



#### Alpha Therm GmbH: Ihr Offizieller Vertriebskanal für SETsafe/SETfuse

Die Alpha Therm GmbH mit Sitz in Plankstadt, Deutschland, ist stolz darauf, der offizielle Vertriebskanal für SETsafe/SETfuse in Deutschland, Europa und weltweit zu sein. Unsere langjährige Partnerschaft mit SETsafe/SETfuse basiert auf einem erfolgreichen und vertrauensvollen Geschäftsmodell.

Wir repräsentieren SETsafe/SETfuse auf internationalen Messen wie der Electronica, InterSolar, ees und vielen weiteren. Von kleinen Standardsicherungen bis hin zu komplexen, kundenspezifischen Automotive-Projekten – wir haben alles erfolgreich umgesetzt. Mit unserer umfassenden Lagerhaltung in Deutschland gewährleisten wir schnelle und zuverlässige Lieferungen.

Kontaktieren Sie uns! Unser kompetentes Team berät Sie ausführlich und findet die optimale Lösung für Ihre Anforderungen. Vertrauen Sie auf Alpha Therm GmbH und SETsafe/SETfuse – Ihre Partner für innovative Sicherheitslösungen.

### Kontakt:

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### Alpha Therm GmbH: Your Official Distribution Channel for SETsafe/SETfuse

Alpha Therm GmbH, based in Plankstadt, Germany, is proud to be the official distribution channel for SETsafe/SETfuse in Germany, Europe, and worldwide. Our long-standing partnership with SETsafe/SETfuse is built on a successful and trustworthy business model.

We represent SETsafe/SETfuse at international trade fairs such as Electronica, InterSolar, ees, and many more. From small standard fuses to complex, customized automotive projects, we have successfully handled it all. With our extensive warehousing in Germany, we ensure fast and reliable deliveries.

Contact us today! Our competent team will provide you with detailed advice and find the optimal solution for your requirements. Trust Alpha Therm GmbH and SETsafe/SETfuse – your partners for innovative safety solutions.

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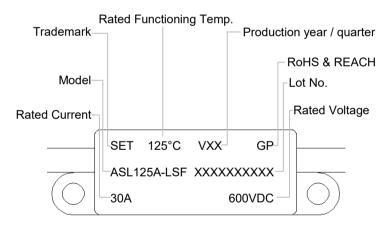


#### **Description**

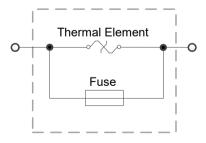
The Direct Current Thermal-Link Alloy Type (DC-ATCO) is a thermal-link that utilizes low melting point alloys, known as the thermal element, which fuse when heated to a specific fusing temperature. This allows for controlled circuit disconnection. The DC-ATCO is composed of various components, including the low melting point alloys (thermal element), flux resin, electrode leads, sealant, a case, a fuse, filler material and stranded conductor.

The DC-ATCO is widely employed for over-temperature protection in electrical equipment and electric vehicles. Typically, the low melting point alloys (thermal element) are connected in series between two electrode pins. When the temperature reaches the predetermined fusing temperature of the DC-ATCO, the low melting point alloys (thermal element) melt and swiftly retract to the ends of the two pins, facilitated by the flux resin. This effectively disconnects the circuit. The SETsafe | SETfuse Direct Current Thermal-Link (Alloy Type) is available in axial and radial shapes, with a rated functioning temperature ranging from 102 °C to 187 °C, rated current 30 A, rated voltage 600 VDC. It is compliant with RoHS and REACH regulations.

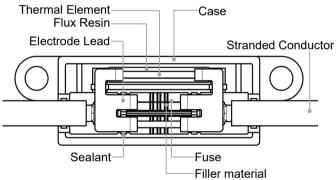
#### Marking



#### **Product Schematic**



#### **Structure Diagram**



#### **Features**

- 0 to 600 VDC Operating Voltage
- High Accuracy of Functioning Temp.
- Ceramic Case
- Non-Resettable
- RoHS & REACH Compliant

# **Applications**

- Battery Cooling Heaters
- Air-Conditioners Heaters
- Pre-charged Resistors
- High Power LED

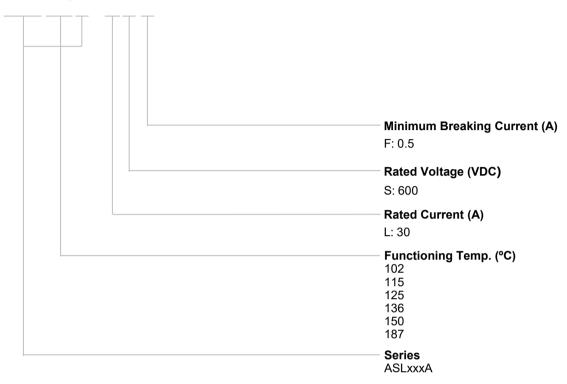
#### Customization

- Rated Functioning Temp.
- Stranded Conductor Size

**ASLxxxA Series** 

# **Part Number System**

**ASL125A - L S F** 



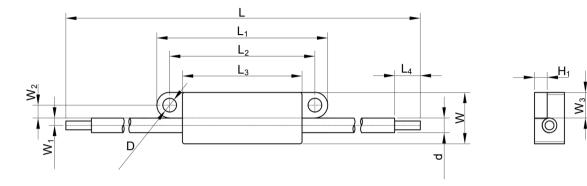
#### Reminder:

Part numbering system in the datasheet is only for selecting correct parameter and product features. Before placing order, please contact us for specifications and use the part number and product code in the specifications to place order to ensure the part is correct. Product code is the unique indentification.

**ASLxxxA Series** 

# **Dimensions (Unit: mm)**





L	L <sub>1</sub>	L <sub>2</sub>	L <sub>3</sub>	L <sub>4</sub>	W	W <sub>1</sub>	W <sub>2</sub>	W <sub>3</sub>	Н	H <sub>1</sub>	D	d
228.0 ± 5.0	40.0 ± 1.0	34.00 ± 1.0	28.0 ± 1.0	10.0 ± 1.0	12.0 ± 1.0	1.7 ± 0.2	3.0 ± 0.2	6.0 ± 0.5	7.0 ± 1.0	3.0 ± 0.5	3.2 ± 0.2	AWG12

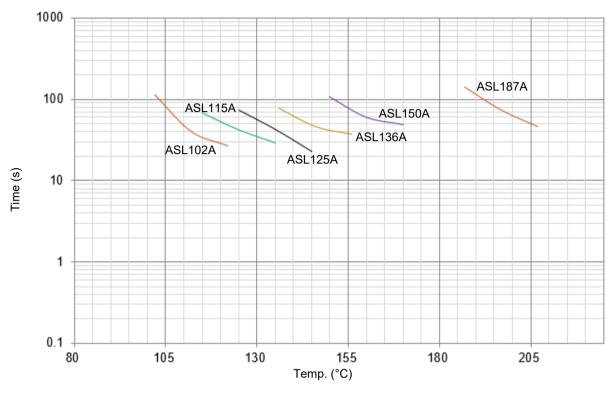
# **Specifications**

( <i>T</i> <sub>f</sub> ) °C		Model	I <sub>r</sub>	U <sub>r</sub>	Rated Functioning Temp.	<i>T</i> <sub>h</sub>	<i>T</i> <sub>m</sub>	I <sub>min</sub>	RoHS REACH
			(A)	DC (V)	(°C)	(°C)	(°C)	(A)	
Temp.	187	ASL187A-LSF	30	600	182 <sup>+5</sup> <sub>-3</sub>	140	250	0.5	•
	150	ASL150A-LSF	30	600	146 ± 3	95	250	0.5	•
ioni	136	ASL136A-LSF	30	600	131 ± 3	80	250	0.5	•
Functioning	125	ASL125A-LSF	30	600	122 ± 3	70	250	0.5	•
Rated F	115	ASL115A-LSF	30	600	112 ± 3	65	250	0.5	•
Ra	102	ASL102A-LSF	30	600	99 +5	55	250	0.5	•

1. RoHS & REACH Comply.

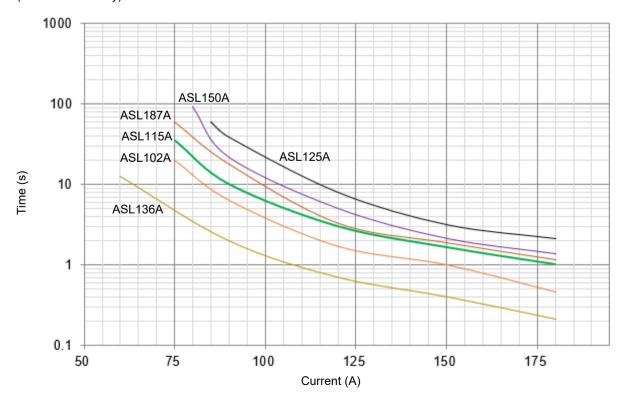
### **Temp.-Time Curve**

The functioning temperature time curve of Alloy Thermal-Link in different Temp. oil bath (For reference only).



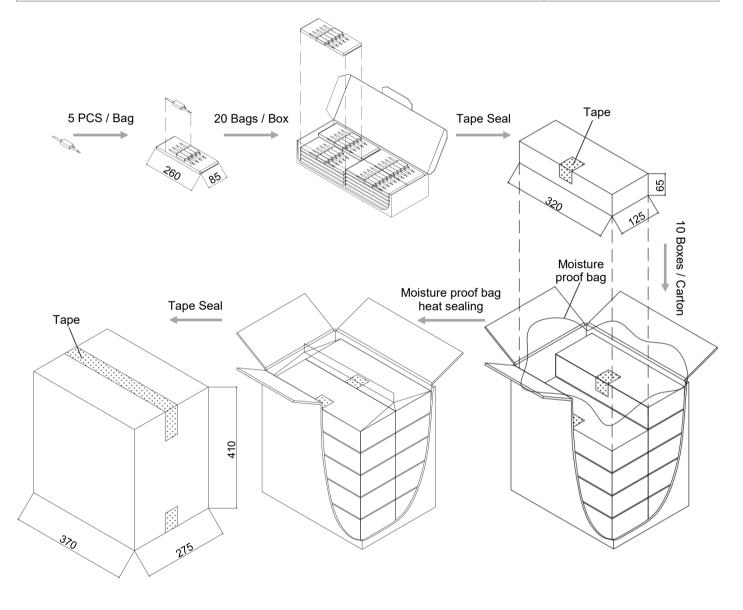
#### **Current-Time Curve**

This is an illustrated curve, describing the opening time at Multi-times rated current in the condition of the room Temp. 25 °C (For reference only).



# **Packaging Information**

Item	PE Bag	Вох	Carton
Dimensions (mm)	260 x 85	320 x 125 x 65	370 x 275 x 410
Quantity (PCS)	5	100	1000
Gross Weight (kg)			18 ± 10%





# **ASLxxxA Series**

# Glossary

Item	Description
DC-ATCO	DC-Alloy Thermal-Link DC-Alloy type Thermal-Link, Alloy is thermal element.
T <sub>f</sub>	Rated Functioning Temp.  The temperature of the Thermal-Link which causes it to change the state of conductivity with a detection current up to 10 mA as the only load.  Tolerance: $T_f$ (0 / -10) °C (GB 9816, EN 60691, K60691).  Tolerance: $T_f \pm 7$ °C (J60691).
Fusing Temp.	Fusing Temp.  The temperature of the Alloy Thermal-Link which causes it to change its state of conductivity is measured with silicone oil bath in which the temperature is increased at the rate of 0.5 °C to 1 °C / minute, with a detection current up to 10 mA as the only load.
T <sub>h</sub>	Holding Temp.  The Maximum temperature at which a Thermal-Link will not change its state of conductivity when conducting rated current for 168 hours.
T <sub>m</sub>	Maximum Temp. Limit  The temperature of the Thermal-Link stated by the manufacturer, up to which the mechanical and electrical properties of the Thermal-Link having changed its state of conductivity, will not be impaired for a given time.
<b>I</b> <sub>min</sub>	Minimum Breaking Current  The minimum current that Fuse requires after the Alloy of Thermal-Link opens in the circuit.
I <sub>r</sub>	Rated Current The current used to classify a Thermal-Link, which is the maximum current that Thermal-Link allows to carry and is able to cut off the circuit safely.
U <sub>r</sub>	Rated Voltage  The voltage used to classify a Thermal-Link, which is the maximum voltage that Thermal-link allows to carry and is able to cut off the circuit safely.



**ATTENTION** 

#### **Usage**

- 1. When atmosphere pressure is from 80 kPa to 106 kPa, the related altitude shall be from -500 m to 2000 m.
- 2. Operating voltage less than rated voltage of DC-ATCO, operating current less than rated current of DC-ATCO.
- 3. Do not touch the DC-ATCO body or lead wires directly when power is on, to avoid burn or electric shock.

#### Replacement

DC-ATCO is a non-repairable product. For safety sake, it shall be replaced by an equivalent DC-ATCO from the same manufacturer, and mounted in the same way.

### **Storage**

Do not store the DC-ATCO at the high temp., high humidity or corrosive gas environment. The product shall be stored at  $25 \pm 5$  °C and  $\leq 70\%$  RH, avoid direct sunlight and shall use them up within 1 year after receiving the goods.

#### Installation

Make Sure the Temp. of Installation Position

- 1. It is recommended that a dummy DC-ATCO with inbuilt thermo-couple shall be used to determine the proper temp.
- 2. he terminal product should be tested to ensure that potential abnormal conditions do not cause ambient temp. to exceed the  $T_m$  of the DC-ATCO.
- 3. Mount the DC-ATCO at the location where temp. rises evenly.

Installation position of mechanical performance requirements

- 1. Ensure that the lead wire is long enough, and avoid actions such as press, tensile or twist.
- 2. The seal or body of DC-ATCO must not be damaged, burned or over heated.

#### **ASLxxxA Series**

#### **Mechanical Connection**

#### Riveting

- 1. Choose small resistivity riveting material and be riveted.
- 2. A flexible lead or lead with low resistance should be used to rivet the DC-ATCO.
- 3. Contact resistance should be minimal, Large contact resistance will lead to higher temp., DC-ATCO Functioning in advance.

#### Soldering

#### **Hand-Soldering**

- 1. Soldering should be carried out according to Table T-1.
- 2. The thermal element of DC-ATCO is thermal element with low melting point, which is jointed with DC-ATCO lead wires. Improper soldering operation (too high soldering temp., too long soldering time, too short lead wire etc.) may transfer more heat to the thermal element and DC-ATCO may open in advance.
- 3. When soldering conditions are more severe than those listed in Table T-1, a heat sink fixture should be used between soldering point and DC-ATCO body.
- 4. When soldering, please do not pull / push or twist DC-ATCO body or lead wires.
- 5. After soldering, let it naturally cool for longer than 20 seconds. During cooling, never move the DC-ATCO body or lead wires.

TABLE T-1 Hand-Soldering Time

Rated		Max. Allowable		Time for Different Le (Fig.H-1)	ad Wire Ler	ngth	
Functioning Temp.		Time		Time		Time	Max. Soldering
(T <sub>f</sub> )	Length	Tinned Copper Wire	Length	Tinned Copper Wire	Length	Tinned Copper Wire	Temp.
(°C)	(mm)	(s)	(mm)	(s)	(mm)	(s)	(°C)
76 ~ 101	10	1 <sup>a</sup>	20	2	30	3	
102 ~ 115	10	1 <sup>a</sup>	20	2	30	3	
116 ~ 135	10	1ª	20	3	30	5	400
136 ~ 150	10	3	20	5	30	5	
151 ~ 230	10	4	20	6	30	7	

a: Auxiliary heat sink fixture is required to avoid DC-ATCO cutting off unexpectedly.

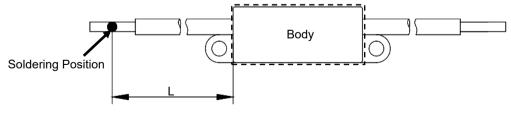
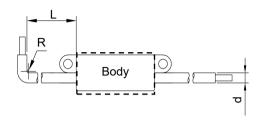


FIGURE T-1

# ASLxxxA Series

### **Lead Wire Forming**

- 1. If lead wire has to be bent, please pay attention to the distance between body and bending point. Refer to Table T-3.
- When bending leads, please use pincher or similar tools to fix the product as shown in Figure T-2 to avoid damaging the product.
- 3. During forming and mounting, lead wire should not be cut, nicked, bent sharply, to avoid breaking the product.
- Tangential forces on the leads must be avoided (i.e. pushing or pulling on the leads at angle to DC-ATCO body) as such forces may damage the seal of DC-ATCO.
- 5. Bending radius R: ≥ 15 d, as shown in Figure T-2.



**FIGURE T-2** 

#### TABLE T-3 Distance between Body and Bending Point

	d	(mm)	< 1.0	1.0 to 1.2	> 1.2
Lead Wire	L	(mm)	≥ 3	≥ 5	≥ 10

										,	<b>^</b>
	230	0	0	0	0	0	0	0	0	0	$\vdash$
	221	0	0							0	
	205	0	0							0	
	200	0	0			0				0	
O	187	TGH187-HVS^	ASL187A-LSF^	RSK187A-KSS <sup>^</sup>	RVH187-HSF <sup>^</sup>	ARL187-LRA^			RQF187-FQS^	0	
•	160	0	0							0	
F	150	TGH150-HVS^	ASL150A-LSF^	RSK150A-KSS <sup>^</sup>	RVH150-HSF <sup>^</sup>	ARL150-LRA^	RPK150-HRZ <sup>^</sup>	TG150C-HQZ <sup>^</sup>	RQF150-FQS^	TG150C-JPZ^	
•	145	0								0	
n d	139	0								0	
e,	136	TGH136-HVS^	ASL136A-LSF^	RSK136A-KSS <sup>^</sup>	RVH136-HSF <sup>^</sup>	ARL136-LRA^	RPK136-HRZ <sup>^</sup>	TG136C-HQZ <sup>^</sup>	RQF136-FQS^	TG136C-JPZ^	
_	135	0	0							0	3
Rated Functioning Temp. ( $T_{ m r}$ ) $^{\circ}$ C	133	0	0							0	Model
on	130	TGH130-HVS^			RVH130-HSF <sup>^</sup>				RQF130-FQS^	0	0
ij	125	TGH125-HVS^	ASL125A-LSF^	RSK125A-KSS <sup>^</sup>	RVH125-HSF <sup>^</sup>	ARL125-LRA^	RPK125-HRZ <sup>^</sup>	TG125C-HQZ <sup>^</sup>	RQF125-FQS^	TG125C-JPZ^	
Ĕ	123	0									
屲	120	0								0	
þ	115	TGH115-HVS^	ASL115A-LSF^	RSK115A-KSS <sup>^</sup>	RVH115-HSF <sup>^</sup>	ARL115-LRA^	RPK115-HRZ <sup>^</sup>	TG115C-HQZ <sup>^</sup>	RQF115-FQS^	TG115C-JPZ^	
ate	105	0									
~	102	TGH102-HVS^	ASL102A-LSF <sup>^</sup>	RSK102A-KSS <sup>^</sup>	RVH102-HSF <sup>^</sup>	ARL102-LRA^	RPK102-HRZ <sup>^</sup>	TG102C-HQZ <sup>^</sup>	RQF102-FQS^	TG102C-JPZ^	
	97	0									
	93	0								0	
	86	0				ARL86-LRA^		TG86C-HQZ^	RQF86-FQS^		
	76(	) 0	0	0	0	0	0	0	0	0	
/r ( Rated 0	A) Current	15	30	25	15	30	15	15	10	20	
<b>U</b> r (∨ Rated \	DC)^ Voltage	850		600		5	00	4	50	400	
<b>U</b> <sub>r</sub> (∨ Rated \	/AC)* Voltage	0		0			0		0	0	
Proc Struc	duct cture							0	0		
			Shape	Radial	Shape	Axial Shape	Radial Shape	Axial Shape	Radial Shape	Axial Shape	
		·		aaiai	- · ·  - =						•

Ur (VE Rated Vo Arated Vo Prod	102 97 93 86 76 Ir (A) ated Current J. (VDC)^a ated Voltage Ur (VAC)* ated Voltage	60 C	0	400		200 690	50	00	180		12	225		
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		) 0	0	0										
		0	TG86C-HSZ*	RPF86-FPF^										
		0												ı
Ľ		TG102C-JSZ*							ALP102-PLZ^	QD102^	PD102^	TD102^	SD102^	ı
Kated Functioning lemp. ( $I_i$ ) ${}^{\circ}\mathrm{C}$	105	0												
O O	115	TG115C-JSZ*			ALP115-HLZ^					QD115^	PD115^	TD115^	SD115^	l
T	120	0												
2	123	0				0	0	0	0	0	0	0	0	١
<b>1</b> 0	125	TG125C-JSZ*				HN125^*	HP125^*	HS125^*	ALP125-PLZ^	QD125 <sup>^</sup>	PD130 <sup>4</sup>	TD130*	SD125^	l
Ξ.	133 130	0								QD130^	PD130^	TD130^	SD130^	
DG	135	0												ı
<u>e</u>	136	TG136C-JSZ*				HN136^*	HP136^*	HS136^*		QD136^	PD136^	TD136^	SD136^	
Ē	139	0												ı
<u>.</u>	145	0												L
-	150	TG150C-JSZ*				HN150^*	HP150^*	HS150^*		QD150^	PD150^	TD150^	SD150^	l
<u> </u>	160	0												ı
()	187	0												١
	200	0												ı
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															<b>^</b>
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	221	0													1
	205	0												0	
	200	0													1
O	187	0												0	
•	160	0													1
7	150	0										S150^	T150^	0	
<u>.</u>	145	0													1
ď	139	0												0	
<u>ē</u>	136	Q136^*	Q136*	Q136*	P136^*	P136*	P136*	TB136-UHZ^	TB136-UJZ*	TS136-RHZ <sup>^</sup>	TS136-RJZ*	S136^	T136^		
6	135	0												0	3
Rated Functioning Temp. ( $T_{ m r}$ ) $^{\circ}$ C	133	0													Model
OU	130	0						TB130-UHZ <sup>^</sup>	TB130-UJZ*					0	<u> </u>
<del>S.</del>	125	Q125^*			P125^*			TB125-UHZ <sup>^</sup>	TB125-UJZ*	TS125-RHZ <sup>^</sup>	TS125-RJZ*				
Š	123	0												0	
屲	120	0													
pa	115	Q115^*	Q115*	Q115*	P115^*	P115*	P115*	TB115-UHZ <sup>^</sup>	TB115-UJZ*	TS115-RHZ <sup>^</sup>	TS115-RJZ*	S115^	T115^	0	
ate	105	0													
~	102	Q102^*			P102^*	P102*	P102*	TB102-UHZ^	TB102-UJZ*	TS102-RHZ <sup>^</sup>	TS102-RJZ*	S102 <sup>^</sup>	T102^	0	
	97	0													
	93	0												0	
	86	0													
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r ( Rated 0		ļ	25			20		20	00	10	00	10	15 16	50	1
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U <sub>r</sub> (V Rated V	/AC)* /oltage	400	300	250	400	300	250	0	125	0	125		o 	0	
Proc Struc	duct cture								° ° ° ° ° ° ° ° ° ° ° ° ° ° ° ° ° ° °		•				
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	93 86	D100*		U18^*					0							0					C 100	O V40A*	O 1/100*	O F10*
	97	0																						
	102	R1^*		U1^*																	F1^	X1^*	K1^*	F1*
1	105	0																						
, 1	115	R2^*		U2^*				C2^				V2^		SF2^							F2^	X2^*	K2^*	F2*
1	120	0																						
1	123	0																						
1	125	R3^*		U3^*								0		0			H3^*				0	X3^*	K3^*	F3*
1	130	R4^*		U4^*								V4^		SF4 <sup>^</sup>							F4^	X4*	K4*	F4*
1	135 133	R5^*		U5^*								○ V8^		SF8^							F8^	X5* X8*	K5*	F8*
1	136	0		0									X9^							K9^		X9*	K9*	
_	139	0	CR13^			M13^	C13^				SF13^	V13^	0							0	F13^	0	0	F13*
1	145	R6^*		U6^*	C6^								X6^							K6^	F6^	X6*	K6*	F6*
1	150	R7^*		U7^*																		X7*	K7*	F7*
_ 1	160	R16^*		U16^*						C16^*							H16^*	V16^*				X16^*	K16^*	F16*
	187	0																				X17^*	K17^*	
	200	0		0						0					0		0	0	0			0	0	
2	221   205	R31^*		U31^*						C31^*					B31^* B32^*		H31^* H32^*	V31^* V32^*	V31* V32*			X31* X32*	K31*	
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