mm	ALL MAD	A had seen
	8.2	84.5	12.00	623	1.45			0.75	03.30 mm3	In Print	TAXABLE INC.	3.94 mm	A.D.S man
TH story 1	11	25.0	15,00	377	2.00	10		0.74	320.17 mind	12.87 mm	14.16 mm	2.04 mm	8.33 mm
\$5 mm2	43.5	135	17,00	21.9	1.15		45.00 mm2	6.70	159.55 mm3	\$4.27 mm	15.09 mm	2.85 mm	8,80 mm
130	24.5	345	19.00	284	3.33			0.73	306.04 mm3	18,20 mm	12.01 mm	8.91	7.71 mm
1250 min 2	16.2	304	21,00	346	2.40			0.73	253,86 mm3	17.81 mm	18,70 mm	3.85 mm	8,53 mm
SPI match	1.0	354	25,00	415	2,50		143-002	6,33	362,85 mm2	23,51 mm	23,56 min	30,78 mm	9,34 min
340 mm3	20.4	333	30,00	207	4,70		241	-0.72	108.00 mm.1	25,45 mm	27,99 mm	54,00 Min	13,12 100
300 mm2	2.5	415	28,00	616	3,50		200-002	0.72	444.61 mm2	23,79 min	25,25 mm	13,68 mm	\$1,85 mm
\$00 mm3	20	895	32,00	804	3,00		400 02	0,75	Emin: \$4,898	27,28 mm	36,54 mm	15.17 mm	13,23 mm
800 mm2	29,3	670	29,50	1328	8,18		100 92	0.75	014,95 mm3	24,13 mm	27,82 900	18.37 mm	14,35 mm
	33.5	881	42,00	1385	4,25			6.71	990.35	35.51 mm			18,91 (44)
										Partie			
					ar report to L			L.4.	4.704440000	L ==			
					a description of the			- 345.4	1.347820000				
Calcul A	innesse :		di un fante l'	n Curse sectio	1.11			45.5	1.140740000				
6.00				atom .	(h)				1.093430000	L =	17		
								80.1	1.2533314.015		Ladled		

Step 1 Set up a connector type

We can help you along this step :

- By directing you to the most appropriate connector, according to the different standards.

- By offering a design specific to your needs pods (see page 18)



Step 2 Design and material selection

AMR set a specific geometry of the crimping tools thanks to a computer program taking part in the elements mentioned above, to ensure the optimum mechanical and electrical resistance values.

These dies can be cut into different materials in according to the crimping quantity and the type of connector.



Step 3 Identification and markings

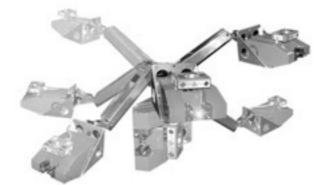
Each dies can be identified according to your criteria. Example : Project Number, Section crimp, Code specific to the company.

The crimped connector will be marked by the dies references.



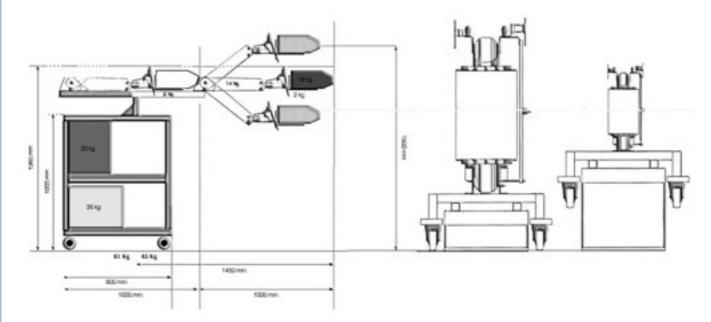
INTEGRATION

AMR ACHIEVES THE INTEGRATION ACCORDING TO YOUR SPECIFICATION



- Integration of production line
- Congestion of unit
- Perimeter crimping

- Arm length for deployment
- Mobile or fixed unit
- Smoke extraction system



INTEGRATION

COSDEM 2 MANIPULATOR ARM

Fulfilment of the most demanding connections !

This new arm,, allows effortlessly manipulate of your COSDEM in all crimping configurations possible.



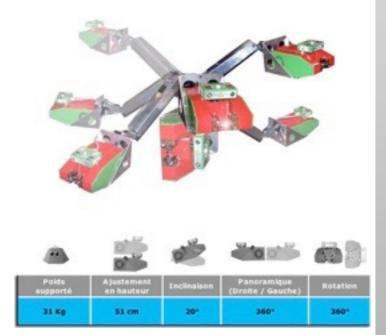
Kinematics

COSDEM 3 MANIPULATOR ARM

Fulfilment of the most demanding connections !

This new arm,, allows effortlessly manipulate of your COSDEM in all crimping configurations possible.

Kinematics



ш

INTEGRATION

EXAMPLE OF REALISATION

CONNECTION AREA COSDEM 1 / 2 / 3

A single mobile worstation to connect your whole cables



COSDEM 1 COMPENSATOR

The handing in your production service. This COSDEM 1 assistance is a complete set, easy to integrate on your workstations. It preserves the health of the operator compensation weight of the head and thanks to the absorption of fumes during crimping





EXAMPLE OF REALISATION

COSDEM 2 COMPACT ASSISTANCE

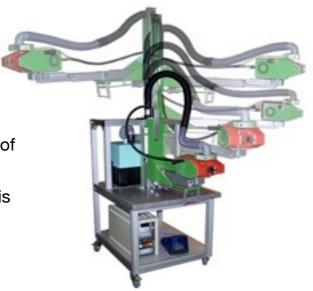
- A compact solution to your probleme of connection.
- Connection System
- Manipulatot arm
- Smoke extraction
- Storage
- H : 750 mm x L : 600 mm x W : 310 mm



COSDEM 3 COMPENSATOR

This COSDEM 3 assistance is distinguisched by the large deployment of the manipulator arm. The maximum height reached crimping is

1,8 meters

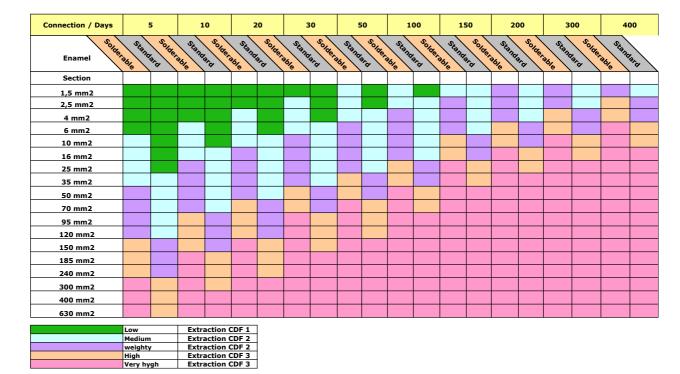


EQUIPMENT

SMOKE EXTRACTOR

Certifies your filter unit according to your application to :

- Protecting people against the fumes produced during crimping.
 - Process gases and fumes to protect the environment.
 - Avoid clogging and extend the life of your equipment



The protection of persons

Technical features



Caractéristiques techniques Extraction de fumée							
Modèle/ Model	CDF1	CDF2	CDF3				
Hauteur / Height	180 mm	450 mm	450 mm				
Longueur / Length	200 mm	300 mm	600 mm				
Largeur / Width	160 mm	300 mm	300 mm				
Poids / Weight	6	12 Kg	21 Kg				
Puissance / Power :	36	115 Watts	230 Watts				
Niveau sonore /Sound level	55 dBA	55 dBA	65 dBA				
Filtre / Filter	Filtre particules fines	HEPA 12	HEPA 12				
Alimentation / Power supply	230 V, 50 Hz, monophasé / Monophased	230 V, 50 Hz, monophasé / Monophased	230 V, 50 Hz, monophasé / Monophased				

LUGS

Internal sections of different standards

SECTION	N	NFC 20-1	30	1 1	NFF 0036	53	1	DIN 462	34	0	DIN 4623	35
NOMINALE COSSES CUIVRE	Ø Int.	Section Intérieure Réelle	Ø Ext.	Ø Int.	Section Intérieure Réelle	Ø Ext.	Ø Int.	Section Intérieure Réelle	Ø Ext.	Ø Int.	Section Intérieure Réelle	Ø Ext.
1,5	1,8	2,5	3,3		,		1,6	2		i —	<u>, </u>	
2,5	2,4	4,5	4,0		-		2,3	4				
4	2,7	5,7	5,0		5		3,6	10			•	
6	3,3	8,6	5,5			- 20	3,6	10		3,8	11	5,5
10	4,3	14,5	6,8	5	20	8,0	4,5	16	_	4,5	16	6,0
16	5,3	22,1	8,0	6	28	9,0	5,8	26		5,5	24	8,5
25	6,6	34,2	9,5	7,7	47	10,5	7,5	44		7	38	10,0
35	7,9	49,0	11,0	9	64	12,0	9,4	69		8,2	53	12,5
60	9,2	66,5	12,5	10,8	92 109	14,0	11	95	_	10	79	14,5
70	11	95,0	15,0	11,8	123	15,0 16,0	13	133		11,5	104	16,5
95	13,1	135	17,0	14,5	165	18,5	15	177		13,5	143	19,0
120	14,5	165	19,0	16,5	214	21,0	17	227		15,5	189	21,0
150	16,2	206	21,0	18	254	23,0	19	284		17	227	23,5
185	18	254	23,0	20,5	330	26,0	21	346		19	284	25,5
240	20,6	333	26,0	23	415	29,0	23,5	434		21,5	363	29,0
300	23	415	28,0	26	531	33,0				24,5	471	32,0
400	26	531	32,0	33	855	39,0				27,5	594	38,5
500	29,2	670	39,5	40	1257	50,0		*		31	755	42,0
630	33,5	881	42,0			0-0-0-0				34,5	935	44,0
800		*			*					40	1257	52,0
1000					-	1				44	1521	58,0
Commentaires		orme Fran			Ferroviaire		No	rme Allem			rme Allema	
	0	cosse tubul	the second se		osse tubula	and the second se		Cosse roul	A REAL PROPERTY OF A REAL PROPER		osse tubula	Contraction of the local division of the loc
Comments		rench Stan ibular Cabl			ilroad Stan bular Cable			erman Stan ded & wek			rman Stan sular Cable	
SECTION COMMERCIALE NOMINALE	IE	C 61238	-1		UL-CSA			VDE 022	0	DI	N VDE 5	7295
COSSES	Ø Int.	Section Intérieure Réelle	Ø Ext.	Ø Int.	Section Intérieure Réelle	Ø Ext.	Ø Int.	Section Intérieure Réelle	Ø Ext.	Ø Int.	Section Intérieure Réelle	Ø Ext.
1.6	 ,	-	_	<u> </u>	*	_	-	,	_		*	_
1,5		,						,	_			
4												
				1.7	2							
	3.3	0	5.0	1,7	2 4		3.5	, 10			1	
6 10	3,3	9 17	5,0	2,3	2 4 9		3,5	10 16		5,6	25	8,0
6	3,3 4,6 5,8	9 17 26	5,0 6,8 8,0		4					5,6 6,6	25 34	
6 10	4,6	17	6,8	2,3 3,4	4 9 16 26		4,5 5,5 7	16 24 38		6,6 7,9		9,5
6 10 16 25 35	4,6 5,8	17 26 38 62	6,8 8,0 9,5 11,8	2,3 3,4 4,5 5,8 7,7	4 9 16 26 47		4,5 5,5 7 8,5	16 24 38 57		6,6 7,9 9,2	34 49 66	9,5 11,0 12,5
6 10 16 25 35 50	4,6 5,8 7	17 26 38	6,8 8,0 9,5	2,3 3,4 4,5 5,8	4 9 16 26		4,5 5,5 7	16 24 38		6,6 7,9	34 49	9,5 11,0 12,5
6 10 25 35 50 60	4,6 5,8 7 8,9 10	17 26 38 62 79	6,8 8,0 9,5 11,8 13,0	2,3 3,4 4,5 5,8 7,7 9,4	4 9 16 26 47 69		4,5 5,5 7 8,5 10	16 24 38 57 79		6,6 7,9 9,2 11	34 49 66 95	9,5 11,0 12,5 15,0
6 10 25 35 50 60 70	4,6 5,8 7 8,9 10 11,3	17 26 38 62 79 100	6,8 8,0 9,5 11,8 13,0 14,6	2,3 3,4 4,5 5,8 7,7 9,4 11,4	4 9 16 26 47 69 102		4,5 5,5 7 8,5 10 12	16 24 38 57 79 113		6,6 7,9 9,2 11 13,1	34 49 66 95 135	9,5 11,0 12,5 15,0
6 10 25 35 50 60 70 95	4,6 5,8 7 8,9 10 11,3 13,5	17 26 38 62 79 100 143	6,8 8,0 9,5 11,8 13,0 14,6 17,5	2,3 3,4 4,5 5,8 7,7 9,4 11,4 13,3	4 9 16 26 47 69 102 139		4,5 5,5 7 8,5 10 12 13,5	16 24 38 57 79 113 143		6,6 7,9 9,2 11 13,1 14,5	34 49 66 95 135 165	9,5 11,0 12,5 15,0 17,0 19,0
6 10 16 25 35 50 60 70 95 120	4,6 5,8 7 8,9 10 11,3 13,5 15,2	17 26 38 62 79 100 143 181	6,8 8,0 9,5 11,8 13,0 14,6 17,5 19,7	2,3 3,4 4,5 5,8 7,7 9,4 11,4 13,3 14,5	4 9 16 26 47 69 102 139 165		4,5 5,5 7 8,5 10 12 13,5 15	16 24 38 57 79 113 143 177		6,6 7,9 9,2 11 13,1 14,5 16,2	34 49 66 95 135 165 206	9,5 11,0 12,5 15,0 17,0 19,0 21,0
6 10 25 35 50 60 70 95 120 150	4,6 5,8 7 8,9 10 11,3 13,5 15,2 16,7	17 26 38 62 79 100 143 181 219	6,8 8,0 9,5 11,8 13,0 14,6 17,5 19,7 21,5	2,3 3,4 4,5 5,8 7,7 9,4 11,4 13,3 14,5 16,4	4 9 16 26 47 69 102 139 165 211		4,5 5,5 7 8,5 10 12 13,5 15 16,5	16 24 38 57 79 , 113 143 177 214		6,6 7,9 9,2 11 13,1 14,5 16,2 18	34 49 66 95 135 165 206 254	9,5 11,0 12,5 15,0 17,0 19,0 21,0 23,0
6 10 25 35 50 60 70 95 120 150 185	4,6 5,8 7 8,9 10 11,3 13,5 15,2 16,7 19	17 26 38 62 79 100 143 181 219 284	6,8 8,0 9,5 11,8 13,0 14,6 17,5 19,7 21,5 24,5	2,3 3,4 4,5 5,8 7,7 9,4 11,4 13,3 14,5	4 9 16 26 47 69 102 139 165		4,5 5,5 7 8,5 10 12 13,5 15 16,5 19	16 24 38 57 79 113 143 177 214 284		6,6 7,9 9,2 11 13,1 14,5 16,2 18 20,6	34 49 66 95 135 165 206 254 333	9,5 11,0 12,5 15,0 17,0 19,0 21,0 23,0 26,0
6 10 25 35 50 60 70 95 120 150 185 240	4,6 5,8 7 8,9 10 11,3 13,5 15,2 16,7 19 21	17 26 38 62 79 100 143 181 219 284 346	6,8 8,0 9,5 11,8 13,0 14,6 17,5 19,7 21,5 24,5 27,3	2,3 3,4 4,5 5,8 7,7 9,4 11,4 13,3 14,5 16,4	4 9 16 26 47 69 102 139 165 211		4,5 5,5 7 8,5 10 12 13,5 15 16,5 19 21	16 24 38 57 79 113 143 177 214 284 346		6,6 7,9 9,2 11 13,1 14,5 16,2 18 20,6 23	34 49 66 95 135 165 206 254 333 415	9,5 11,0 12,5 15,0 17,0 19,0 21,0 23,0 26,0 28,0
6 10 25 35 50 60 70 95 120 150 185 240 300	4,6 5,8 7 8,9 10 , 11,3 13,5 15,2 16,7 19 21 23,7	17 26 38 62 79 100 143 181 219 284 346 441	6,8 8,0 9,5 11,8 13,0 14,6 17,5 19,7 21,5 24,5 27,3 30,7	2,3 3,4 4,5 5,8 7,7 9,4 11,4 13,3 14,5 16,4	4 9 16 26 47 69 102 139 165 211		4,5 5,5 7 8,5 10 12 13,5 15 16,5 19 21 23,5	16 24 38 57 79 113 143 143 177 214 284 346 434		6,6 7,9 9,2 11 13,1 14,5 16,2 18 20,6	34 49 66 95 135 165 206 254 333	9,5 11,0 12,5 15,0 17,0 19,0 21,0 23,0 26,0 28,0
6 10 25 35 50 60 70 95 120 150 185 240	4,6 5,8 7 8,9 10 11,3 13,5 15,2 16,7 19 21	17 26 38 62 79 100 143 181 219 284 346	6,8 8,0 9,5 11,8 13,0 14,6 17,5 19,7 21,5 24,5 27,3	2,3 3,4 4,5 5,8 7,7 9,4 11,4 13,3 14,5 16,4	4 9 16 26 47 69 102 139 165 211		4,5 5,5 7 8,5 10 12 13,5 15 16,5 19 21	16 24 38 57 79 113 143 177 214 284 346		6,6 7,9 9,2 11 13,1 14,5 16,2 18 20,6 23	34 49 66 95 135 165 206 254 333 415	9,5 11,0 12,5 15,0 17,0 19,0 21,0 23,0 26,0 28,0
6 10 25 35 50 60 70 95 120 150 150 185 240 300 400	4,6 5,8 7 8,9 10 , 11,3 13,5 15,2 16,7 19 21 23,7	17 26 38 62 79 100 143 181 219 284 346 441	6,8 8,0 9,5 11,8 13,0 14,6 17,5 19,7 21,5 24,5 27,3 30,7	2,3 3,4 4,5 5,8 7,7 9,4 11,4 13,3 14,5 16,4	4 9 16 26 47 69 102 139 165 211		4,5 5,5 7 8,5 10 12 13,5 15 16,5 19 21 23,5	16 24 38 57 79 113 143 143 177 214 284 346 434		6,6 7,9 9,2 11 13,1 14,5 16,2 18 20,6 23	34 49 66 95 135 165 206 254 333 415	9,5 11,0 12,5 15,0 17,0 19,0 21,0 23,0 26,0 28,0
6 10 16 25 35 50 60 70 95 120 150 150 185 240 300 400 500	4,6 5,8 7 8,9 10 , 11,3 13,5 15,2 16,7 19 21 23,7	17 26 38 62 79 100 143 181 219 284 346 441	6,8 8,0 9,5 11,8 13,0 14,6 17,5 19,7 21,5 24,5 27,3 30,7	2,3 3,4 4,5 5,8 7,7 9,4 11,4 13,3 14,5 16,4	4 9 16 26 47 69 102 139 165 211		4,5 5,5 7 8,5 10 12 13,5 15 16,5 19 21 23,5	16 24 38 57 79 113 143 143 177 214 284 346 434		6,6 7,9 9,2 11 13,1 14,5 16,2 18 20,6 23	34 49 66 95 135 165 206 254 333 415	9,5 11,0 12,5 15,0 17,0 19,0 21,0 23,0 26,0 28,0
6 10 16 25 35 50 60 70 95 120 150 150 185 240 300 400 500 630	4,6 5,8 7 8,9 10 , 11,3 13,5 15,2 16,7 19 21 23,7	17 26 38 62 79 100 143 181 219 284 346 441	6,8 8,0 9,5 11,8 13,0 14,6 17,5 19,7 21,5 24,5 27,3 30,7	2,3 3,4 4,5 5,8 7,7 9,4 11,4 13,3 14,5 16,4	4 9 16 26 47 69 102 139 165 211		4,5 5,5 7 8,5 10 12 13,5 15 16,5 19 21 23,5	16 24 38 57 79 113 143 143 177 214 284 346 434		6,6 7,9 9,2 11 13,1 14,5 16,2 18 20,6 23	34 49 66 95 135 165 206 254 333 415	9,5 11,0 12,5 15,0 17,0 19,0 21,0 23,0 26,0 28,0
6 10 16 25 35 50 60 70 95 120 150 150 185 240 300 400 500 630 800 1000	4,6 5,8 7 8,9 10 11,3 13,5 15,2 16,7 19 21 23,7 27	17 26 38 62 79 100 143 181 219 284 346 441	6,8 8,0 9,5 11,8 13,0 14,6 17,5 19,7 21,5 24,5 27,3 30,7 35,0	2,3 3,4 4,5 5,8 7,7 9,4 11,4 13,3 14,5 16,4 19,5	4 9 16 26 47 69 102 139 165 211	aine	4,5 5,5 7 8,5 10 12 13,5 15 16,5 19 21 23,5 27	16 24 38 57 79 113 143 143 177 214 284 346 434	ande	6,6 7,9 9,2 11 13,1 14,5 16,2 18 20,6 23 26	34 49 66 95 135 165 206 254 333 415	9,5 11,0 12,5 15,0 17,0 21,0 23,0 26,0 28,0 32,0
6 10 16 25 35 50 60 70 95 120 150 150 185 240 300 400 500 630 800	4,6 5,8 7 8,9 10 ,11,3 13,5 15,2 16,7 19 21 23,7 27 , Norm	17 26 38 62 79 100 143 181 219 284 346 441 573	6,8 8,0 9,5 11,8 13,0 14,6 17,5 19,7 21,5 24,5 27,3 30,7 35,0	2,3 3,4 4,5 5,8 7,7 9,4 11,4 13,3 14,5 16,4 19,5	4 9 16 26 47 69 102 139 165 211 299		4,5 5,5 7 8,5 10 12 13,5 15 16,5 19 21 23,5 27	16 24 38 57 79 113 143 177 214 284 346 434 573		6,6 7,9 9,2 11 13,1 14,5 16,2 18 20,6 23 26	34 49 66 95 135 165 206 254 333 415 531	
6 10 16 25 35 50 60 70 95 120 150 150 185 240 300 400 500 630 800 1000	4,6 5,8 7 8,9 10 11,3 13,5 15,2 16,7 19 21 23,7 27	17 26 38 62 79 100 143 181 219 284 346 441 573	6,8 8,0 9,5 11,8 13,0 14,6 17,5 19,7 21,5 24,5 27,3 30,7 35,0	2,3 3,4 4,5 5,8 7,7 9,4 11,4 13,3 14,5 16,4 19,5	4 9 16 26 47 69 102 139 165 211 299	e	4,5 5,5 7 8,5 10 12 13,5 15 16,5 19 21 23,5 27	16 24 38 57 79 113 143 177 214 284 346 434 573 ,	aire	6,6 7,9 9,2 11 13,1 14,5 16,2 18 20,6 23 26	34 49 66 95 135 165 206 254 333 415 531	9,5 11,0 12,5 15,0 17,0 19,0 21,0 23,0 26,0 28,0 32,0 32,0

LUGS

Internal sections of different standards

SECTION	NF	C 33-09	0-1
NOMINALE COSSES ALUMINIUM	Ø Int.	Section Intérieure Réelle	Ø Ext.
1,5			
2,5			
4			
6			
10			
16	5,5	24	16,0
25	6,5	33	16,0
35	8	50	16,0
50	9	64	20,0
70	11	95	20,0
95	12,5	123	20,0
120	13,7	147	25,0
150	15,5	189	25,0
185	17	227	32,0
240	19,5	299	32,0
300	23,3	426	40,0
400	26	531	40,0
500	29,1	665	47,0
630	32,5	830	47,0
800			
1000		,	
Commentaires		orme Franç se tubulair	
Comments		ench Stand Tubular Cat	

SECTION	Cs	te TH 650	°C
COMMERCIALE NOMINALE COSSES NICKEL	Ø Int.	Section Intérieure Réelle	Ø Ext.
0,5 - 1	1,6	2,0	3,2
1,5 - 2,5	2,3	4,2	3,9
4,0 - 6,0	3,6	10	5,6
10	4,5	16	6,5
16	5,5	24	7,5
25	7	38	10,0
Commentaires			
Commentaires	На	ute Tempér	ature
Comments	Cable	e lugs for hi	igh T°C

SECTION	DIN 46228/1					
NOMINALE	Ø Int.	Section Intérieure Réelle	Ø Ext.			
0,25	0,8	0,5	1,1			
0,34	0,9	0,6	1,2			
0,5	1	0,8	1,3			
0,75	1,2		1,5			
1	1,4	1,5	1,7			
1,5	1,7	2,3	2			
2,5	2,2	3,8	2,5			
4	2,8	6,2	3,2			
6	3,5	10	3,9			
10	4,5	16	4,9			
16	5,8	26	6,2			
25	7,3	42	7,8			
35	8,3	54	8,8			
50	10,3	83	10,9			
70	12,5	123	13,3			
95	14,5	165	15,3			
120	16,5	214	17,5			
150	18,5	269	19,5			
185	20	314	21,2			
Commentaires		orme Allema nchons tube				
Comments		erman Stan bular Cable				

SECTION	Cste TH 400 °C			
COMMERCIALE NOMINALE COSSES INOX	Ø Int.	Section Intérieure Réelle	Ø Ext.	
0,5 - 1	1,6	2,0	3,2	
1,5 - 2,5	3	7,1	5,0	
4,0 - 6,0	4	13	6,0	
10	5	20	7,0	
16	6	28	8,0	
25	7	38	10,0	
35	9	64	12,0	
50	10	79	14,0	
70	12	113	16,0	
			18,0	
Commentaires	Atm	osphère cor	rrosive	
Comments	Cable lugs for corrosive			

Gauge according to the standards

Allow to detremine the ideal connector for your cable among all the standards

Material :

Aluminium 7075

Standards :

IEC 61238-1 , NFC 20130, NFF 00-363, DIN 46235

Custom made :

Other standards



Specifical Lugs

Innovative solution for connections in the most demanding application

Material :

 Copper, Aluminium, Brass, Bronze

Surface traitement

Ag, Ni, Tn, Or

Areas activities

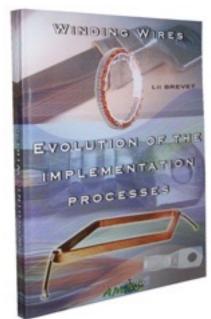
 Aeronautics, Automotives, Energy, Nuclear, Railways



SUPPORT

WINDING WIRES

Evolution of the implementation processes



Éditor : AMR ELECTRONIQUE

Collection / Série : Winding wires ; 1

215 pages ; 21 x 15 cm ;

ISBN 978-2-9519035-3-1

This collection is designed for Professionals winding.

It tries to present the state of the art and especially the evolution of products and processes in the coming years.

It shows some new production tools and the Industrial Quality Tools needed for different sectors.

The approach to these tools is pragmatic and some formulas and tables that illustrate these pages are given to indicate to the reader the orientation of its industrial development. This book tries to debunk some assertions from the nature of things and ... habits...

TEST RESOURCES

Mechanical and electrical qualifications according to different standards ensure to our our customers the mastery and quality of their connections.

-Tensile test - Standard aging cycle at 120 ° C (Adaptable to the specific needs of the client)

- Shooting current system
 - Steaming-to + 200 ° C

Tensile test

According with among all the standards



Technical specifications							
Model	BTE1	BT2	BT3				
AMR number	A M R 0 1 2 3	AMR0856	A M R 0 4 2 7				
Capacities	200 N	5000 N	40000 N				
Range section	0,1 up to 1,5 mm2	1,5 up to 95 mm2	50 up to 630 mm2				
Steamed system	YES	NO	NO				
Aquisition system	Force / Time / Temperature						

TEST RESOURCES

Micro-photography

Optical measurement tools allow visualization of the qualification results. Analysis wire Ø 0.01 mm



Aging Système

Electrical and mechanical qualification is the best way to validate the quality of your connections.



PROFITS

		TECHNOLOGICAL ADVANTAGE				ECONOMICAL ADVANTAGE		
PERFECT MULTI-SUPPORT CONNEXION, WITHOUT FILLER METAL	SINGLE ENAMELLED WIRE	Removal of dangerous processes like blowtorch Removal of dangerous and forbidden processes like chemical strip Removal of processes which do not maintain the entirety of the wire, like	1	Answer to the ageing problems of leadfree welds (RoHs guideline)	Resistance of the connection up to two times lower, due to the fact that the tin alloys used for soft solders have resistivity ten times upper than copper one.	Removal of oxidation due to electrolytic couples and soft solders fluxes. Moreover, in the car industry, soft solders are prohibited because of the rigidity between the wires flush with the terminal which makes them very flimsy when vibrating.		30'
	LITZ WIRE		No damage for the enamel nor for the metallurgical properties of the metal due to the baring when using the blowtorch					- \$.
ONNEXION, W	FLAT ENAMELLED WIRE						Cutting down the time required for making the internal connections (Some seconds instead of several minutes)	Cutting down the amount of materials employed: flexible sheaths, filler metal, reduction of the contacts sizes
I-SUPPORT CC	FLAT ENAMELLED TRANSPOSED WIRE						several minutes)	
ERFECT MULTI	DIRECT CABLES CONNEXION	mechanical stripping devices					e e e	
đ	ADVANTAGES Mastery of Process Control			Technological improvement			Major financial impact	
TECHNICAL ADVANTAGES WITH IMMEDIATE EFFECT GIVING :								
AN OUTSTANDING PROCESS CONTROL : REPRODUCTIBILITY AND SIMPLIFICATION								
	FINANCIAL ADVANTAGES WITH IMMEDIATE EFFECT, INVOLVING :							
LOW INVESTMENT AND NOTABLE IMPROVEMENT OF THE QUALITY								
	IMMEDIATE IMPROVEMENT OF THE QUALITY INDUCING :							
	THE SATISFACTION OF THE CUSTOMER AND COMPETITIVE BENEFITS							



CWIEME BERLIN

www.coilwindingexpo.com/berlin 10-12 May 2016 Messe Berlin

Appointment in 2017 with our patner SOFILEC to attend the demonstration COSDEM.

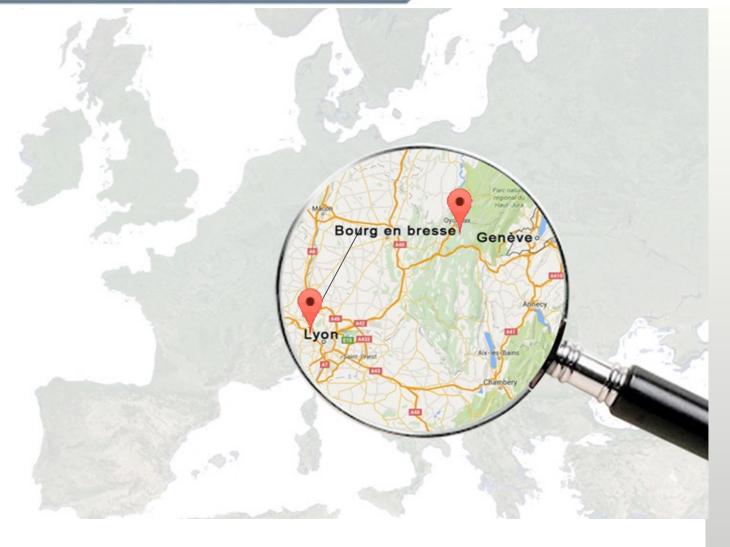
re 2015 à LYON
binages du futur

Type of conductor, insulation system, working frequency, held dielectric, operating temperature, types of converters, efficient connector, connection and agglomeration process, we offer you solutions complete adapted to growing requirements for design your winding.



Find our demonstration video on you tube : https://www.youtube.com/channel/UCqvJm5zm-OpFsiAPhH1AQEg

LOCALIZATION



AMR Electronique ZI Les Fougères 45, Allée du Petit Plan F-0125 SAINT JUST FRANCE

Tel. +33(0)4 74 23 23 06



https://www.amr-electronique.com







http://cosdem.com/Fr/Index.htm





This documentation is not contractual.

Items represented are proposed while stock lasts.

AMR reserves the right to discontinue its production or change specification without notice.

Non-contractual picture